REPORT ON EXPLORATION PROGRAMS

Topboot Lake and Sylvanite Projects
Swayze and Denyes Townships
Swayze Area, Ontario
1988
for
CAN MAC EXPLORATION LTD

Report on Exploration Programs
Topboot Lake Project
Sylvanite Project

by

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GEOLOGICAL ENGINEERING SERVICES

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SUMMARY:

Can Mac Exploration Ltd. Has option agreements on three properties in the Swayze Gold District near Timmins, Ontario. The company has recently completed work on two of these properties referred to as the Topboot Lake and Sylvanite Prospects. They are comprised of 42 and 76 unpatented, contiguous claims in Swayze and Denyes Townships. During the period of May through October, 1988, further linecutting, stripping, trenching, and diamond drilling was conducted on the Topboot Lake group of claims. In August and September, 1988, an access corridor was opened to the Sylvanite group of claims where stripping and trenching programs were carried out.

The stripping and trenching on the Topboot Lake property was successful in extending the Derraugh Vein System over a strike length of > 300 metres, and the Main Derraugh Vein System over a strike length of 265 metres. Some secondary splay veins en-echelon to the Main Derraugh Vein were also stripped after achieving highly anomalous gold values in grab samples associated with disseminated chalcopyrite. The #2 Vein system was also extended over a strike length of 80 metres. Stripping failed to identify any additional significant quartz veins near the #3 Vein. The 1,204.5 metre (3,952 foot) Diamond Drill Program was successful in intersecting both the Derraugh and #2 Veins. However, the gold concentrations in core samples were found to be much lower, up to 1580 ppb (.046 oz Au), than grades achieved in surface chip samples (up to 52,460 ppb (1.53 ozs. Au/ton) in the

Derraugh Vein). Therefore no current work is recommended on the known vein occurrences. The Topboot lake property has grassroots gold exploration potential on other parts of the claim group.

The stripping on the Sylvanite claims was successful in exposing a number of interesting vein occurrences associated with feldspar porphyry dykes. Grab samples collected from these veins returned grades of 10,360 ppb (0.31 ozs Au/ton) and 3,910 ppb (0.11 ozs Au/ton). Only six grab samples were collected because of budget restraints. Systematic chip or channel sampling of the exposed veins is recommended.

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1 INTRODUCTION:

This report deals with two claim groups, referred to as the "Topboot Lake Property" and the "Sylvanite Property" in Swayze and Denyes Townships, Ontario. These properties are held by Glen Auden Resources Limited., subject to an option agreement with Can Mac Exploration Limited. Under the terms of the agreement, Can Mac may earn a 50% equity interest in these and one additional property by making expenditures of two million dollars over a period of four years. The recent work performed on these properties is a continuation of that begun by Can Mac during the November 1987 to March 1988 period. (See report by R.E. Good, 1988.)

The properties are gold prospects and are found within the Swayze-Deloro Metavolcanic-metasedimentary belt along with numerous other prospects and several past-producing gold mines such as the Halcrow-Swayze Mine, the Jerome Mine and the Joburke Mine. (P.C. Thurston, et al, 1977; Figure 1). Previous chip sampling by Can Mac in the Derraugh Trench on the Topboot Lake Property obtained gold values of up to 52,460 ppb Au (1.53 oz. Au/ton), while in the "1+25W" Trench anomalous Au content in the analyses of chip samples reached 1,130 ppb. (.033 oz Au), (Goad, 1988). Abernathy (1987) as quoted by Goad (1988), collected grab samples from old trenches on the Sylvanite Property which resulted in gold analyses of up to 0.321 oz Au.

Because of the favorable location of the claim groups, as well as the promising results of Can Mac's winter exploration program

on the Topboot Lake Property, additional geological exploration, stripping, trenching and a 1,204.5 meter (3952') diamond drill program was conducted on the Topboot claims. Also, an access corridor to the Sylvanite Prospect was located to bring in equipment for stripping and trenching, geological mapping and sampling.

This report summarizes the exploration work done on the two properties and has been prepared at the request of principals of Can Mac Exploration Limited.

Geologist Frank H. Towes worked on the projects during the late spring summer and early fall of 1988. He is the principal author of this report and did most of geological mapping and data documentation.

Geologist Robin E. Goad initiated a portion of the Topboot exploration program and briefly examined the Sylvanite property. He also provided supplementary data and organized portions of the final draft of this report.

2 PROPERTIES, LOCATION AND ACCESS:

The two claim groups mentioned above are located in Swayze and Denyes Townships in the Porcupine Mining Division.

The "Topboot Lake Property" consists of 42 contiguous claims which straddle the northern part of the common boundary between Swayze and Denyes Townships. (Figure 2.) Access is via a winter road which extends west from the gravel based, main timber haulage road maintained by the Foleyet Timber Company Limited.

The main haulage road runs south from Highway 101, at a point 1km west of the Mooseland Resort between Timmins and Foleyet. The access road intersects the main haulage road at a point approximately 60km south of Highway 101.

The "Sylvanite Property" is comprised of 76 contiguous unpatented mining claims in the northwest part of Denyes Townships (Figure 3) and the property can now be accessed by a branch from the winter road to Topboot.

Both properties may also be reached by float of ski-equipped fixed wing aircraft, by helicopter; or by all-terrain vehicle when winter ground-frost has dissipated.

3 GEOLOGICAL SETTING:

The Swayze-Deloro Metavolcanic-Metasedimentary belt is E.W. trending, somewhat arccuate in shape, narrowing to the northeast and southeast (Figure 1.). This belt is part of the Superior Structural Province of the Canadian Precambrian Shield. The metavolcanic-metasedimentary rocks are Early Precambrian in age and are bounded by granitic rocks. The belt is terminated by the Kapuskasing Structural Zone to the northeast. (Thurston, et al, 1977).

Mafic to intermediate metavolcanics predominate, with areas of felsic to intermediate metavolcanics and metasediments occupying the central part of the belt. Parts of one of these felsic-intermediate areas occurs in Swayze and Denyes Townships, on ground underlying the claim groups optioned by Can Mac. Intruding the metavolcanics are bodies of feldspar +/- quartz porphyry. Younger lamprophyre dykes are also present. (Thurston et al, 1977).

Metamorphism has produced mineral assemblages ranging from greenshist to amphibolite facies, with the latter occurring mainly toward the margins of the belt. (Thurston et al, 1977).

Foliations in the metavolcanic-metasedimentary rocks are generally parallel to sub-parallel to bedding and flow banding. The plunge of lineations varies from steep to more shallow (20 degrees - 60 degrees) going from the eastern to the western parts of the Swayze-Delor belt. Joints trend from northeast to northwest and prominent faults are oriented north northwest to

north, along with northeasterly trends. Shear zones with an east-west orientation are also present. (Thurston et al, 1977).

Folding is characterized by isoclinal folding about east to northeast axes, which is more or less parallel to the stratigraphic trends. These fold axes have been subsequently warped by cross-folding. (Thurston et al, 1977).

Prospecting for gold deposits has been going on in the area since the 1930's, resulting in the development and production of a number of small gold mines.

4 SWAZEY AND DENYES TOWNSHIP EXPLORATION HISTORY AND PREVIOUS WORK:

Reference

"Report on stripping and trenching on the Saxton Lake, Topboot Lake and Sylvanite prospects, Swayze and Denyes Townships, Porcupine Mining District, Ontario, Nov., 1987 through Mar., 1988.", for Can Mac Exploration Limited., by Robin E. Goad, 1988.

5 RECENT WORK:

COMPANY:

CAN MAC EXPLORATION LTD
John C. Hildebrandt, Vice President
P.O. Box 1118 (1 Hildebrandt Street)
Barry's Bay, Ontario. K0J 1B0.

PROPERTIES:

1) TOPBOOT LAKE PROJECT (42 CLAIMS)
Swayze and Denyes Townships, ontario.

2) SYLVANITE PROJECT (76 CLAIMS)
Denyes Township, ontario.

GEOLOGICAL CONSULTANTS:

Geolocical Engineering Services
North Bay, ontario

5.1 PERSONNEL:

Frank P. Tagliamonte, P.Eng.
Frank H. Towes, B.Sc., F.G.A.C.
Robin E. Goad, M.Sc., F.G.A.C.

SUPERVISION AND MANAGEMENT

Noron Exploration Services
P.O. Box 1211
Barry's Bay, Ontario. K0J 1B0
James Hildebrandt
Herbert Hosick
Brian Both
Harild Booth
Eugene Hollett
Leonard Hollett

DIAMOND DRILLING CONTRACTOR

Les Entreprises Jacques Rousseau Forage a Diamant Inc.
Rouyn-Noranda, Quebec

PERSONNEL

4 diamond drillers

EQUIPMENT

Longyear 38 Diamond Drill

STRIPPING AND TRENCHING

Camroy Construction Limited
Hagar, Ontario

PERSONNEL

2 heavy equipment operators and 1 laborer

EQUIPMENT

Catapillar D-7 Bulldozer
A link belt tracked back hoe
A bombardier J-7, eight wheel
All-terrain argo

5.2 LINECUTTING:

An approximate 25 line kilometer metric grid was cut on the Topboot Lake claims during May and June, 1988 by Noron Exploration Services. The grid was cut as an extension of the previously existing metric grid to cover the 14 claims at the northeast corner of the property. The grid was cut by extending the 9+00 N tie line northeast and cutting new 100 metre interval lines from the tie line at 330 degrees. The new grid was cut using figure 4 as a guide, although additional tie lines were also cut, they are not shown in this diagram.

5.3 STRIPPING AND TRENCHING:

Topboot Lake:

Additional stripping and trenching was carried out on the Topboot Lake claims in June, July and October 1988 by Camroy Construction Limited. Areas selected for trenching were first cleared of vegetation and topsoil using a bulldozer. This stripping was then followed by trenching to bedrock utilizing a backhoe. After trenching, the bedrock was cleaned hydraulically and blasted by personnel from Noron Exploration Services. The exposed bedrock was mapped and sampled by geologists from Geological Engineering Services.

Stripping and trenching was first conducted in the vicinity of the Derraugh Trench where the earlier program had exposed the auriferous Derraugh Vein System. The Derraugh Trench was widened between DT 1+00 m N and DT 2+00 m N in order to trace the north extension of the Main Derraugh Vein (Figure 5A). The vein was not sufficiently well exposed by the earlier trenching program. The Derraugh Trench was also widened to the south between DT 0+00 and DT 1+00 m S in order to trace the south extension of the Derraugh Vein System. Two additional smaller trenches were dug in October, 1988 at the request of John Hildebrandt in order to test the projection of some auriferous splay veins en-echelon to the Main Derraugh Vein. One of these trenches (Trench JH) was dug in a northwesterly direction for 75 metres from DT 0+00 (Figure 5B). The other trench (DT #2) Trench) was dug in a northerly direction for 40 metres from 10 meters east of DT 0+90 m N (Figure 5B). Another trench (Trench 0+90o W) was dug for 200

metres south from the east side of the South Derraugh Cross Trench. This trench was excavated in June 1988, but was not cleaned or mapped because of the lack of any significant mineralization.

Additional trenching was also carried out in the vicinity of the #2 Vein System (Trench 1+25 W) in order to trace the veins along strike to the north and south (Figure 6). The trench was also widened in order to expose a number of previously undiscovered parallel veins. A new trench (Cross Trench 1+93 S) was also excavated for 75 meters in an easterly direction northeast of 1+93 m S on Trench 1+25 W (Figure 6).

Two small 50 meter cross trenches were also dug perpendicular to Trench 3+75 W from the previous trenching program (Figure 5A). The trenches are referred to as the #3 Vein North and South Cross Trenches and were dug in an attempt to trace a possible extension of the #3 vein.

The dimensions of these trenches are as follows:

TABLE 1

TRENCH	LENGTH	WIDTH	AREA
North Derraugh ext.	100 m	20 m (average)	2,000 sq m
South Derraugh ext.	100 m	10 m (average)	1,000 sq m
Trench JH	75 m	12 m (average)	900 sq m
DT #2 Trench	50 m	15 m (average)	750 sq m
Tremch 1+25 W ext.	45 m	10 m (average)	450 sq m
Trench 1+93 S	75 m	10 m (average)	750 sq m
#3 Vein North Cross	100 m	20 m (average)	2,000 sq m

Trench			
#3 Vein South Cross	140 m	20 m (average)	2,800 sq m
Trench			
Trench 0+90	200 m	20 m (average)	4,000 sq m

SYLVANITE (see figure 7)

Trenching on the Sylvanite Property was restricted to parts of claims 931817, 931816, 1026280, and was carried out more or less following a plan devised by R.E. Goad. Most of the trenched areas lie in the southeast part of claim number 931817 where earlier work by Erie Canadian Mines Limited and Sylvanite Gold Mine Limited included some trenching (Goad 1988). Four cross-trenches of varying lengths were excavated on claims 931817 and 931816. These cross-trenches were oriented parallel to previously cut and picketed grid lines (Another, older set of picket lines are also present which run at 030 degrees). Trench "1+255" trends perpendicular to and between two of the cross-trenches. It lengthens and widens the more limited exposures in a series of older pits and trenches, most of which had not reached bedrock. The purpose of the recent trenches was to expose porphyry intrusions found within metavolcanic rocks, along with the associated, gold-bearing quartz veins.

North of the "1+255" Trench, an area 40-60 meters long was stripped but not excavated to bedrock along its entire length due to budget limitations.

In addition, a short cross-trench was excavated near the north boundary of claim 1026280 in order to investigate the cause of an

airborne geophysical anomaly at this location (R.E. Goad, telephone communication, August 24, 1988).

Not all trenches were cleaned hydraulically due to equipment malfunctions, logistical and personnel problems.

Approximate dimensions of the trenches (clearing) follow:

TABLE 2

CLAIM #	TRENCH	LENGTH (m)	WIDTH (m)	AREA (m2)
931816	3+90 W X-Tr	40	17	680
931817	4+33 W X-Tr	235	24	5,640
931817	5+60 W X-Tr	155	15	2,325
931817	1+25 S	105	25	2,625
931817	Road Trench (now buried)	20	10	200
931817	4+90 W X-Tr	60	15	900
1026280	4+30 W X-Tr	35	10	350

5.4 GEOLOGICAL MAPPING:

Detailed geological mapping was done on scales of 1:500 and 1:1000 on the Topboot Lake and Sylvanite properties using a slightly revised rock nomenclature as that devised by Goad (1988) and is included in the appendix.

Topboot Lake:

Most of the Derraugh Trench (where the Derraugh Vein is exposed), including the recently excavated north and south extensions were mapped by Robin Goad at a scale of 1:500 (Figure 5A). The #3 Vein North and South Cross Trenches are included on this map (inset) and were also mapped at a scale of 1:500. The JH and DT #2 Trenches were mapped by Frank Toews at a scale of 1:1,000 (Figure 5B). The area of the 1+25 W Trench where the #2 Vein is exposed, and the 1+93 S Trench were mapped by Frank Toews

at a scale of 1:500 (Figure 6).

Sylvanite:

The trenching on the Sylvanite property was geologically mapped by Frank Toews at a scale of 1:500 (Figure 7). Some grid lines in the vicinity of the trenches were also mapped prior to and concurrent with the trenching. The areas mapped along the grid lines are predominantly overlain by overburden up to 4 meters deep. An old diamond drill hole casing was also observed near line 5+00 W on the south side of Trench 1+25 S (Figure 7).

5.5 REVIEW OF GEOLOGICAL MAPPING:

Topboot Lake:

The geology of this report is an extension of the stripping and trenching program conducted by Can Mac during the winter of 1987. The earlier stripping was supervised by Goad (1988) who differed in his interpretation of the dominant host rock types with Abernathy (1987) who conducted most of the earlier work for Glen Auden Resources Limited. Goad (1988) interpreted the dominant host rock of the Derraugh Vein and other areas of the property as a heterogeneously deformed felsic to intermediate porphyritic intrusion. Abernathy (1987) interpreted many of these rocks as lapilli and crystal tuffs. This recent work follows the interpretation of Goad (1988). However, it should be noted that although the host rock near the Derraugh Vein System is clearly an intrusion, rocks observed in drill core near the #2 Vein System and in outcrops further north, contain altered plagioclase phenocrysts and fragments or clasts of intensely

altered rocks. It is not clear whether these rocks are heterogeneously deformed and altered porphyritic intrusions or related deformed and altered tuffaceous rocks in the transition from intrusive to extrusive depositional environments.

Derraugh Trench:

The Derraugh Trench is predominantly underlain by a greenish gray, fine-grained, massive rock with a homogeneous distribution of 20 to 30 %, 1 to 3 mm, subhedral to euhedral plagioclase phenocrysts. The rock is well jointed, massive and contains up to 2 %, 0.5 to 1 meter, irregular, chloritic xenoliths. The xenoliths typically have sharp to partly assimilated reaction rims distal to the Derraugh Vein. The rims are commonly silicified and bleached in areas more proximal to the vein. The porphyritic rock becomes increasingly bleached, altered and foliated near the Derraugh vein and the northeasterly-trending lineaments or swampy depressions recognized in previous mapping by Abernathy (1987), and Goad (1988). Both Abernathy and Goad interpret these depressions as faults. A progressive alteration is recognized in these areas resulting in the replacement of feldspar phenocrysts by carbonate and sericite. Progressive deformation also gives the rocks a laminar fabric. This fabric is also apparent in other areas of localized deformation and shearing resulting in a foliation trending between 050 and 070 degrees, and dipping north at 45 to 85 degrees.

The porphyritic intrusion is locally cut by a diorite intrusion up to 10 meters wide. This diorite is composed of 15 to 20%

hornblende, 10 to 15 % quartz, and 65 to 75 % plagioclase. In altered localities the hornblende is commonly pseudomorphed by chlorite, the plagioclase is sericitic and there is abundant interstitial carbonate. The diorite has sharp to gradational contacts with the porphyritic intrusion and is thus considered to be a late phase of the same intrusive body. Abernathy (1987) recognizes an association between the diorite and the aforementioned linear depressions.

The porphyritic intrusion is also cut by an irregular lamprophyre dyke up to 2 meters wide. The lamprophyre is composed of 15 %, 1 to 3 mm hornblende and plagioclase phenocrysts in a fine-grained, dark brown groundmass. The lamprophyre has a northerly zig-zag orientation and is spatially associated with the Derraugh Vein. The lamprophyre is locally cut by the Derraugh Vein and contains fine quartz-carbonate veinlets. In these localities the dyke has an alteration assemblage including chlorite, carbonate and sericite. The dyke also locally cross-cuts the Derraugh Vein suggesting that they are coeval.

The Derraugh Vein System is exposed in the Derraugh Trench over a continuous strike length of 265 meters. The Derraugh Vein System includes the Main Derraugh Vein and related smaller veins and quartz +/- carbonate stockworks. The Main Derraugh Vein is 1 cm to 1.4 meters wide, strikes at North 160 degrees East, and dips 72 to 82 degrees to the east. Local variations in the strike direction are apparently influenced by the northeasterly

trending shearing. The vein locally bifurcates or becomes stockwork-like and commonly has related, en-echelon splay veins radiating from its margins. The Derraugh veins are composed of milky-white quartz and minor milky-white or yellow-brown carbonate and sericitic fractures. The veins contain nil to 5 % sulphides but average less than 1 %. Sulphides are predominantly pyrite with local chalcopyrite and rare arsenopyrite. The veins have sharp external contacts but are commonly cut by multiple generations of subsequent veins typically within the outer boundaries of the larger veins. In some localities the veins have silica flood zone appearance between sharp linear contacts.

The alteration marginal to the Derraugh Vein System has been traced up to > 300 meters along strike and between 5 and 50 meters wide. The alteration has an outer assemblage of green coloured, well foliated chlorite-carbonate-sericite schist with quartz-carbonate veinlets and minor pyrite. Plagioclase phenocrysts are apparent in less altered areas with gradational contacts defined by the intensity of alteration. The alteration near the veins is dominated by a beige to pinkish-beige, fine-grained to cryptocrystalline assemblage of quartz, carbonate, sericite +/- alkali feldspar, +/- pyrite (<1 to 5 %) and lesser chalcopyrite. This siliceous alteration is cut by 1 to 50 % quartz +/- carbonate veins, veinlets and stockworths near the Main Derraugh Vein. The alteration typically bleaches, recrystallizes and metasomatizes the precursor beyond recognition. However, local areas are not feldspar destructive

as some areas contain pristine, euhedral plagioclase phenocrysts in a siliceous and bleached altered groundmass.

Only 6 samples were collected by the writers in areas not sampled by the previous stripping program. Only 2 of these contained anomalous gold concentrations up to 190 ppb gold. However, grab samples were collected by John Hildebrandt of Can Mac Exploration Ltd in areas where Goad (1988) previously obtained up to 52,460 ppb gold (1.53 oz Au) in the country rock and 16,800 ppb gold (.49 oz Au) in the vein in 1 meter chip samples. Hildebrandt's grab samples detected up to 212,470 ppb gold (6.20 oz Au) and 6,720 ppm copper (.67% Cu). All of the significant gold assays were from samples containing chalcopyrite and the strong correlation between these elements in many samples suggests that chalcopyrite is a strong indicator of gold mineralization. Chalcopyrite is only common for 25 metres along strike in the Derraugh Vein and 15 metres along strike in the #2 Vein.

<u>#3 Vein North and South Cross Trenches</u>:

Detailed geological mapping in the vicinity of the #3 Vein failed to detect any additional mineralization. The #3 Vein North Cross Trench is underlain by weakly chloritic and sericitic feldspar porphyry. A 15 meter long area is sheared at approximately north 70 degrees east, dipping vertically. The shears are intensely chloritic and contain up to 20% continuous to discontinuous pyrite over a 5 meter width. These pyritic shears could not be extended but adequately explain the I.P.

geophysical anomaly detected in this area by Glen Auden Resources Limited. A two meter chip sample across these shears (375 N) detected 570 ppb gold. (.016 oz Au).

The #3 Vein South Cross Trench is underlain by a diorite intrusion composed of plagioclase, quartz and chloritic hornblende. The diorite is cut by a 1 meter lamprophyre dyke with an irregular, northeasterly strike. The stockwork quartz veinlets discovered in the previous stripping program could not be extended more than 5 meters along strike. A 1 meter chip sample across these veinlets (375 S) detected no gold mineralization.

"D.T. #2" Trench

The D.T. #2 vein intersected near surface in Diamond Drill Hole TL 88-6 is now exposed in the "D.T. #2" Trench and the vein can be traced over a strike length of about 45 meters in the trench. The vein appears to be quite narrow on surface (unlike the drill-core width) ranging from a few centimeters to about 30 centimeters maximum. The vein appears to be semi-continuous, and at one point is offset (left-laterally) by 1-2 meters along steeply north-dipping fracture-shearing trending at 060-075 degrees.

The vein dips vertically to about 80 degrees W and strikes at approximately 020-025 degrees north of the drill hole, swinging to 220 degrees-225 degrees/70 degrees S to the south of the drill hole. The vein appears to project toward another vein, up to 15 cm wide, in the "Derraugh" Trench. This

latter vein strikes at 230 degrees-260 degrees, dips at 80 degrees S, and splays into several veinlets 1-2 centimeters wide trending between 200 degrees-220 degrees towards the east contact of the Main Derraugh Vein.

The "D.T. #2" vein is comprised of quartz-carbonate (+/- chlorite +/- epidote +/- pyrite) with silicification of wall-rocks locally up to 30 centimeters wide. The host rocks are light to medium greenish, fine-grained, sericitic-chloritic with areas of visible feldspar phenocrysts (porphyry). Limonitic weathering surfaces indicate carbonatization of the porphyry. Less than 1% disseminated pyrite is visible. Also present are locally up to 5% stockwork, quartz-carbonate veinlets 0.1-2 centimeters wide.

ii) "J.H." Trench

Rocks encountered in the "J.H." Trench were medium to darker greenish-grey, fine-grained, chloritic - sericitic and locally porphyritic (feldspar). Areas of light greenish, patchy alteration (silicification?) are also present. Disseminated Py can be observed throughout much of the trench, in amounts varying from less than 1% to locally 5%. Minor chalcopyrite could be seen and minor amounts of narrow quartz-carbonate veinlets are also present (No significant veining could be seen). Limonitic weathering surfaces indicate carbonatization of the host rocks.

South Cross-Trench:

The widening of the western end of the South Cross-Trench exposed rocks similar to those that were seen in the earlier

excavation, but only disseminated Py was observed in the new exposure, as opposed to both pyrite and scattered occurrences of chalcopyrite which were previously encountered.

West of the #2 Vein and the "1+25 W" Trench, an attempt was made to expose possible, additional veins in the "1+93 S" Cross-Trench. (See Figure 5B.)

"1+93 S" Cross-Trench:

The "1+93 S" Cross-Trench was also not washed. Only minor quartz-carbonate veinlets could be found in the fine-grained greenish-grey often limonitic weathering, carbonatized, chloritic to sericitic, foliated to schistose rocks which were exposed in this trench. Locally, plagioclase phenocrysts, up to several millimeters in size, were observed in the more massive parts. Minor disseminated pyrite is also present.

"1+25 W" Trench:

In the "1+25 W" Trench, the #2 Vein varies from approximately 0.5 meters to 3 meters in width, and has a strike length of approximately 80 meters on surface, open to the north in swamp. It trends parallel to the adjacent, irregular steeply-dipping, carbonatized lamprophyre dykes. These dykes appear to intrude the #2 vein in part, but the dykes are also brecciated by the vein. In addition, subsidiary quartz-carbonate veining cross-cuts the lamprophyre, as well as the main vein, indicating at least two stages of quartz-carbonate introduction.

The host rocks are variable: schistose to foliated to more massive, medium to light greenish-grey, fine-grained, sericitic

and chloritic. The porphyritic character is indicated by local areas containing 1-2 millimeter-sized, faint to distinct, sericitic plagioclase phenocrysts. The most strongly foliated to schistose rocks are located in the northern part of the trench, near the swamp, where schistose, narrow lamprophyre dykes are also present, oriented parallel to the foliation, which strikes at 065-080 degrees and dips at 55-65 degrees N. (The swamp may conceal an easterly to northeasterly trending fault zone). Limonitic weathering surfaces indicate the presence of carbonatized areas. Beige to slightly pinkish siliceous-carbonate alteration patches and haloes are also observed in close proximity to the veining. Disseminated pyrite is also present near the veining. The foliation in the host rocks is cross-cut by the main #2 vein, although some shearing is present along contacts. Locally, adjacent to the main vein, up to 25% contorted, subsidiary veins appear to turn into the foliation planes, but in other areas the subsidiary veins form stockworks which cross-cut the foliated host rocks. The subsidiary veins range from less than 1 centimetre to 15 centimeters in width.

The main #2 vein is comprised of milky quartz with limonitic weathering, beige carbonate patches and veinlets: Remnant patches and fragments of wall rock altered to sericitic-chlorite and some pinkish to beige silicification-carbonatization are also found in the vein. Traces to locally 1% disseminated sulfides (pyrite +/- chalcopyrite +/- malachite) are present. The main vein is irregular, bulging and pinching with strikes varying from

315 to about 360 degrees, and dips ranging from steep (east and west) to vertical on surface. (See also "review of Diamond Drilling.") The subsidiary veining consists of milky quartz +/- carbonate +/- chlorite +/- pyrite +/- chalcopyrite.

SYLVANITE:

Geological mapping was confined to the trenches and nearby cut-lines (see figure 7). Not all trenching was washed due to equipment malfunctions and personnel problems.

Bedrock exposed in the trenches and cut-lines is comprised of intermediate (-mafic) metavolcanics, including some pillow lavas and fragmental rocks, some felsic metavolcanics, intermediate-felsic(?) feldspar porphyry intrusions and minor younger, narrow lamprophyre dykes. Quartz-carbonate (+/-sulfide) veining apears to be injected into all lithologies except for the lamprophyre. The amount of veining is variable and often associated with the porphyry. The most impressive veining occurs in the "1+25 S" Trench.

The predominant rocks exposed are intermediate, fine-grained, dark to medium greenish-grey metavolcanics. These rocks are generally foliated to schistose, with foliations striking at 080-120 degrees and mainly dipping from near-vertical to 60 degrees N, often parallel to sub-parallel to contacts. Locally, thinnly-bedded units can be observed with beds 1-4cm thick. The intermediate (-mafic) rocks are chloritic +/- sericite and often carbonatized as is indicated by limonitic weathering surfaces. Traces to locally 1% disseminated pyrite can be seen. Pillow

lavas are located in the "4+33 W" Cross-Trench at approximately 2+10 m S, in a 6-meter wide zone. The pillows are up to 1.5 meters long and 0.6 meters wide, the long axes trending at about east-southeast. The pillows have chloritic selvages and 2-3% quartz-carbonate veining occupies the areas interstitial to the pillows. Near line 4 W/3+00 m S, small outcrops of chloritized, carbonatized intermediate metavolcanics contain some fragmental rocks. The fragments are felsic, up to 18 centimeters long, set in a foliated chloritic matrix. The fragments are elongate in the plane of the foliation which trends at 095-105 degrees/80 N at this locality.

Felsic-intermediate metavolcanics occur at the north end of the "4+33 W" Cross-trench. These rocks are strongly foliated to schistose, light greenish, fine-grained, sericitic-chloritic with some yellowish-green epidote alteration. The foliation is steeply dipping, locally deformed and strikes at 120 degrees. Swamp occurs at the north end of the trench. A zone of quartz-carbonate veining cross-cuts the foliation and is lost in the swamp. The vein zone, which is about 15 meters long by 15 centimeters to 1 meter wide, consists of quartz-carbonate veinlets approximately 1-15 centimeters wide, locally with minor associated disseminated pyrite +/- chalcopyrite.

The zone strikes at 075 degrees in the north changing to approximately 035 degrees in the southern part where it appears to dissipate as a few 0.5-2 centimeter wide veinlets. A grab sample ("D"=Table 3) from this zone contained 10 ppb gold (.003 oz Au).

The other occurrence of felsic-intermediate volcanics is in the isolated, extreme southern section, in the "4+30 W" cross-trench on claim 1026280. Here, a short trench* was excavated in order to investigate the cause of an airborne V.L.F. geophysical anomaly (R.E. Goad, telephone communication, August 24, 1988). The felsic matavolcanics are well-foliated to schistose (105-115 degrees/90-55N), locally thinly bedded (1-4cm, thick at ~ 125 degrees/steep), light to medium grey to beige, fine-grained to aphanitic, sericitic-chloritic, partly siliceous and weakly carbonatized (limonitic | weathering). The rocks are locally cherty (possibly silicified?) Minor amounts of 1-2 millimeter wide quartz-carbonate veinlets are locally present. The zone of felsic-intermediate volcanics is approximately 6 meters wide, enclosed by altered feldspar (+ quartz) porphyry intrusions on the north and south. The northern contact with the porphyry is at about 130 degrees/82 S. Here, the felsic metavolcanics are cherty (silicified?) with anastomosing 1 millimeter wide quartz carbonate (limonitic) veinlets and the porphyry is limonitic weathering, locally beige-colored, silicified and carbonatized, with stockwork quartz-carbonate veinlets up to 5 millimeters wide some of which trend at 010 degrees?. The northern porphyry is light greenish-grey more massive to foliated at 105 degrees/50 N. The southern contact with porphyry trends about 105 degrees/90+/- parallel to the foliation in a sericite schist with limonitic weathering.

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* This trench was not lenghtened due to curtailment of the trenching program.

The southern porphyry is foliated to more massive, light grey to somewhat beige to greenish grey and parts are a brownish, medium grey color. Anhedral to sub-hedral, feldspar phenocrysts up to 5mm in size, can be observed in the fine-grained matrix. Also, some glassy quartz phenocrysts up to 3 millimeters in size are visible. The matrix also contains up to 1% finer grained, disseminated pyrite which contributes to the limonitic weathering surface along with weak carbonatization (The pyrite may be a contributing factor to the geophysical anomaly.) Minor amounts of 1-3 millimeter wide quartz-carbonate veinlets are present. The southern contact of the porphyry was not exposed in the trench (where overburden is up to 3 meters deep) so the width of the porphyry may exceed 6 meters.

A narrow, dark grey, magnetic, fine grained lamprophyre dyke cuts the southern porphyry body only. The lamprophyre is oriented at 022 degrees/80 E, sub-perpendicular to the volcanic-porphyry contact. The dyke exhibits a chilled margin on its eastern contact; the western contact is not exposed, but the lamprophyre is not much more than 10 centimeters wide. Minor carbonate veinlets cross-cut the contact. Biotite and amphibole phenocrysts up to 2 millimeters in size are set in fine-grained carbonatized matrix.

Other feldspar porphyry intrusions are found in the trenches in the area between 0+20M S and 1+90 M S relative to the baseline. The intrusions can pinch and widen, range in size from a few centimeters to several meters wide, and one is interpreted to

have width of about 60 meters. This large porphyry body, which is exposed in the 1+25 S Trench and in two old cross-trenches, is interpreted to be the locus for many of the porphyry dykes observed in the "4+33 W" and "5+60 W" cross-trenches.

The porphyries are limonitic weathering (carbonatized), light to medium grey to greenish-grey, more massive to foliated and contain up to 30%, anhedral to subhedral to rounded, white to slightly pinkish and greenish plagioclase phenocrysts 2-5 millimeters in size. The phenocrysts are set in fine-grained matrix containing some sericite and/or chlorite. Traces to locally 2% pyrite, in the porphyry. Observed porphyry contacts are often parallel to sub-parallel to foliations in the metavolcanics. Apophyses of porphyry both parallel and cross-cut foliation-contact trends. In the larger porphyry body in the "1+25 S" Cross-Trench, bands of metavolcanics can be observed to pinch out in the porphyry, and one porphyry - meta volcanic contact is offset (right-hand) in a step-like fashion along a prominent fracture set trending at approximately 030 degrees. A porphyry dyke near 1+05 M S in the "4+33 W" Cross-trench is offset 30cm in a left-hand sense, along a narrow, cross-cutting, northeast-trending lamprophyre dyke.

Milky Quartz-carbonate (+/-chlorite +/- pyrite +/- chalcopyrite) Veining can be observed throughout the trenches in amounts ranging from less than 1/2% to locally 40%. The veining occurs along porphyry - metavolcanic contact areas, trends parallel to foliations or can cross-cut contacts and foliations. Veins often

occur as stockworks, but may also be seen as individual or sub-parallel veins, and sometimes as narrow lenses in the foliation planes of the metavolcanics. Veins range in width from 0.1 to 10 centimeters mainly.

In the "1+25 S" Trench, which appears to be the area of principal interest with respect to veining and sulfide mineralization, there are also localized massive quartz carbonate pods up to 0.8 meters wide, quartz-carbonate breccia zones containing wall rock fragments and local areas of more intense veining. These are all focussed along parts of two ENE-trending, somewhat "en echelon," foliated, intermediate metavolcanic bands within the porphyry. This "focussed" zone, which is about 1-2 meters wide, lies approximately between line 5+15 M W/ 1+20 M S and line 4+80 M W/ 1+28 M S. This zone occurs within a broader zone of stockwork-type quartz-carbonate veining roughly ten metres wide, extending from about line .....cont'd on page 27

TABLE 3 - Sylvanite Property - An Analyses of Grab Samples

SAMPLE	LOCATION	DESCRIPTION	AU (ppb)
A	"1+25S" Trench ~5+08MW/1+24MS	Quartz-carbonate Vein	550 (.016 oz Au)
B	"1+25S" Trench ~5+14MW/1+19MS	Quartz-carbonate Breccia + Py, Cp	10,630 (.31 oz Au)
C	"1+25S" Trench ~5+13MW/1+23MS	Foliated metavolcanic + Qz-Carb veinlets + Py, Cp (?)	3,910 (.11 oz Au)
D	"5+33W"X-Trench ~4+33MW/1+23MS	Qz-carbonate vein in Felsic Volcanics (Schist) + Py (?)	10
E	"4+60W"X-Trench ~west side/0+36 4MS	Qz-carbonate vein +porphyry	NIL

F	Road Trench (Trench now covered by access road) ~5+47 MW/1+47 MS	Porphyry + Qz-Carb veinlets +/- Py	20

5+35M W to L4+65M W and occurring mainly south of the metavolcanic band in the western part and mainly north of the other metavolcanic band in the eastern area. The amount of veining in the broader zone, generally appears to diminish toward the zone margins as the stockwork type veining decreases in intensity in the porphyry. Locally, the stockwork veining amounts to about 25% decreasing to 2-5% or less in an erratic fashion; some areas having 10% veins while other parts contain practically no veins. The strike of veins appears to be easterly to south-easterly and northerly to north-easterly. Vein dips vary from 90-50 degrees where measurable, but most appear to be relatively steeply dipping.

Beige to tan, siliceous and/or carbonate alteration can be observed in the metavolcanics and the porphyry in the vicinity of veining. Fine grained disseminated pyrite +/- chalcopyrite is also more apparent where veining is more intense. Pyrite is anhedral and cubic in form and may be found in both veins and wall-rocks in amounts from less than 1/2% to locally 10%. Analyses of several grab samples from the vein zone area in the "1+25 S" Trench ranged from 230 ppb (.006 oz Au) to 10,630 ppb Au (.31 oz Au). (See Table 4.)

Other areas in the trenches where more prominent veining can

be seen are:

TABLE 4

Trench/Location w.r.t. Baseline	Veining	Host Rock	Remarks
"3+90 W" X-Tr/0+80 MS	< 25%	Porphyry	Local; near volcanics
" /1+10 MS	< 30%	Porphyry	Local(?) near volcanics
"4+33 W" X-Tr/0+20 MS	< 25%	Felsic Volcanics (Schist)	Local (?)
" /0+70 MS	< 10%	Porphyry	Local (?)
" /1+80 MS	< 3%	Porphyry	Local (?)
"4+90 W" X-Tr/1+75 MS	< 5%	Metavolcanics	Local (?) near porphyry

5.6 DIAMOND DRILLING:

Diamond drilling was carried out only on the Topboot Lake Property and consisted of two phases which occurred during the summer and the fall periods of 1988.

SUMMER PERIOD:

Dates: July 26th to August 6th, 1988.

Contractor: Les Entreprises Jacques Rousseau, Rouyn, P.Q.

Drilling Completed: 1) Derraugh Vein - 6 holes - 516.6M (1695 ft)

11) #2 Vein - 3 holes - 317.6M (1042 ft)

Total 9 holes 834.2M (2737 ft)

Core Size: BQ

Samples Split: 370

Geochemical Analyses: - element - gold and some for silver

- number - 370

- laboratory - Swastika Laboratories Limited, Swastika, Ontario

FALL PERIOD:

Dates: September and October

Contractor: Les Entreprises Jacques Rousseau, Rouyn, P.Q.

Drilling: Completed 1) Derraugh Vein - 370.3M (1215 ft)

Total: 4 holes 370.3M (1215 ft)

Core Size: BQ

Samples Split: 76

Geochemical Analyses: - element - Gold and some for silver

- number - 76

- laboratory - Swastika Laboratories Limited, Swastika, Ontario.

TABLE 5 DIAMOND DRILL HOLE SUMMARY OF THE DERRAUGH VEIN ZONE

DERRAUGH VEIN

D.D.H.#	LOCATION	DIP (degrees)	AZIMUTH (degrees)	LENGTH	VEIN INTERVAL	*AU (ppb)/M
TL88-1	6+66 MS 0+63 MW	-48	250	78.05 (256)	47.4 - 48.4 M 48.4 - 49.3 M	1580/1.0 620/0.9
TL88-2	6+66 MS 0+63 MW	-601/2	250	87.2M (286)	58.6 - 59.0 M wall rocks: 59.0 - 60.0 M	620/0.4 1250/1.0
TL88-3	6+49 MS 0+64 MW	-45	250	77.75M 255	35.06 - 36.06 M 36.06 - 37.0 M	210/1.0 1010/0.94
TL88-4	6+49 MS 0+64 MW	-60	250	99.4M (326)	52.55 - 53.4 M 53.40 - 54.0 M	NIL/0.85 370/0.6
TL88-5	6+93 MS 0+62 MW	-45	247	71.96M (236)	53.40 - 53.71 M	560/0.31
TL88-6	6+14 MS 0+50 MW	-471/2	245	102.64M (336.7)	45,91 - 46.20 M 46.20 - 46.90 M 46.90 - 47.60 M	1200/0.29 220/0.70 60/0.70
TL88-10	6+17.55 1+10 W	-45	130	76.0M (256)	67.7 - 69.15	20/1.45 M
TL88-11	6+17.55 1+10 W	-60	130	92.4M (303)	NOT INTERSECTED	
TL88-12	5+90 S 1+07.5 W	-45	104	92.7M (304)	43.0 - 44.0 M 44.0 - 45.0 M	50/1M 450/1M
TL88-12	5+90 S 1+07.5 W	-60	104	107.3M (352)	NOT INTERSECTED	

DT #2 VEIN

TL88-6	"	"	"	"	6.65 - 7.44 M 7.44 - 8.23 M	1570/0.79 20/0.79

* Where more than one analysis was done, the highest value is quoted.

5.6 REVIEW OF DIAMOND DRILLING:

Derraugh Vein Zone:

The diamond drill program which was carried out during the summer period was conceived by R.E. Goad. The purpose of the program was to test both the Main Derraugh Vein and the #2 Vein for continuity, structure and gold mineralization at moderate depths (25-70 M). The fall program was later initiated by John Hildebrandt in order to test for possible extension of the DT #2 vein.

The Main Derraugh Vein (MDV) was intersected in all six diamond drill holes of the summer program and 2 hole of the fall program. The vein was traced over a strike length of approximately 80 meters. (Table 5 and drill logs with sections in appendix) Vein widths varied from about 0.3 to 1.9 meters, as measured along the core axis. Gold values* in portions of the MDV ranged from 60 ppb Au (.002 oz Au) over 0.7 meters to 1580 ppb Au (.046 oz Au) over 1.0 meters (of core length).

The MDV generally strikes at about 350 degrees in the Derraugh Trench and dips steeply (70-80 degrees) easterly as indicated by the drill hole-trench projections. However, in diamond drill holes TL88-3 and -4 the vein steepens to a near vertical orientation.

The MDV is often observed as a zone of intense silica flooding, as well as more massive quartz, in altered host rocks which also

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* Where more than one Au analysis was available for a sample, the highest value is quoted.

occur as patches - fragments within the vein. Carbonate occurs in the vein as patches and veinlets which can be seen to cross-cut fragments of host rock. Sulfides noted consist mainly of finely disseminated pyrite, both in the vein material and the fragments. Pyrite also occurs in chloritic (+/- carbonate +/- sericite +/- epidote) fractures. Chalcopyrite mineralization appeared to be relatively scarce, occurring as fine disseminations and fine fracture fillings. Both pyrite and chalcopyrite can occur in conjunction, or separately, and both sulfides can be found as scales on some fractures.

Another vein, here named the D.T.#2 vein, was intersected near surface in diamond drill hole TL88-6. This vein, with contacts at 15-10 degrees to the core axis, had a core length of 1.58 meters. This vein, similar to the MDV, appears to be an offshoot of the MDV as indicated by subsequent trenching ("D.T.#2" Trench, Figure 5B in appendix.) However, in the trench, the vein is generally quite narrow, ranging from about 5 to 30 cm. wide. In the drill hole, the upper half of this vein intersection returned a Au value of 1570 ppb (.046 oz) over 0.79 meters. Chalcopyrite galena and pyrite was associated with this section of vein material.

The host rock for the MDV (and the D.T.#2 vein) appears to be variably altered feldspar porphyry, containing less than 30% faint to distinct, rounded to sub-angular, 1-5 mm, white to pale greenish, sericitized plagioclase phenocrysts set in a fine grained, greenish-grey, chloritic-sericitic matrix. The host

rock is also variably affected by pervasive to patchy to banded carbonatization, silicification and/or epidotization, superimposed upon the chloritic-sericitic alteration and often imparting a beige to pinkish to pale greenish coloration to the rocks. The beige to pinkish coloration (due to silicification-carbonatization) often envelopes the MDV for distances up to 15 meters, but can also occur as more isolated bands and/or patchy areas away from the vein. Remnants of the porphyritic character and the greenish-grey chloritic alteration can be found within areas of more pervasive, beige-pinkish alteration zones.

In all drill holes, quartz-carbonate +/- chlorite veining is generally present marginal to, and removed from, the MDV. This veining is often comprised of parallel to anastromising narrow veinlets less than 1 cm wide, in amounts of less than 1% to locally 35% over short intervals of less than 25 cm. (A few veins have widths of 5 to 50cm.) These veins can be observed to cross-cut the bands and patches. As well, some of the larger veins contain altered fragments indicating that the veining is a later phenomenon.

Disseminated pyrite (+/- chalcopyrite can be associated with quartz-carbonate veining, but fine grained, disseminated, cubic pyrite appears to be ubiquitous throughout the host rocks, in amounts ranging from traces to 1% to locally 5-10% over a few centimeters. Disseminated and sometimes scaly pyrite also occurs in chloritic (+/- carbonate) fractures which seem to be a later feature, since they can cross-cut the veining. Minor amounts of

chalcopyrite and/or galena chalcopyrite and/or galena can give rise to higher gold values, but this is not always the case; perhaps because of the generally minor, visible quantities of these particular sulfides. Of the samples analyzed outside the MDV zones, gold values ranged from NIL to 1250 ppb Au (.036 oz Au). The largest intersection of, more or less, continuously anomalous gold mineralization occurred immediately below the MDV in diamond drill hole TL88-6, with an average 247 ppb Au over 4.6 meters.

Also present in the host rocks are scattered, rounded to angular, dark green, chloritized fragments generally less than several centimeters in size. Disseminated pyrite and occasionally chalcopyrite, can be found within, or bordering the fragments. Narrow selvages or "reaction rims" are sometimes present. These fragments can be observed in pervasive beige-pink alteration zones, surviving remnants of the original host rocks. Here, a bright green mica (Fuchsite?) partially and sometimes totally, replaces the chloritized fragments. Flecks of the green mica are present in the alteration zones and in some of the quartz-carbonate veining.

Altered (carbonatized, chloritized, epidotized) lamprophyre dykes, which often parallel the MDV in the Derraugh Trench, are also encountered in the drill holes. In the Trench, the lamprophyre dykes along with other host rocks have been affected by the main ENE-trending foliation. The later MDV and subsidiary veins cross-cut the foliation and the dykes. Late movements

along the contacts of the MDV and along the earlier foliation planes have resulted in some deformation of the veins. This can be seen in the drill core as well.

The results of the drilling programs on the Derraugh Vein, while informative, did not generate economic gold values. The MDV and its host rocks contain anomalous quantities of gold, some associated with subsidiary veining and/or with fracture fillings. The association of chalcopyrite and galena with some of the higher gold analyses indicated that areas with greater quantities of these sulfide minerals should be targeted. Some of these areas containing more visible chalcopyrite mineralization, were grab sampled by J. Hildebrandt and yielded some relatively high gold analyses (Frank P. Tagliamonte, verbal communication).

#2 VEIN ZONE:

Three diamond drill holes were targeted on the #2 Vein Zone including T.L.-88-7 to -9 (Table 6). All three hole intersected their target along a strike length of approximately 30 metres and core lengths of between 2 and 4.1 metres. The dip of the vein was determined to be between vertical and 80 degrees to the west. the #2 Vein is observed as a series of milky-white quartz +- milky-white to yellow-brown carbonate veins, veinlets and stockworks with sericitic, chloritic, carbonatized and/or silicified fragments of the host rock. The sulphide content was typically low, averaging between traces and <1% disseminated and fracture filling pyrite. Traces and irregular specks of chalcopyrite were also locally observed. The veins locally contain a fine, thread-like film of black, earthy material which is believed to be graphite and occasional flakes of green mica.

The wall rock marginal to the veins is comprised of a beige to pinkish-beige, massive rock comprised of a fine-grained, siliceous and carbonatized material intermixed with green, foliated, chloritic, sericitic and carbonatized rock. The latter locally contains gradational zones of plagioclase phenocrysts. The gradation appears to be controlled by the intensity of alteration. This intermixing of two rock types may be the result of heterogeneous deformation or the presence of altered volcanoclastic fragments. However, it should be noted that no volcanoclastic fragements were observed in surface exposures of the rock. The altered rocks grade away from the vein.

into a greenish-grey, foliated, chloritic, sericitic, and locally carbonatized rock with plagioclase phenocrysts.

Lamprophyre dykes were also intersected near the #2 Vein. They are typically well foliated and altered to chlorite, sericite, carbonate and green mica. They are also typically cut by quartz-carbonate veins and veinlets.

Low gold values were obtained from the #2 Vein Zone similar to those in the Derraugh Vein Zone. The highest gold assay was from the #2 Vein and was 1,700 ppb (0.049 oz Au) the next best was only 260 ppb (.007 oz Au).

TABLE 6 DIAMOND DRILL HOLE SUMMARY OF THE #2 VEIN ZONE

#2 VEIN

D.D.H.#	LOCATION	DIP degrees	AZIMUTH degrees	LENGTH	VEIN INTERVAL	AU (ppb)/M
TL88-7	2+02MS 0+87MW	-47	246	94.52M (310)	62.8 - 64.2M	1700/1.4M
					118.3 - 119.8M	150/1.5M
					119.8 - 120.5M	260/0.7M
TL88-8	2+02MS 0+87MW	-60	246	135.99M (446)	120.5 - 121.9M	100/1.4M
					60.9 - 62.6M	200/0.7M
TL88-9	1+83MS 0+71.5MW	-451/2	255	117.0M (384)	62.6 - 63.9M	120/0.3M
					63.9 - 65.4M	140/1.5M

6 SUMMARY AND CONCLUSIONS:

Topboot Lake:

i) Anomalous gold mineralization occurs in association with two vein systems (the Derraugh Vein and the #2 Vein) found within altered intermediate porphyritic intrusions on the Topboot Lake Property.

ii) With the exception of the "D.T.#2" Vein, no new veins were exposed in the limited trenching done in the vicinity of the Derraugh Trench, or the "1+25 W" Trench (#2 Vein). The "D.T.#2" Vein, intersected in the summer diamond drilling program, was found to be quite narrow in the surface trenches and appears to be an offshoot of the Main Derraugh Vein.

iii) The drilling programs, to test the Main Derraugh Vein at moderate depths, intersected the vein in eight diamond drill holes. Anomalous gold values of up to 1580 ppb (0.046 oz Au) over 1.0 meter were obtained from core samples of the vein. Adjacent wall rocks contained up to 1250 ppb Au (0.036 oz Au) over a core length of 1.0 meter. The vein widths varied from about 0.3 -1.9 meters (core lengths) and dips were steep in the range of 70 degrees E to near vertical. Two environments of gold enrichment occur: one in the Main Derraugh Vein and the other in subsidiary veins and fractures. The presence of chalcopyrite (+/- galena) in association with pyrite mineralization appears to be the best indicator of gold values. However, in the samples of split drill core this

did not always hold true, perhaps because of the paucity of visible chalcopyrite mineralization.

iv) The "D.T.#2" vein is a splay vein, en-enchelon to the main Derraugh vein, but gold values only attained a maximum of 1570 ppb Au (.045 oz Au) in the split drill core samples.

v) The #2 vein contains highly anomlaous gold concentration (up to 1,700 ppb (0.049 oz Au) in analyses of split drill core.

6. SUMMARY AND CONCLUSIONS

Sylvanite Property:

i) Mapping of the trenching done on parts of the Sylvanite Property determined that auriferous quartz-carbonate veining is associated with intermediate porphyritic intrusions in mainly intermediate (-felsic) metavolcanics. (These porphyritic intrusions resembled parts of those found on the Topboot Lake Property). The veining is predominantly a stockwork-type, but some massive pods and breccia veining also occur in the "1+25 S" Trench where a larger body of feldspar porphyry contains several bands of foliated, east-southeasterly trending intermediate metavolcanics. The most promising mineralization appears to be located along, or near the contact areas of the porphyry-metavolcanics in this trench. Alteration of the host rocks includes silicification and carbonatization and disseminated pyrite +/- chalcopyrite mineralization occurs in the veining and the adjacent host rocks. Limited grab sample assays from the "1+25 S" Trench indicated the presence of up to 10,630 ppb Au (0.31 oz Au). Thorough channel sampling appears to be required to evaluate the exposures of veining and mineralization in the trenches.

ii) Limited trenching ("4+30 W" Cross-trench) investigated an airborne geophysical anomaly located approximately 300 meters south of the baseline. Disseminated pyrite mineralization was found in altered porphyry dykes, in

foliated to schistose, felsic-intermediate metavolcanics, at about 335 meters south of the baseline. Minor quartz-carbonate veinlets were also noted. Perhaps additional trenching or ground geophysics will reveal the precise location of the anomaly and its cause. Overburden was up to 3 meters deep in the trench.

iii) Following the results of channel sampling in existing trenches, reconnaissance of the surrounding areas may reveal the presence of additional porphyry intrusions and associated auriferous quartz-carbonate vein systems. Overburden depths may hamper this investigation.

7 RECOMMENDATIONS:

Topboot Lake:

1) The principle targets of exploration on the Topboot Lake claims were the Derraugh and #2 Veins. These veins are interesting in their size, alteration, deformation and gold concentrations. Significant concentrations of gold occur over narrow widths and short strike lengths in the Derraugh vein as observed in surface chip samples. Anomalous gold concentrations are similarly present in the #2 vein in surface chip samples and in both the Derraugh and #2 veins in diamond drill core samples. The Derraugh Vein remains not completely sampled along the 15 meter interval between already chip sampled areas across the zone. In addition, the JH and DT #2 Trenches were not sampled. The completion of this sampling is considered a very low priority but should be done if additional grass roots exploration is to be carried out on other parts of the property.

2) The Topboot Lake property is situated in the Swayze-Deloro Belt which is part of the economically important Abitibi Greenstone Belt. The claims are underlain by rocks with deformation and alteration assemblages considered a favorable host for gold mineralization. Highly anomalous gold concentrations are known to occur in these rocks on the claims. The Topboot Lake property has some potentially interesting areas which have not been sufficiently explored. These include the claims at the northeast corner of the property and some of the linear depressions near the known veins. A soil geochemical

survey and geological mapping program is recommended to explore these areas.

Sylvanite:

1) Future work to be done on this property, will require reliable overland transportation facilties and equipment. A serviceable camp should also be erected at the Sylvanite Prospect if any prolonged exploration activity is to be done.

2) Channel or chip sampling of all of the existing trenches is recommended before proceeding with any further work in the immediate area. Perhaps the use of gas pluggers would suffice to carry out a preliminary sampling program eliminating the need for heavy equipment transport.

Respectfully submitted,

Frank H. Toews

Frank H. Toews, B.Sc.

January 1989.

GEOLOGICAL ENGINEERING SERVICES

North Bay

O n t a r i o

FIGURE 1 SWAYZE AREA LOCATION MAP
AND REGIONAL GEOLOGY

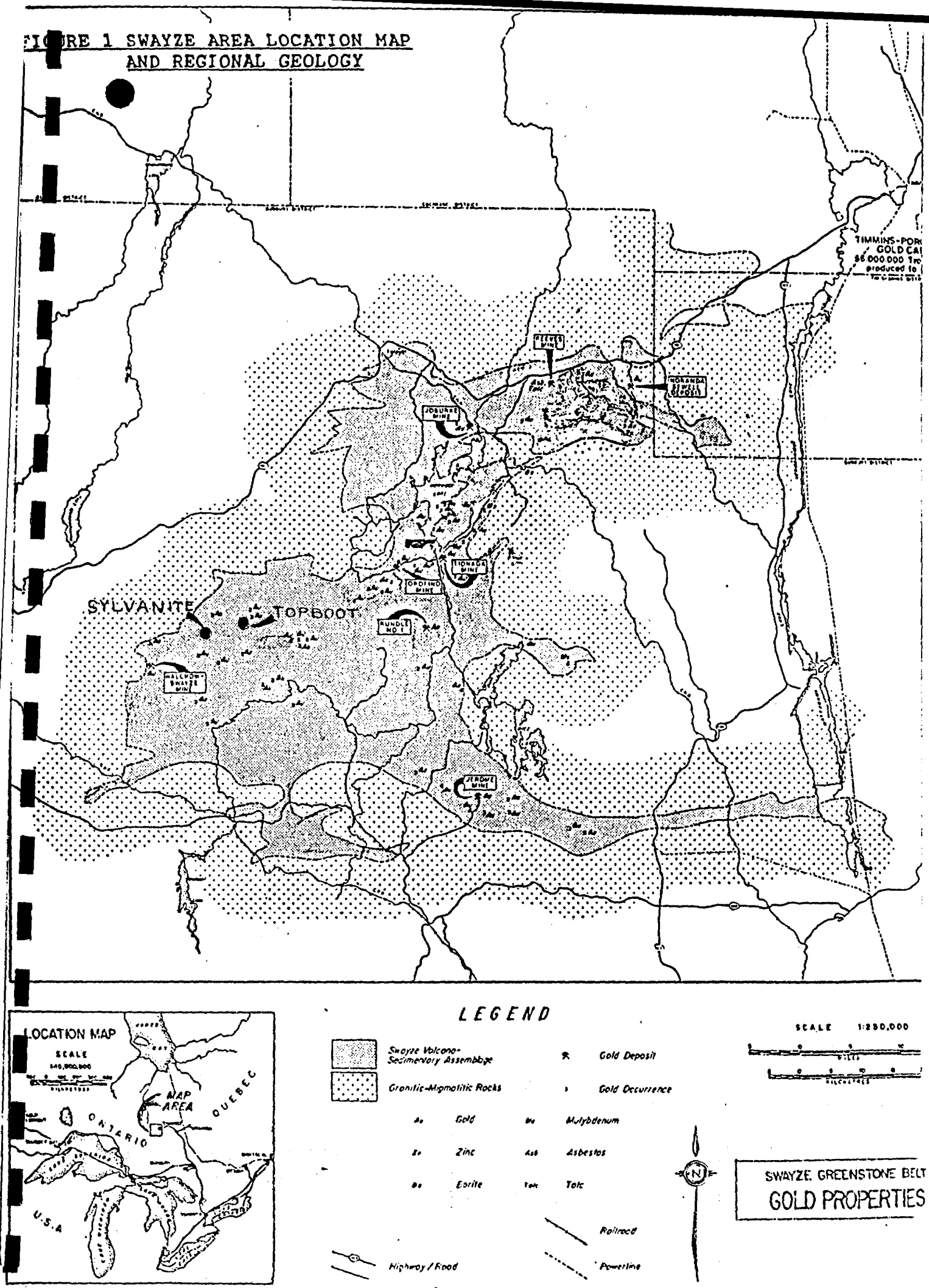


Figure 1

FIGURE 2 TOPBOOT LAKE CLAIM GROUP

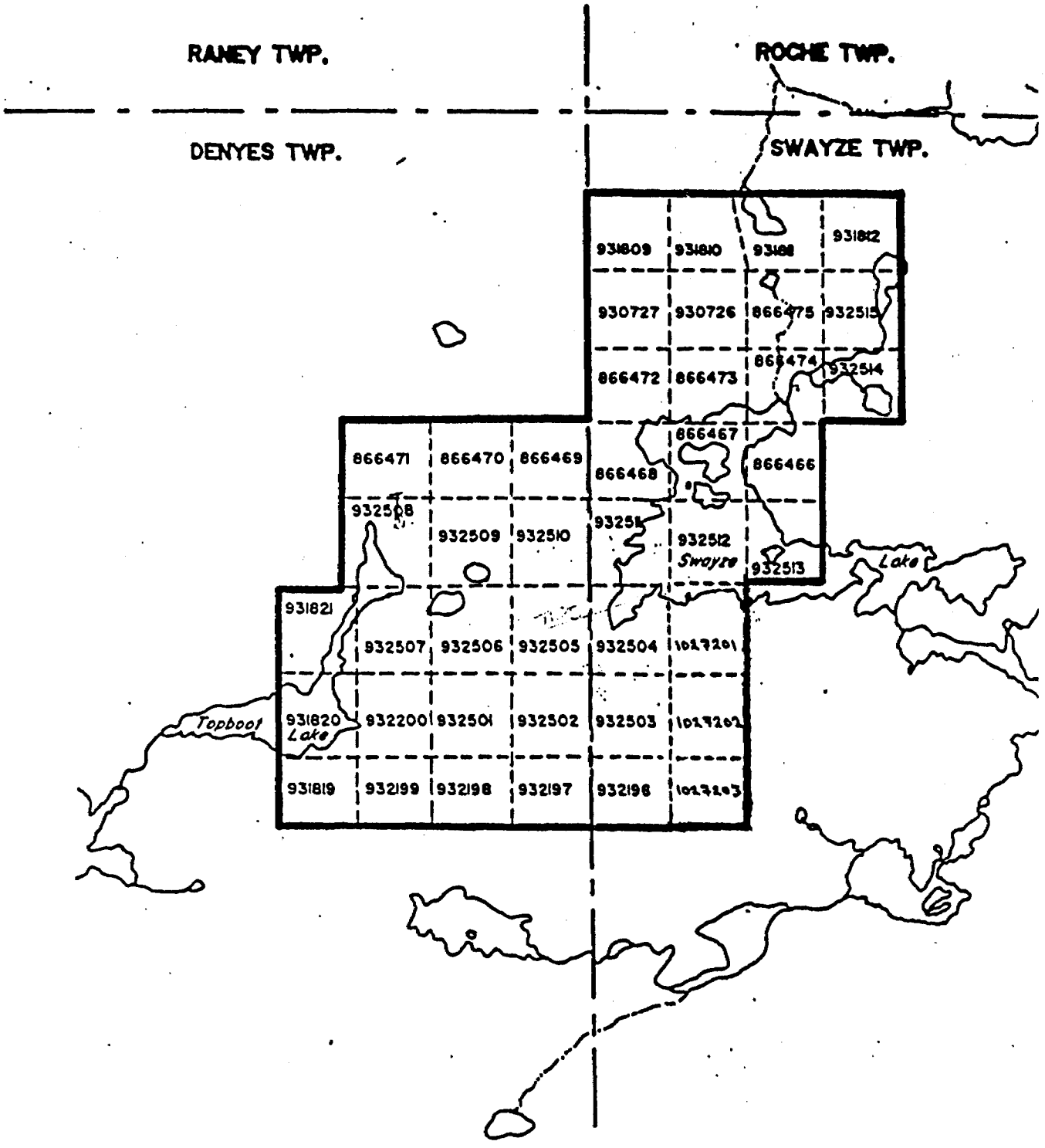


Figure 2

FIGURE 3 SYLVANITE PROSPECT CLAIM GROUP

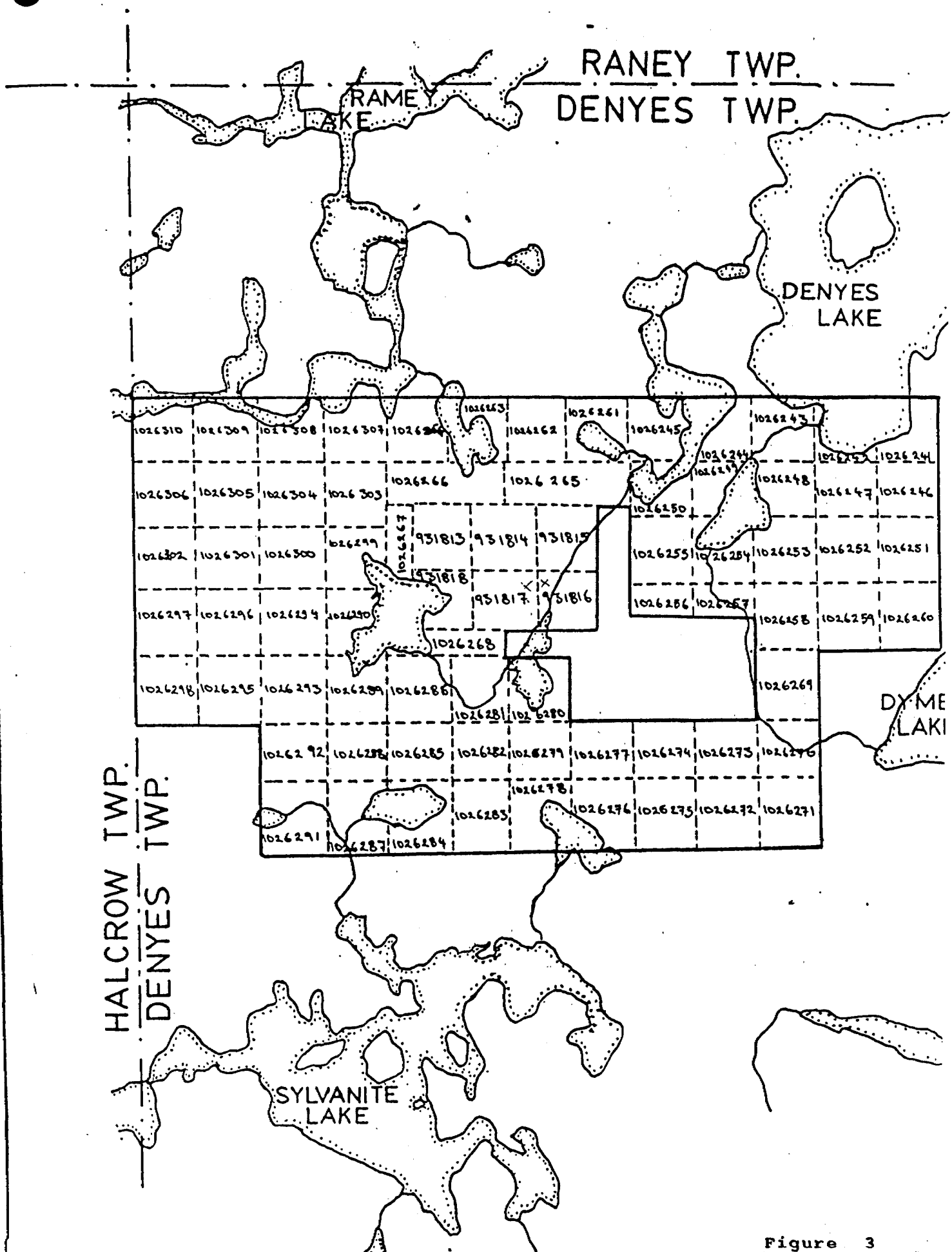


Figure 3

FIGURE 4

PROPOSED GRID EXTENSIONS FOR THE TOPSOOT LAKE CLAIMS

——— PREVIOUSLY CUT GRID LINES

– – – – PROPOSED GRID LINES.

NOTE:
(TIE LINES WERE ALSO CUT ON THE NEW GRID (PROPOSED) WHICH ARE NOT SHOWN ON THIS DIAGRAM)

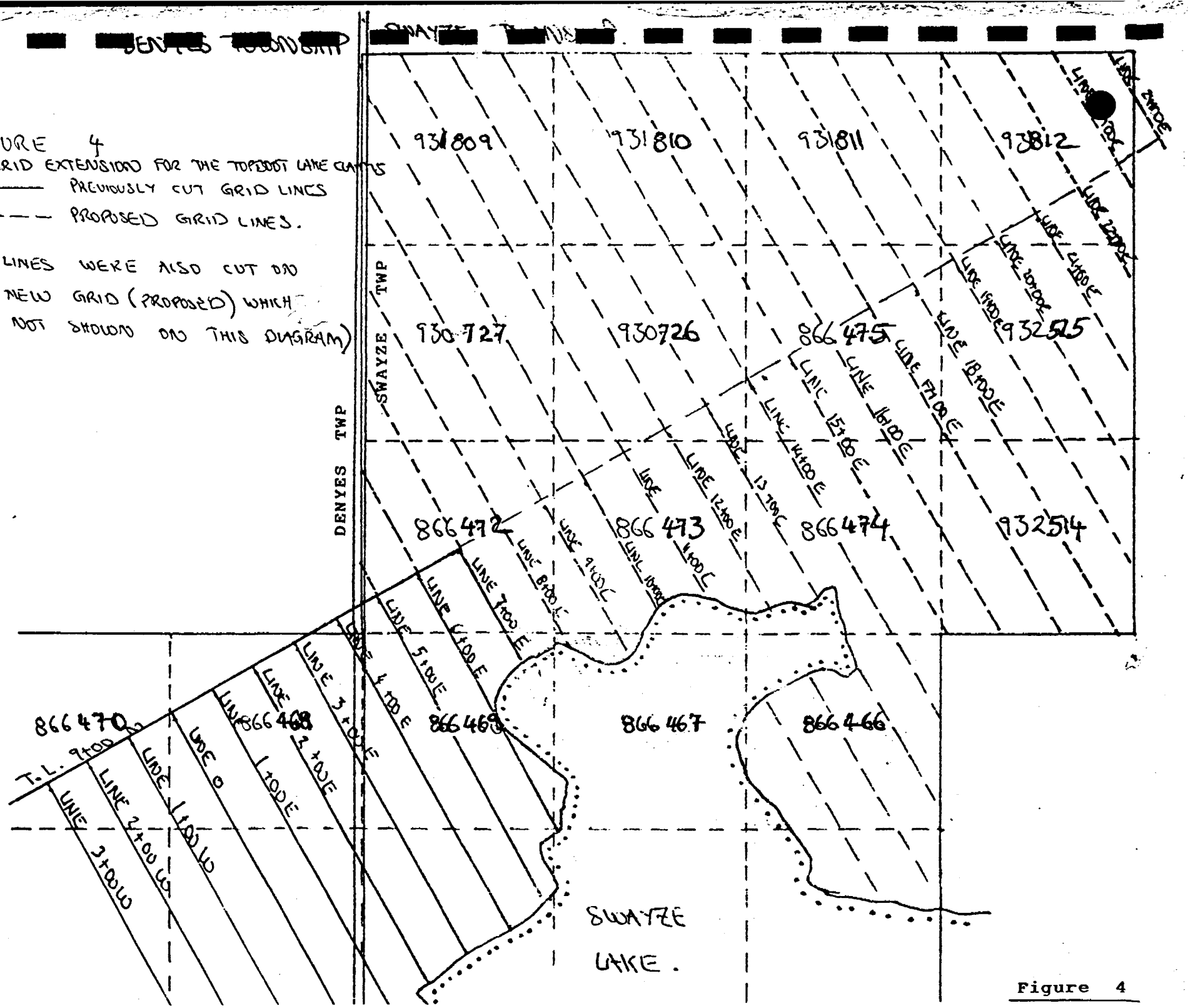


Figure 4

CERTIFICATE

I, Frank H. Toews , B.Sc., F.G.A.C., of Highway 537 , RR#3, Sudbury , Ontario , certify as follows concerning my report entitled Report on Exploration Programs , Topboot Lake and Sylvanite Projects, Swayze and Denyes townships , Swayze Area , Ontario for Can Mac Exploration Ltd., dated 20th January 1989.

1) That I am a graduate of the University of Waterloo, Waterloo , Ontario and hold a Bachelors Degree (1971, Earth Science).

2) That I am a member of good standing in the Geological Association of Canada.

3) That I have practised my work related to the mining and exploration industry in Canada for over 18 years.

4) That this report is a product of:

a) Extended property visits to the Topboot Lake and Sylvanite Properties supervising parts of the stripping , trenching and diamond drilling programs.

b) Data obtained from Can Mac Exploration Ltd., Geological Engineering Services and government geological reports and maps.

5) That I have no direct or indirect interest in the properties and securities of Can Mac Exploration Ltd.,

Dated this 20th day of January 1989

Frank H. Toews

Frank H. Toews , B.Sc., F.G.A.C.
Geological Engineering Services
NORTH BAY , Ontario

9 CERTIFICATE:

I, Robin E. Goad, M.Sc., F.G.A.C., of 163 Pine Valley Dr., Unit 55, London, Ontario, certify as follows concerning my report entitled Report on the Second Phase of Linecutting, Stripping, Trenching and Diamond Drilling on the Topboot Lake Project and the First Phase of Stripping and Trenching on the Sylvanite Project, Swayze and Denyes Townships, Porcupine Mining District, Ontario. May Through October 1988., for Can-Mac Exploration Limited.

1) That I am a member in good standing of the following professional organizations.

a) Geological Association of Canada.
b) Geological Society of America.
c) Canadian Institute of Mining and Metallurgy.
d) Prospectors and Developers Association of Canada.

2) That I am a graduate of the Department of Geology, University of Western Ontario, London, Ontario, with an M.Sc. in geology, obtained in 1987 and a bachelors obtained in 1981.

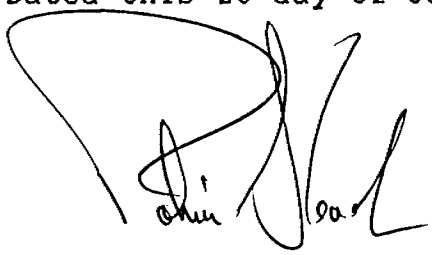
3) That I have been gainfully employed in the exploration and mining industry for more than 11 years.

4) That this report is a product of:

a) Numerous extended property visits including a 1 month continuous presence on the Topboot Lake poject site supervising the stripping, trenching and parts of the diamond drill program.
b) Data obtained from Can-Mac Exploration, Geological Engineering Services and Robert S. Middleton Exploration Services Inc.
c) Data obtained from the government assessment offices in Timmins, Ontario.
d) Discussions with coleagues who are actively working in the area.

5) That I have no direct or indirect interest in the properties and securities of Can-Mac Exploration Ltd., except for 5,000 common shares purchased on the open market.

Dated this 20 day of Jan., 1989.



Robin E. Goad, M.Sc., F.G.A.C.
Geological Engineering Sevices,
North Bay, Ontario.

8 REFERENCES:

1) Abernathy, R.k. 1987. Summary Report on the Geology Survey Conducted on the Topboot Lake Property of Glen Auden Resources Ltd., Swayze and Denyes Townships, Porcupine Mining Division, District of Cochrane. Unpublished Company Report.

2) Abernathy, R.K. 1987. Report on the Property of Glen Auden Resources Ltd., Denyes Township, Porcupine Mining Division, District of Cochrane. Unpublished Company Report.

3) Goad, R.E. 1988. Report on Stripping and Trenching on the Saxton Lake, Topboot Lake and Sylvanite Projects, Swayze and Denyes Townships, Porcupine Mining District, Ontario, Nov., 1987 Through Mar., 1988. Unpublished Company Report for Can-Mac Exploration Ltd.

4) Thurston, P.C., Siragusa, G.M. and Sage, R.P. 1977. Geology of the Chapleau Area, Districts of Algoma, Sudbury and Cochrane. Geoscience Report 157, Ontario Division of Mines GR 157, 293 p., Accompanied by Maps 2351, Scale 1:250,000, and Map 2221, Scale 1 Inch:4 Miles (1:253,440), Ministry of Natural Resources, Toronto.

10 APPENDIX:

ROCK TYPES

6 DIABASE INTRUSIONS

5 METASEDIMENTS

a) Massive to moderately well laminated, fine-grained quartz-feldspar-biotite schist +/- muscovite +/- chlorite.
b) Well laminated, fine-grained, argillaceous &/or calcareous quartz-feldspar-chlorite schist.
c) Well laminated, fine-grained carbonaceous (graphitic) schist.
d) Massive to moderately well laminated metaconglomerate containing 4 mm to 75 cm granitoid &/or porphyry &/or black lithic clasts in a fine-grained quartz-feldspar-biotite schist groundmass.
e) Well laminated, fine-grained, slatey quartz-feldspar-muscovite-biotite schist.

4 INTERMEDIATE PORPHYRITIC AND DIORITE INTRUSIONS AND LAMPROPHYRE DYKES

a) White, euhedral 1 to 3 mm plagioclase phenocrysts in a massive fine-grained light to medium green/gray quartz-plagioclase-muscovite +/- chlorite groundmass.
b) Sericitic, 1 to 3 mm plagioclase phenocrysts in a weakly to intensely foliated, fine-grained and locally weakly altered quartz-plagioclase-muscovite schist groundmass. Alteration minerals may include sericite, chlorite, carbonate, pyrite, an unidentified pink alteration and quartz.
c) White, euhedral plagioclase phenocrysts in a fine-grained, light gray quartz-plagioclase-muscovite schist groundmass with biotite flecks.
d) Intensely altered porphyry with faint, sericitic plagioclase phenocrysts or with phenocrysts completely altered to sericite &/or carbonate. Rock may also contain quartz-carbonate +/- sulphide veins and veinlets. Alteration minerals include quartz, carbonate, chlorite, sericite, epidote, green mica, graphite, pyrite, chalcopyrite malachite and galena.
e) Coarse-grained dioritic phase of plagioclase, quartz and chloritic hornblende and biotite.
f) Fine-grained and porphyritic, brown lamprophyre dykes

3 FELSIC METAVOLCANICS

a) Massive to weakly foliated, light to medium green, fine-grained quartz-plagioclase-muscovite schist.
b) Moderately to intensely foliated, light green, fine-grained quartz-plagioclase-muscovite schist to sericite schist.
c) Well foliated, altered, fractured &/or microbrecciated &/or brecciated &/or sheared and locally mylonitic quartz-plagioclase-muscovite schist. Alteration minerals include sericite, chlorite, quartz, alkali feldspar, epidote, green mica, carbonate, hematite/limonite, graphite pyrite and chalcopyrite.
d) Moderately to intensely foliated, light green, fine-grained quartz-plagioclase-muscovite schist with lapilli-sized clasts.
e) Moderately to intensely foliated, light green, fine-grained quartz-plagioclase-muscovite schist with apparent tectonic clasts.

2 MAFIC METAVOLCANICS

a) Massive to weakly foliated, dark green/gray chloritic amphibolite flows.
b) Well foliated, medium to dark green chlorite +/- plagioclase schist.
c) Well foliated and altered chlorite +/- plagioclase schist with sericite, carbonate, hematite and sulphide alteration minerals.
d) Massive to weakly foliated, pillowed dark green/gray chloritic amphibolite flows.
e) 2 d) with pillow breccia.
f) Massive, dark green, fine- to medium-grained gabbro.

1 ULTRAMAFIC ROCKS

a) Massive to weakly foliated, dark green pyroxene spinofex komatiitic flows.
b) 2 a) with pillows.
c) Massive to weakly foliated, fine- to medium-grained, dark green peridotite intrusions.

SYMBOLS

- = FOLIATION OR SCHISTOSITY
- = PRINCIPAL SHEAR DIRECTION
- = BEDDING
- = VEIN TREND WITH DIP DETERMINED
- = VEIN TREND WITH DIP UNDETERMINED
- = TENSION GASH, CONJUGATE OR EN-ECHELON FRACTURE DIRECTION WITH DIP DETERMINED
- = TENSION GASH, CONJUGATE OR EN-ECHELON FRACTURE DIRECTION WITH DIP UNDETERMINED
- = JOINTS WITH DIP DETERMINED
- = JOINTS WITH DIP UNDETERMINED
- = CONTACT DETERNINED
- ----- = CONTACT PROJECTED
- = PILLOWS WITH DIP DETERMINED
- = PILLOWS WITH DIP UNDETERMINED
- = LOCALLY EXTENSIVE SHEARING
- = LINEATION
- = SWAMP
- = OUTLINE OF AREA STRIPPED
- = OUTLINE OF AREA TRENCHED
- H_2O = PART OF TRENCH OVERLAIN BY WATER
- = OLD TRENCH
- = BEAVER DAM
- = OLD TRENCH
- = GLACIAL STRIAE DIRECTION

- Qtz = QUARTZ VEINS
- Carb = CARBONATE
- Ser = SERICITE
- Chl = CHLORITE
- Ep = EPIDOTE
- Grn = GREEN MICA
- Pink = UNIDENTIFIED PINK ALTERATION
- LIM = LIMONITIC AND/OR HEMATITIC SURFACE EXPOSURE
- Sil = SILICIFIED
- Py = PYRITE
- Cpy = CHALCOPYRITE
- Po = PYRRHOTITE
- Mt = MAGNETITE
- Graph = GRAPHITE

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX: (705) 642-3300
ANAYLTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 72140 Date: August 5, 1988

Received July 22, 1988 8 Samples of Rock

Submitted by Can Mac Resources Inc., Barry's Bay, Ontario Proj.# Topbooth

SAMPLE NO.	GOLD PPB	SILVER PPM
DV-0455	120	Nil
375-N	560/570	1.3
375-S	30	Nil
22-275-N	Nil	Nil
22-275-N	Nil	Nil
22-325-NC	Nil	Nil
22-325-V	Nil	Nil
22-330-N	190/110	Nil

Per G. Lebel-Manager/r

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Certificate of Analysis

Certificate No. 72245 Date: August 11, 1988

Received August 1, 1988 44 Samples of Rock and Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario

SAMPLE NO.	GOLD PPB
AC RD-1	Nil
T.L. 88-1-1	120
2	50
3	110
4	Nil
5	Nil
6	10
7	Nil
8	Nil
9	Nil
10	50
11	10
12	Nil
13	40
14	Nil
15	Nil
16	Nil
17	Nil
18	Nil
19	50
20	1580/930
Second Pulp	820/890
21	620
22	250
T.L. 88-1-23	Nil
24	70
25	40
26	120
27	20
28	Nil
29	Nil
30	Nil
31	Nil
32	Nil
33	Nil
34	Nil
35	Nil
36	Nil
37	Nil
38	Nil
T.L. 88-2-14	20
15	190
16	620
17	1250/950
18	40

Per G. Lebel

G. Lebel-Manager/rl

ESTABLISHED 1928

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Certificate of Analysis

Certificate No. 72334 Date: Aug. 16, 1988

Received Aug. 9, 1988 51 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

Proj. #Top Booth

SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB
TL-88-2-1	40	TL-88-3-9	460	TL-88-33-32	Nil
2	10	10	30	33	10
3	Nil	11	10	34	Nil
4	10	12	210	35	Nil
5	30/Nil	13	970/1010	36	Nil
6	20	14	680		
7	Nil	15	250		
8	Nil	16	220		
9	Nil	17	60		
10	20	18	40		
11	20	19	30		
12	70	20	80/50		
13	40	21	50		
19	10	22	50		
20	10	23	30		
TL-88-3-1	20	24	20		
2	20	25	20		
3	20	26	10		
4	Nil	27	10		
5	Nil	28	10		
6	Nil	29	10		
7	10	30	10		
8	1270/1300	31	10		

Per G. Lebel - Manager /ns

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Certificate of Analysis

Certificate No. 72453 Date: August 22, 1988

Received Augsut 17, 1988 22 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario

SAMPLE NO.	GOLD PPB
TL-88-3-37	10
38	Nil
39	10
40	Nil
41	Nil
42	20/20
43	Nil
44	Nil
45	Nil
TL-88-4-6	Nil
7	Nil
8	Nil
21	Nil
22	Nil
23	Nil
24	Nil
25	60
26	Nil
27	Nil
28	370/270
29	130
30	40

Per G. Lebel-Manager/rl

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Certificate of Analysis

Certificate No. 72625 Date: Sept. 6, 1988

Received Aug. 29, 1988 57 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB
TL-88-4-1	10	TL-88-4-39	Nil	TL-88-4-62	Nil
2	Nil	40	Nil	63	10
3	10	41	Nil	64	50/60
4	10	42	Nil	65	10
5	Nil	43	Nil	66	Nil
9	Nil	44	Nil	67	Nil
10	Nil	45	40/20	68	Nil
11	Nil	46	Nil	69	Nil
12	Nil	47	Nil	70	10
13	Nil	48	Nil		
14	Nil	49	Nil		
15	Nil	50	Nil		
16	20	51	Nil		
17	Nil	52	Nil		
18	Nil	53	Nil		
19	Nil	54	Nil		
20	Nil	55	70/90		
31	90/140	56	Nil		
32	Nil	57	Nil		
33	Nil	58	Nil		
34	Nil	59	Nil		
35	10	60	10		
36	Nil	61	20		
37	Nil				
38	Nil				

Per G. Lebel

G. Lebel - Manager /ns

ESTABLISHED 1928

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Certificate of Analysis

Certificate No. 72701 Date: September 9, 1988

Received September 1, 1988 16 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario Proj.# Topboot

SAMPLE NO.	GOLD PPB
TL-88-5-1	30
2	40
3	20
4	40
5	50/30
6	Nil
7	10
8	30
9	30
10	Nil
11	Nil
12	Nil
13	Nil
26	Nil
27	Nil
28	10/Nil

Per G. Lebel

G. Lebel-Manager/rl

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ANAYLTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 72916 Date: Sept. 23, 1988

Received Sept. 15, 1988 37 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

SAMPLE NO.	GOLD PPB
TL-88-6-21	Nil
22	Nil
23	Nil
24	Nil
25	Nil
26	Nil
28	50
29	270/330
30	Nil
31	Nil
32	Nil
33	Nil
34	Nil
35	Nil
36	Nil
37	Nil
38	Nil
39	Nil
40	20
41	Nil
TL-88-6-42	80
43	1200 0.044(Oz/ton)
44	220
45	60
46	240
47	520
48	70
49	120
50	330
51	330
52	270
53	Nil
54	130
55	Nil
56	Nil
57	110
58	Nil

Per G. Lebel

G. Lebel - Manager /ns

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Certificate of Analysis

Certificate No. 72915 Date: Sept. 27, 1988

Received Sept. 15, 1988 56 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB
TL-88-5-14	80	TL-88-5-39	480/560	TL-88-5-6	20
15	90	40	Nil	7	20
16	20	41	50	8	Nil
17	Nil	42	Nil	9	Nil
18	Nil	43	Nil	10	Nil
19	40	44	Nil	11	10
20	Nil	45	Nil	12	10
21	Nil	46	Nil	13	20
22	Nil	47	Nil	14	Nil
23	Nil	48	Nil	18	Nil
24	Nil	49	Nil	19	Nil
25	210/220	50	20	20	20
29	Nil	51	Nil		
30	Nil	52	10		
31	Nil	53	30		
32	Nil	54	Nil		
33	Nil	55	Nil		
34	Nil	TL-88-6-1	Nil		
35	Nil	2	Nil		
36	Nil	3	20		
37	Nil	4	30		
38	Nil	5	1290/1570		

Per G. Lebel - Manager /ns

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F.A.T.

Certificate of Analysis

Certificate No. 72963 Date: Sept. 30, 1988

Received Sept. 19, 1988 41 Samples of Split Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

SAMPLE NO.	GOLD PPB
TL88-6-59	Nil
60	Nil
61	Nil
62	Nil
63	Nil
64	10
65	Nil
66	Nil
67	10
68	70/60
69	20
70	290
71	40
72	20
73	30
74	20
75	140/80
76	70
77	20
78	10
79	10
80	40
81	70
TL88-6-82	20
83	10
84	20
85	100
86	250/230
87	70
88	30
89	40
90	250
91	70
92	10
93	100/60
94	40
95	20
96	40
97	10
98	30
99	Nil

Per G. Lebel

G. Lebel - Manager /ns

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Certificate of Analysis

Certificate No. 73205 Date Oct. 12, 1988

Received Oct. 7, 1988 22 Samples of Whole Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

Proj. #Top Boot

SAMPLE NO.	GOLD PPB	SILVER PPM
TL88-7-1	10	Nil
2	10	Nil
3	10	Nil
4	30	Nil
5	1500/1730	0.5
6	170	Nil
7	140	Nil
8	150	Nil
9	80	Nil
10	Nil	Nil
11	20	Nil
12	Nil	Nil
13	Nil	Nil
TL88-8-1	Nil	Nil
2	40	Nil
3	20	Nil
4	20	0.2
5	50	Nil
6	150	Nil
7	230/260	Nil
8	100	Nil
9	20	0.3

Per G. Lebel

G. Lebel - Manager /ns

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Certificate of Analysis

Certificate No. 73280 Date Oct. 17, 1988

Received Oct. 13, 1988 23 Samples of Whole Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

Proj.#Top Boot

SAMPLE NO.	GOLD PPB	SILVER PPM
TL-88-9-1	30/30	Nil
2	10	Nil
3	10	Nil
4	20	Nil
5	Nil	Nil
6	Nil	Nil
7	Nil.	0.2
8	10	0.3
9	10	Nil
10	200/160	Nil
11	120	Nil
12	140	Nil
13	20	Nil
14	40	Nil
15	150/200	Nil
16	Nil	Nil
17	50	0.3
18	150	Nil
19	30	Nil
20	110	0.2
21	70	0.4
22	230/150	0.5
23	30	0.2

Per G. Lebel

G. Lebel - Manager /ns

CYA

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Certificate of Analysis

Certificate No. 73380 Date Oct.24, 1988

Received Oct. 19, 1988 9 Rock Samples

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

Proj. #Sylvanite

		SAMPLE NO.	GOLD PPB	
A		508 M Wl+245	550	
	?	Old(300°) Trenches	230	
B		BX Second Pulp	10630/10490 10220/11250	.31 oz
	?	No Tag	30	
D		East X-TR (N-END)	10	
		Foreign Claim Trench	Nil	
C		(DDH)Old Trench 300°+off Shoot to S.W.	3840/3910	.11 oz
E		West X-TR 46 Vut Wall RX(~~46~~) @ 0+36.4 ms West Side	Nil	
F		West Road Trench (Now Covered)	20	

" See "page 5-A Foreign Claim (606458) Sample should not be submitted since trench was not on CAN-MAC ground.

Reference Samples Sent by J.H. to Lab. for Assay

Per G. Lebel

G. Lebel - Manager /ns

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705)642-3244 FAX (705)642-3300

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Assaying - Consulting - Representation

Certificate of Analysis

Certificate No. 73605 Date Nov.7, 1988

Received Nov. 4, 1988 17 Samples of Drill Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

Proj. #Top Boot

SAMPLE NO.	GOLD PPB
TL88-10-1	110
2	20
3	10
4	Nil
5	40
6	20
7	30
8	30
9	130/120
10	80
11	80
12	110/90
13	110
14	10
15	20
16	Nil
17	10

Per G. Lebel

G. Lebel - Manager /ns

CYA

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244 FAX (705) 642-3300

Swastika Laboratories

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Assaying - Consulting - Representation

Certificate of Analysis

Certificate No. 73638 Date Nov. 9, 1988

Received Nov. 7, 1988 36 Samples of Drill Core

Submitted by Can Mac Exploration Ltd., Barry's Bay, Ontario.

Proj. #Top Boot

SAMPLE NO.	GOLD PPB	SAMPLE NO.	GOLD PPB
TL88-11-1	50	TL88-11-21	20
2	40	22	30
3	990/940	23	Nil
4	50	24	30
5	40	25	10
6	60	TL88-12-1	20
7	20	2	400
8	10	3	150
9	30	4	50
10	10	5	450
11	60	6	20
12	30	7	100
13	20	8	30
14	40	9	20
15	100/120	10	30/30
16	120	11	10
17	20		
18	20		
19	20		
20	10		

Per G. Lebel

G. Lebel - Manager /hs

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

Swastika Laboratories

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Established 1928

Assaying - Consulting - Representation

Certificate of Analysis

Certificate No. 73710 Date November 17, 1988

Received November 14, 1988 23 Samples of Drill Core

Submitted by Can Mac Exploration Ltd.- Barry's Bay, Ontario Proj.# Top Boot

SAMPLE NO. TL 88-13#	GOLD PPB
1	120
2	Nil
3	110
4	50
5	400
6	440
7	90
8	740/760
9	70
10	310
11	250
12	90
13	30
14	20
15	20
16	30
17	30
18	80
19	90/80
20	Nil
21	20
22	40
23	30

Per G. Lebel

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DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - DERRAUGH VEIN ZONE.

HOLE NUMBER: T.L.-88-2

LOCATION: 0+65 W / 6+65 S

LENGTH OF HOLE: 89.6 METRES (294 FEET)

AZIMUTH: 250 DEGREES

DIP: - 60 DEGREES

STARTED: 27 JULY, 1988

FINISHED: 28 JULY, 1988

LOGGED BY: ROBIN E. GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC

CORE SIZE: BQ

DIP TESTS: 89.6 METRES (294 FEET) = 61 DEGREES

			Au PPB
SAMPLES:	TL-88-2-1	26.7-27.7 M = 1.0 M	40
	TL-88-2-2	27.7-28.7 M = 1.0 M	10
	TL-88-2-3	28.7-29.7 M = 1.0 M	NIL
	TL-88-2-4	29.7-30.7 M = 1.0 M	10
	TL-88-2-5	32.3-33.3 M = 1.0 M	20/NIL
	TL-88-2-6	33.3-34.3 M = 1.0 M	20
	TL-88-2-7	34.3-35.3 M = 1.0 M	NIL
	TL-88-2-8	35.3-36.3 M = 1.0 M	NIL
	TL-88-2-9	36.3-37.3 M = 1.0 M	NIL
	TL-88-2-10	52.6-53.6 M = 1.0 M	20
	TL-88-2-11	53.6-54.6 M = 1.0 M	20
	TL-88-2-12	54.6-55.6 M = 1.0 M	70
	TL-88-2-13	55.6-56.6 M = 1.0 M	40
	TL-88-2-14	56.6-57.6 M = 1.0 M	20
	TL-88-2-15	57.6-58.6 M = 1.0 M	190
	TL-88-2-16	58.6-59.0 M = 1.0 M	620
	TL-88-2-17	59.0-60.0 M = 1.0 M	1250/950
	TL-88-2-18	60.0-61.0 M = 1.0 M	40
	TL-88-2-19	61.0-62.0 M = 1.0 M	10
	TL-88-2-20	62.0-63.0 M = 1.0 M	10

METERAGE	DESCRIPTION
0-1.8 M	CASING
1.8-58.6 M	TOPBOOT LAKE PORPHYRY INTRUSION
1.8-22.4 M	WEAKLY ALTERED FELDSPAR PORPHYRY Approximately (approx) 25 to 30 %, fine-grained, 1 mm sericitic plagioclase phenocrysts in a fine-grained, chloritic and sericitic, altered groundmass. Numerous fine, 1 to 3 mm white carbonate (carb) veinlets which commonly trend @ 20 and 60 degrees to the core axis (C.A.). They typically occur every 3 to 5 cm and commonly in a criss-cross-like pattern. Abundant fine chloritic fractures and patches up to 1 cm in size. Approx 2 %, 1 to 5 cm chloritic xenoliths. Rock is pervasively to partially carbonatized, particularly marginal to carb fractures and veinlets. These areas are commonly bleached. Traces (tr) of disseminated (diss) pyrite (py) but locally concentrated to 1 to 2 % along chloritic fractures. 1.8-2.0 M Blocky core. 3.0-3.3 M Core locally vuggy because of the weathering of Carbonate. 4.5-6.5 M Locally blocky core because of an abundance of chloritic fractures and carbonate veinlets parallel to sub-parallel to the C.A. 8.9 M 5 cm wide quartz (qtz) > carb veinlet @ 60 degrees to the C.A. with marginal intense shearing composed of chlorite, carbonate and 2 % fracture filling py either side. 9.4 M 3 cm wide carb veinlet @ 40 degrees to the C.A.
22.4-35.2 M	SERICITE-CHLORITE-CARBONATE ALTERATION ZONE Gradational contact into a feldspar destructive alteration. Plagioclase phenocrysts are only locally discernable with these zones having gradational contacts. Local chloritic xenoliths up to 5 cm. Core has a banding locally because of heterogenous silicification, carbonatization, sericitization and chloritic fractures. Bands are @ 40 degrees to the C.A. Bleaching is most intense marginal to qtz and carb veinlets. Siliceous banding progressively changes to intense chloritization. Rock contains tr diss py but locally 1 to 2 % within larger chloritic fractures. Numerous 1 to 3 mm carb veinlets commonly oriented @ 45, 80 and 20 degrees to the C.A. 23.2 M 40 cm wide zone of siliceous bleaching marginal to a 5 cm qtz-carb veinlet @ 40 degrees to the C.A.

24.7-26.0 M Locally intense beige coloured silicification marginal to carb veinlets and chloritic fractures @ 30 to 45 degrees to C.A.
27.0-30.7 M Locally abundant chlorite filled fractures with coarse 2 mm py. Fractures commonly trend @ 30 to 45 degrees to the C.A.
Zones of intense siliceous bleaching commonly marginal to the larger veinlets grading peripherally into sericitic and carb alteration.
32.3-35.2 M Same as above.

35.2-39.4 M SILICEOUS ALTERATION ZONE
Gradational contact into a rock with less chlorite and sericite and increasing amounts of silica. The rock has a beige to pinkish-beige colouration which may be in part alkali feldspar metasomatism. Rock contains a greater concentration of sulphide with concentrations of 1 to 2 % fracture filling py. Local areas with up to 25 %, 1 to 2 mm faint, subhedral plagioclase phenocrysts. Local 1 mm to 1 cm carb veinlets with marginal intense siliceous bleaching commonly @ 45 and 60 degrees to the C.A.

39.4-49.4 M WEAKLY ALTERED FELDSPAR PORPHYRY
Gradational contact to sericitic feldspar porphyry composed of 25 to 30 %, 1 to 3 mm, anhedral to euhedral, sericitic plagioclase phenocrysts in a finer-grained, green/gray sericitic and chloritic groundmass. Numerous 1 mm to 1 cm carb veinlets, commonly with marginal siliceos bleaching. Some carb and chlorite veinlets contain 1 to 2 % py. Occasional 1 to 3 cm chloritic xenoliths. Fractures and veinlets commonly trend orthogonally @ 35 and 65 degrees to the C.A.
38.8-40.0 M Extensive bleaching marginal to fractures
41.6-44.5 M Same as above and local green mica.
43.8 M 1 cm qtz veinlet 4 cm offset and oriented @ 60 degrees to the C.A.
47.0-47.8 M Numerous 1 to 3 mm carb and chlorite veinlets oriented @ 40 degrees to the C.A. with peripheral siliceous bleaching up to 5 cm either side.

49.45-58.6 M SILICEOUS ALTERATION ZONE
Sharp contact @ 70 degrees to the C.A. to fine-grained, beige to pinkish-beige, siliceous alteration as previosly described. randomly oriented carbonate +/- qtz and chlorite veinlets and fractures but commonly @ 80 degrees, 50 degrees or sub-parallel to the C.A. Sulphides vary from tr to 1 % and locally 5 % adjacent to some chloritic fractures. Local zones with less altered, discernable plagioclase phenocrysts.

49.4-51.2 M Pervasive beige bleaching with faint specks where plagioclase phenocrysts have been pseudomorphed by sericite.
51.2-52.3 M Zone with numerous relict plagioclase phenocrysts.
52.3-53.0 M Patchy to pervasive siliceous bleaching.
52.6 M 10 cm of chloritic and carbonate microbreccia.
53.0-53.5 M Zone with relict plagioclase phenocrysts and numerous carb veinlets, commonly @ 40 degrees to the C.A.
53.6-58.6 M Progressive increase in the number of fractures and veinlets towards the Main Derraugh Vein. Approx 1 % py, most abundant in chloritic fractures. Progressively more intense pinkish-beige silicification.
53.6-57.0 M Chloritic fractures are oriented @ 50 to 60 degrees to the C.A.
57.0-58.6 M Microbrecciated and 2 % diss py

58.6-59.0 M MAIN DERRAUGH VEIN
Sharp sheared upper contact with epidote and carbonate @ 35 degrees to the C.A. and sheared irregular lower contact @ 90 degrees to the C.A. Zone of massive milky-white qtz silica flooding, yellow-brown carbonate and 1 % finely diss py.

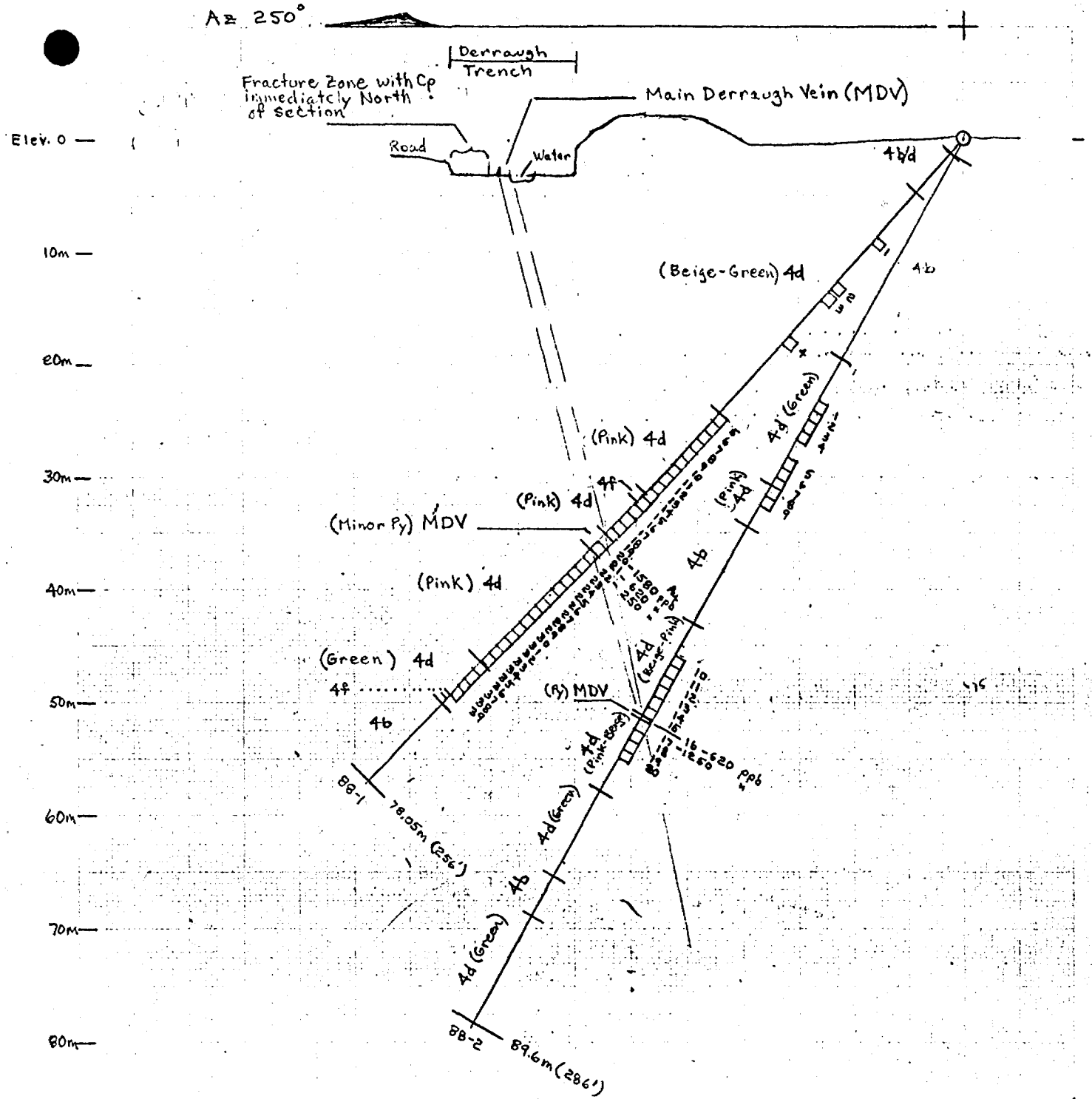
59.0-89.6 M TOPBOOT LAKE PORPHYRY INTRUSION
59.0-66.3 M SILICEOUS ALTERATION ZONE
Fine-grained, beige to pink, siliceous alteration with local zones of carbonatization and chlorite and carbonate fractures. Local microbreccia marginal to the main Derraugh Vein. Local zones of less altered feldspar porphyry composed of 30 %, 1 to 3 mm, anhedral to subhedral plagioclase phenocrysts in a chloritic and siliceous, gray groundmass.
59.0-60.4 M Microbreccia composed of abundant carbonate +/- qtz veinlets, chloritic fractures and pervasive silicification with 1 to 2 % diss py. The larger veinlets commonly trend @ 60 degrees to the C.A.
60.4-61.8 M Massive, pinkish-beige, chert-like, pervasively silicified rock.
62.0-66.3 M Zone of less intense alteration with distinct plagioclase phenocrysts. Contains < 1 %, 1 to > 5 cm, chloritic, xenoliths with siliceous reaction rims. 1 mm Carb veinlets @ 60 to 80 degrees to the C.A.
64.8 M 30 cm zone of extensive bleaching around a 1 cm wide carbonate-chlorite veinlet @ 20 degrees to the C.A. Locally discernable plagioclase phenocrysts.

66.3-74.9 M CHLORITE-CARBONATE-SERICITE ALTERATION ZONE
Sharp contact @ 45 degrees to the C.A. to a dark green chloritic rock with 3 to 5 %, 1 cm, irregular patches of pinkish-beige siliceous altered rock. Numerous hairline to 1 mm carbonate filled fractures commonly oriented @ 50, 70 and 25 degrees to the C.A. Local areas of siliceous alteration over core lengths up to 10 cm.
67.3 M 2 cm wide breccia @ 35 degrees to the C.A., comprised of 1 mm, green fragments in a fine-grained, gray siliceous matrix.
68.9 M 10 cm of siliceous bleaching.
69.8-70.6 M Locally extensive bleaching adjacent to 2 mm to 1 cm carbonate-qtz veinlets oriented @ 40 degrees to the C.A. Local brecciation comprised of 0.5 to 3 cm angular clasts in a siliceous matrix.
73.4 M 1 cm wide carb-chlorite veinlet @ 20 degrees to the C.A.

74.9-78.8 M WEAKLY ALTERED FELDSPAR PORPHYRY
Medium green/gray, fine-grained rock containing 20 %, 1 mm, anhedral to subhedral, sericitic plagioclase phenocrysts. Upper contact is gradational, whereas the lower contact is sharp defined by a 2.5 cm carb veinlet @ 45 degrees to the C.A.
74.9-75.8 M Zone of intense beige, siliceous and carbonate alteration and bleaching withfine 1 mm specks of relict plagioclase phenocrysts pseudomorphed by sericite.
78.25-78.4 M Same as above with a sharp upper contact defined by a 2 mm carb veinlet @ 40 degrees to the C.A..

78.8-89.6 M CHLORITIC ALTERED DIORITE OR INTERMEDIATE VOLCANIC
Numerous chloritic hornblende phenocrysts in a finer-grained dark green groundmass. Tr diss py. Local 1 to 3 mm carb veinlets commonly oriented @ 20 and 60 degrees to the C.A. Weak foliation @ 50 degrees to the C.A. defined by streaks of chlorite.
79.7-80.1 M Pervasive light green bleaching with 1 % finely diss py and irregular carbonate veinlets.
83.1 M 2 cm carb-chlorite veinlet oriented @ 85 degrees to the C.A.
88.1 M 2 cm carb veinlet oriented @ 15 degrees to the C.A.

89.6 M (294 FEET) END OF HOLE



CAN-MAC EXPLORATION LTD.
Topboot Lake Property
Swayze Tp. Ontario

SECTION THROUGH
D.D.H. TL88-1 & TL88-2
(Derraugh Vein)

Scale - 1:500

Date: July, 1988

Geological Engineering Services
R.E.G./F.H.T.

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - DERRAUGH VEIN ZONE

HOLE NUMBER: T.L.-88-1

LOCATION: 0+65 W / 6+65 S

LENGTH OF HOLE: 78.05 METRES (256 FEET)

AZIMUTH: 250 DEGREES

DIP: - 45 DEGREES

STARTED: 26 JULY, 1988

FINISHED: 27 JULY, 1988

LOGGED BY: ROBIN E. GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ

DIP TESTS: 78.05 METRES (256 FEET) = 46 DEGREES

			Au PPB
SAMPLES:	TL-88-1-1	11.6-12.35 M = 0.75 M	120
	TL-88-1-2	16.8-17.8 M = 1.0 M	50
	TL-88-1-3	18.1-19.1 M = 1.0 M	110
	TL-88-1-4	23.4-24.4 M = 1.0 M	NIL
	TL-88-1-5	32.65-33.65 M = 1.0 M	NIL
	TL-88-1-6	33.65-34.65 M = 1.0 M	10
	TL-88-1-7	34.65-35.65 M = 1.0 M	NIL
	TL-88-1-8	35.65-36.65 M = 1.0 M	NIL
	TL-88-1-9	36.65-37.65 M = 1.0 M	NIL
	TL-88-1-10	37.65-38.65 M = 1.0 M	50
	TL-88-1-11	38.65-39.65 M = 1.0 M	10
	TL-88-1-12	39.65-40.65 M = 1.0 M	NIL
	TL-88-1-13	40.65-41.65 M = 1.0 M	40
	TL-88-1-14	41.65-42.65 M = 1.0 M	NIL
	TL-88-1-15	42.65-43.65 M = 1.0 M	NIL
	TL-88-1-16	43.65-44.65 M = 1.0 M	NIL
	TL-88-1-17	44.65-45.65 M = 1.0 M	NIL
	TL-88-1-18	45.65-46.65 M = 1.0 M	NIL
	TL-88-1-19	46.65-47.65 M = 1.0 M	50
	TL-88-1-20	47.4-48.4 M = 1.0 M	1580/930/820/890
	TL-88-1-21	48.4-49.4 M = 1.0 M	620
	TL-88-1-22	49.3-50.3 M = 1.0 M	250
	TL-88-1-23	50.3-51.3 M = 1.0 M	NIL

SAMPLES CONTINUED:

		Au PPB
TL-88-1-24	51.3-52.3 M = 1.0 M	70
TL-88-1-25	52.3-53.3 M = 1.0 M	40
TL-88-1-26	53.3-54.3 M = 1.0 M	120
TL-88-1-27	54.3-55.3 M = 1.0 M	20
TL-88-1-28	55.3-56.3 M = 1.0 M	NIL
TL-88-1-29	56.3-57.3 M = 1.0 M	NIL
TL-88-1-30	57.3-58.3 M = 1.0 M	NIL
TL-88-1-31	58.3-59.3 M = 1.0 M	NIL
TL-88-1-32	59.3-60.3 M = 1.0 M	NIL
TL-88-1-33	60.3-61.3 M = 1.0 M	NIL
TL-88-1-34	61.3-62.3 M = 1.0 M	NIL
TL-88-1-35	62.3-63.3 M = 1.0 M	NIL
TL-88-1-36	63.3-64.3 M = 1.0 M	NIL
TL-88-1-37	64.3-65.3 M = 1.0 M	NIL
TL-88-1-38	65.3-66.3 M = 1.0 M	NIL
TL-88-1-39	66.3-67.3 M = 1.0 M	NIL

METERAGE	DESCRIPTION
0-1.8 M	CASING
1.8-42.25 M	TOPBOOT LAKE PORPHYRY INTRUSION
1.8-6.0 M	FELDSPAR PORPHYRY Light green/gray, sericitic, carbonatized and chloritic feldspar porphyry composed of 20 %, fine-grained, 1 mm faint plagioclase phenocrysts in a fine-grained altered groundmass. Phenocrysts are subrounded (anhedral) and extensively altered to sericite. The groundmass is sericitic, carbonatized and chloritic emanating from fine, < 1 mm white carbonate > quartz, and/or chlorite, and/or epidote fractures and veinlets. Approximately 1 % chloritic, angular to rounded patches up to 3 cm are interpreted as altered xenoliths. They commonly have reaction rims where they are partially assimilated by the porphyry groundmass. Local areas of patchy to pervasive, beige silicification with traces (tr) disseminated (diss) pyrite (py) and streaks or patches of chlorite. 8.0 M Fine carbonate and/or epidote fractures and veinlets commonly @ 30 degrees to the core axis (C.A.). 5.8 M Carbonate > quartz veinlets, < 0.5 cm wide @ 65 degrees to the C.A.
6.0-32.65 M	SERICITE-CHLORITE-CARBONATE ALTERATION ZONE Contact @ 75 degrees to the C.A. to altered diorite or feldspar porphyry. The rock is composed of light green, sericitic and carbonatized, fine-grained material with dark green patches or spots of chlorite comprising 10 to 15 % of the rock. Patchy to pervasive silicification is common consisting of a cryptocrystalline, chalcedonic, beige to pinkish-beige bleaching of the rock. Patches, fractures and stockworks of chlorite are also common in these areas. Fracture filling and diss Py occurs up to 3 % and is associated with the siliceous alteration and chloritic fractures. There are no discernable plagioclase phenocrysts. 6.1-6.4 M Locally ground and blocky core. 7.6-10.1 M 2 to 5 mm carbonate veinlets occur every 5 to 15 cm along the core, commonly @ 70 degrees to the C.A. with peripheral siliceous bleaching for 2 cm either side. 11.6-12.6 M Local very intense bleaching composed of pervasive carbonatization with patchy silicification and 1 % finely diss py. Epidote, carbonate and chlorite filled fractures up to 3 cm thick @ 25 degrees to the C.A. 12.6-19.8 M Zone of extensive bleaching but less

intense than the previously mentioned interval. Abundant light green sericite and carbonate with numerous fractures filled with epidote, carbonate and/or chlorite @ 25 degrees to the C.A. Several quartz +/- carbonate veinlets up to 15 cm thick. Less common patches of chlorite.
13.2-13.5 M Several quartz veinlets up to 1 cm thick @ 25 and 60 degrees to the C.A. Approximately (Approx) 1 to 2 % diss py associated with irregular patches of chlorite up to 2 cm in size. Local chloritic fractures.
14.7 M 1 cm white quartz-carbonate veinlet with chloritic margins @ 30 degrees to the C.A.
16.1 M 15 cm wide quartz and carbonate veinlet with streaks of chlorite @ 25 degrees to the C.A. The wall rock is bordered for 2 cm with fracture filling and diss py.
17.1 M 2 cm quartz and carbonate veinlet sub-parallel to the C.A. and bordered by 5 cm of fracture filling and diss py (2 to 3 %).
18.3-18.9 M 2 cm quartz-carbonate veinlet sub-parallel to the C.A. with parallel chlorite fractures containing 2 to 3 % fracture filling and diss py.
18.9-19.8 M Locally intense light green to beige bleaching with dark green patchy chlorite. 1 % diss py and quartz-carbonate veinlets up to 3 cm wide trending sub-parallel to the C.A. Some smaller < 0.5 cm veinlets up to 75 degrees to the C.A.
19.8-32.65 M Abundant patchy green chlorite and numerous quartz and carbonate veinlets, often bordered by chlorite streaks and fracture filling and finely diss py. The veinlets are typically 2 to 5 mm wide and commonly trend @ 25 and 65 degrees to the C.A.

32.65-42.25 M SILICEOUS ALTERATION ZONE
Gradational contact into a rock with less chlorite and sericite and increasing amounts of silica. The rock has a beige to pinkish-beige colouration which may be in part alkali feldspar metasomatism. Rock contains a greater concentration of sulphide with concentrations of up to 3 % py over 20 cm wide zones. The siliceous alteration is less feldspar destructive than the carbonate, sericite and chlorite alteration as faint to distinct plagioclase phenocrysts are locally apparent.
32.65-36.0 M Approx 5 % patchy chlorite and fracture filling chlorite with associated py.
36.0-39.0 M Massive pink, siliceous rock with few fractures. Contains chloritic patches up to 3 cm in size with siliceous reaction rims interpreted as altered xenoliths. Occasional carbonate

veinlets @ 30 and 70 degrees to the C.A. Local areas with 1 to 2 mm anhedral plagioclase phenocrysts.
38.4-39.0 M Locally abundant chlorite and carbonate fracture microbreccia.
39.0 M 3 cm quartz > carbonate veinlet @80 degrees
39.0-42.25 M Rock has a more reddish-pink colour because of a limonitic staining. Locally abundant (5 %) patchy chlorite with associated coarse 3 mm py.

42.25-43.5 M LAMPROPHYRE DYKE
Sharp upper and lower contacts @ 75 and 45 degrees to the C.A., respectively to lamprophyre dyke. The rock is light to medium green in colour with 10 %, 1 to 2 mm hornblende phenocrysts, partially to completely pseudomorphed by chlorite. Local 1 mm plagioclase phenocrysts. Contains a 4 cm rounded pink altered xenolith with a tan coloured reaction rim.

43.5-47.4 M TOPBOOT LAKE PORPYRY INTRUSION
43.5-47.4 M SILICEOUS ALTERATION ZONE
Siliceous alteration as previosly described
43.5-43.8 M Abundant < 2 mm stockwork green chloritic and white carbonate veinlets
43.8-45.6 M Massive light pink to beige siliceous alteration with local < 2 mm wide white carbonate veinlets @25 and 75 degrees tothe C.A.
45.8-47.4 M Fine-grained pink, siliceous altered rock but with 15 % plagioclase phenocrysts. The phenocrysts are at first faint and anhedral but grade down section into more distinct and euhedral, 1 to 2 mm crystals. Local chloritic fractures with diss py @ 10 degrees to the C.A. and 1 to 2 mm carbonate veinlets @ 20 degrees to the C.A.

47.4-49.3 M MAIN DERRAUGH VEIN
Sharp pyritic upper contact @ 75 degrees to the C.A. and lower contact @ 50 degrees to the C.A. Zone of massive milky-white silica flooding and quartz veining. Multiple generation of quartz emplacement with minor yellow-brown carbonate fractures and clots. Tr finely diss py within the vein zone. Large 10 cm wide secondary vein @ 48.6 M and @ 65 degrees to the C.A. Local green coloured mica.

49.3-78.05 M TOPBOOT LAKE PORPHYRY INTRUSION
49.3-63.3 M SILICEOUS ALTERATION ZONE
Fine-grained, beige to pink siliceous alteration with local zones of carbonatization and chlorite

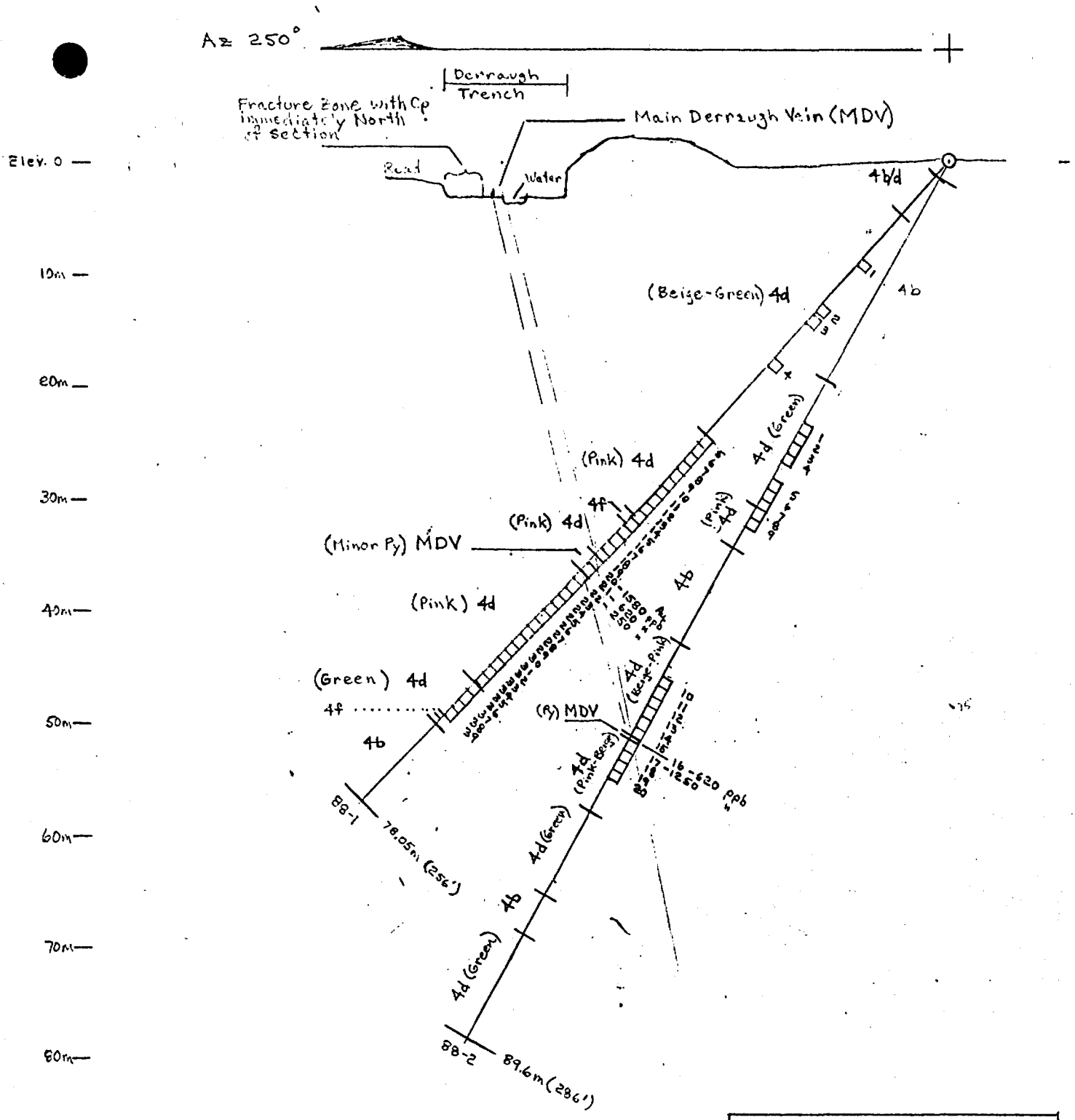
and carbonate fractures. Local microbreccia. Local zones of 15 to 20 %, 1 to 2 mm, anhedral to subhedral plagioclase phenocrysts.
49.3-53.0 M Abundant 1 mm to 3 cm carbonate veinlets commonly trending @ 45 and 75 degrees to the C.A. Local chloritic fractures are commonly oriented @ 35 degrees to the C.A.
53.0-63.3 M Chlorite patches and fractures become increasingly abundant. The fractures are commonly oriented @ 20 degrees to the C.A.
49.3-57.7 M Zone with discernable plagioclase phenocrysts.
59.3-59.6 M Local zone of chlorite microbreccia with 1 %, 2 mm coarse py.
60.0-60.5 M Same as above.
60.5-63.3 M Massive, fine-grained, siliceous alteration with 1 to 2 mm carbonate veinlets @ 40, 60 and 75 degrees to the C.A. The larger veinlets commonly have an associated bleaching with up to 5 % diss py over 2 cm.
62.8-63.3 M 1 to 4 mm anhedral to subhedral, beige siliceous specks which may be relict plagioclase phenocrysts.

63.3-68.4 M CHLORITE-CARBONATE-SERICITE ALTERATION ZONE
Gradational contact to a rock with increasingly abundant sericite and chlorite, less silica and fewer carbonate veinlets but contains intersticial carbonate. Chlorite occurs as patches or fractures locally forming microbreccia. Tr finely diss py but locally concentrated up to 3 % as coarse fracture filling grains over 10 cm intervals.
63.3-67.3 M 25 %, 2 mm to 4 cm rounded patches of siliceous altered rock in a chloritic fracture microbreccia. The siliceous patches contain relict plagioclase phenocrysts. 1 to 3 mm carbonate veinlets commonly oriented @ 65 degrees to the C.A.
67.3-67.9 M Lamprophyre dyke composed of medium green/gray, fine-grained material with approx 5 to 10 %, 1 mm, chloritic hornblende phenocrysts and euhedral plagioclase phenocrysts. Contains < 1 % finely diss py. Upper contact is irregular whereas the lower contact is sharp @ 15 degrees to the C.A. Upper contact contains several partially detached chloritic xenoliths. 3 mm to 30 cm angular to rounded xenoliths also within the dyke with 1 to 2 %, 1 to 3 mm, coarse py.

68.4-78.05 M WEAKLY ALTERED FELDSPAR PORPHYRY
Medium green/gray, fine-grained rock containing 25 %, 1 to 3 mm, anhedral to subhedral, sericitic plagioclase phenocrysts. Local 1 to 4 mm carbonate

veinlets are commonly oriented @ 40 to 60 degrees to the C.A. Local chloritic fractures and local areas with 10 to 50 cm zones of siliceous and carbonate alteration and bleaching.
70.2-70.65 M Zone of beige, siliceous and carbonate alteration and bleaching around carbonate and chlorite veinlets sub-parallel to the foliation.
71.2-71.95 M Same as above.
73.2-73.6 M Same as above.

78.05 M (256 FEET) END OF HOLE



CAN-MAC EXPLORATION LTD.
Topboot Lake Property
Swayze Tp. Ontario

SECTION THROUGH
D.D.H. TL 88-1 & TL 88-2
(Derraugh Vein)

Scale - 1:500

Date: July, 1988

Geological Engineering Services
R.E.G./F.H.T.

D.D.H. # TL 88-3
DIP : -45°
AZIMUTH : 250°
LOCATION : TOPBOOT LAKE, SWAYZE TP. (Derraugh Trench), Claim 932196,
Approximate Coordinates L 00+64 mW / 6+49 mS
ELEVATION : 2-3 mi above vein in Derraugh Trench
STARTED : JULY 28/88
STOPPED : JULY 29/88
COMPANY : CAN-MAC EXPLORATION LTD.
PROPERTY : TOPBOOT LAKE
CONTRACTOR : Les Entreprises Jacques Rousseau, Rouyn, Quebec
LOGGED BY : Frank H. Tovey
DEPTH : 77.75 meters (255 feet)
CORE SIZE : BQ
DIP TESTS : 77.75m (255') -45°

Casing pulled

0 - 1.52m	CASING	(0-5')
1.52-3.12m	4b/	CARBONATIZED - CHLORITIC - SERICITIC PORPHYRY Broken to rounded pieces of fgr. greenish-grey porphyry with feint sericitized plagioclase phenos in carbonatized, chloritic-sericitic matrix; also pieces of vuggy, dark green chloritized rock; 0.5 m G.C. or Lost Core; some re-drilled core
3.12-24.5	4b/d	CARBONONATIZED - CHLORITIC - SERICITIC PORPHYRY (Greenish-grey with beige alteration zones & patches up to 1 m. and as bands to several cm. wide about quartz-carbonate +/- chlorite veinlets (1-15 mm wide) which are scattered throughout; carbonatization is pervasive; 2% quartz-carbonate veinlets are at CA 40-65°; mainly traces of disseminated Py; with local fracture fillings of Py; chloritic fractures at CA 15-20°, 30-40°, 60-70°; about 1% dark green chloritic, sub-angular to sub-rounded fragments 0.2-3 cm in size are scattered throughout; 10-20% sericitized plagioclase phenos are sub-angular to sub-rounded, 1-3 mm in size, disappearing in the beige alteration zones; gradational contact
	3.12-4.12	½-1% Py disseminated & as fracture fillings associated with chlorite-sericite & / or quartz-carbonate veinlets @ CA 15-20°, 40-45°
	4.12-5.12	<½% Py disseminated & also associated with chloritic fragments
	5.12-6.12	½% Py disseminated; beige alteration; veinlets quartz-carb
	6.12-7.12	½% Py disseminated & fracture fillings @ CA 10-20°; beige alteration & quartz-carbonate veinlets

	7.12-8.62	< ½% disseminated Py, some with occasional quartz-carbonate veinlets; beige alteration
	20.9	Oxidized quartz-carbonate veinlets, 1cm wide @ CA 36; H_2O seam
24.5-26.47	4d /	BIEGE-PINKISH ALTERATION ZONE
		More siliceous, less carbonate in matrix; few chloritic fragments; some chlorite in matrix, minor green mica; Traces of disseminated Py & some Py with chloritic fracture fillings within 20 cm of Lamprophyre contact;
	25.6-26.47	½-2% quartz-carbonate veinlets ≤ 3mm wide @ CA 30-40°, 20-25°
	26.47	Contact with Lamprophyre @ approximately CA 60°; irregular but sharp.
26.47-28.0	4f /	LAMPROPHYRE DYKE
		Greenish-grey, f.gr, with chlorite phenocrysts ≤ 2mm size (2-5%); pervasively carbonatized; Trace Py, few carbonate veinlets;
	26.53-27.37	More strongly carbonatized with clots (≤ 5mm) of carbonate as well as some bands of beige carbonate; parts foliated @ CA 35-60°; few quartz-carbonate veinlets (≤ 2mm wide) at CA 45°, 60-65°, 15°
	28.0	Contact fairly sharp @ CA 70°
28.0-35.06	4d /	PINK TO BEIGE-PINK SILICEOUS ± CARBONATE ALTERATION ZONE (WEAK TO NO CARBONATE IN MATRIX)
		Pink, more siliceous zones with more beige-pink zones; remnant chlorite patchy areas varying from several mm to several cm.; also occasional chloritic fragments up to 5 mm size; zone is cut by ≤ 5% quartz-carbonate veinlets 1-3mm wide at CA 16-20°, 35-45°, 50-60°; Trace - ½%, fracture disseminated Py; local Cp in upper section.
Cp	28.0-29.8	Relatively strong pink alteration; parts near massive, parts brecciated with chloritic matrix; local Cp disseminated within chlorite fracture fillings @ CA 20-25° & in chloritic patches.
	29.8-35.06	Mixed beige to pink alteration with remnant chloritic patches; quartz-carbonate veinlets & Py disseminated ± with chloritic fracture fillings often @ CA 20-30°
	35.06	Contact with Main Derraugh Vein somewhat undulating @ approximately CA 15°
35.06-37.0	MAIN DERRAUGH VEIN	
		Minor disseminated Py, mostly with chlorite ±/or sericitic fractures; vein is milky to locally translucent quartz + carbonate.
	35.2-35.25	several chlorite-carbonate veinlets (< 3mm wide) & ribbon... mainly @ CA 20-25°, 30-35°;

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	36.3-36.8	40% Sericitic fragments (a breccia) with a crude foliation in part @ CA 20° +/-; contacts of zone @ CA 45° (+/-) & CA 60°
	37.0	Vein contact @ CA 45°
37.0-40.1	4d/	PINK TO BEIGE SILICEOUS-CARBONATE (WEAK CARBONATE) ALTERATION ZONE
		Mainly pink to pinkish; 1% chloritized fragments - patches as remnants (5mm - several cm size); 5-15% anastamosing quartz-carbonate veinlets, 1mm-2cm wide @ CA 20-30°, 40-50°, 60-70°; ½-1% disseminated Py & Py with chloritic fracture fillings locally up to 5% over several cm.
	39.6-40.1	Quartz-carbonate vein with sericite fracture fillings & minor disseminated Py; vein appears brecciated in part; milky to greyish; contact @ 39.6 m @ CA 35°; contact @ 40.1 m in B.C. (broken core)
40.1-47.56	4d/	BEIGE TO PINKISH SILICEOUS-CARBONATE-CHLORITE-SERICITE ALTERATION ZONE (WEAK CARBONATE IN MATRIX)
		Mainly beige to pale greenish-grey with pinkish patches & bands (1-20cm) which are more siliceous; the greenish-grey areas have up to 20% hazy sericitized plagioclase phenos and a few green chloritic (+/- Py) sub-rounded fragments (or patches) ≤ 3cm size; ½% to locally 2% Py occurs as disseminations & with chloritic fractures @ CA 5-10°, 15-25°; 2% to locally 10% quartz-carbonate veinlets & anastamosing veinlets 1-15mm wide @ CA 20-30°, 40-45°, 55-65°
	40.1-40.80	Medium greenish-grey, chloritic-sericitic, carbonated, foliated @ CA 10-20° with 2% quartz-carbonate veinlets +/- chlorite (some deformed by folding & fracturing); contact @ 40.8m @ CA 30° with 15mm wide quartz-carbonate veinlet with Epidote(?)-chlorite margin.
	45.9-47.45	10% quartz-carbonate +/- chlorite veinlets
47.56-61.68	4d/b	BEIGE TO PINK SILICEOUS ALTERATION ZONE IN ALTERED PORPHYRY
		Similar to unit above but more pale greenish-grey altered porphyry (plagioclase) zones (5-50cm) with ≤ 20% hazy to fairly distinct plagioclase phenos (sub-rounded to occasionally sub-angular) sericitic, 1-2mm in size in a fine sericite-chlorite matrix; few chloritized fragments &/or patches 1-3cm in size; 1-2% quartz-carbonate veinlets 1-20 mm wide & sometimes anastamosing scattered throughout; Trace to locally 1% disseminated Py & some fracture fillings with chlorite; occasional weak carbonate in matrix
	48.84	Minor green mica in beige alteration band

	57.88-58.88	Pink-beige alteration zone flooded by quartz ± parts cut by quartz-carbonate veinlets; some chlorite fracture fillings (+/- Py); minor disseminated Py; contacts @ CA 60° ± 40-45°; resembles portions of the Main Derraugh Vein
	61.68	Contact approximately at CA 30-35° between beige to pinkish alteration band (40 cm wide) with green mica ± altered porphyry below
61.68-73.35	4b/d CARBONATIZED - SERICITIC - CHLORITIC PORPHYRY	
		Greenish-grey with up to 20% hazy to distinct, anhedral to subhedral, rounded to sub-angular, sericite plagioclase phenos. set in a light to dark greenish-grey sericitic-chloritic generally carbonatized matrix; occasional chloritized fragments to 1 cm in size;
	1-2%	scattered quartz-carbonate veinlets 1 - 10 mm wide @ CA 15-30°, 45-60°, a few with disseminated Py; Trace to locally 1% disseminated Py, some with chloritic fractures
	62.42-62.55	Beige siliceous alteration zone with 2cm quartz-carbonate veinlet @ CA 60°
73.35-77.75	4d/b CARBONATIZED - SERICITIC - CHLORITIC ALTERATION ZONE	
		Light to medium greenish-grey, carbonatized rock with occasional feint, plagioclase phenos (rounded); patchy light greenish-grey to white alteration; small clots, patches ±/or rags of chlorite ± Py throughout; scattered quartz-carbonate veinlets mainly 1-3 mm wide at CA 5-15°, 35-45°, 50-60°; ½ - 1% disseminated Py (locally 2% Py); some Py on fractures @ CA 25°-30°, 45°
	73.35	Sharp, irregular contact @ CA 45-65°
	77.33-77.38	1 cm wide quartz-carbonate ± green mica veinlets @ CA 50° ± 30°
	77.75 (255')	End of Hole

(A)

SAMPLING & ASSAYING

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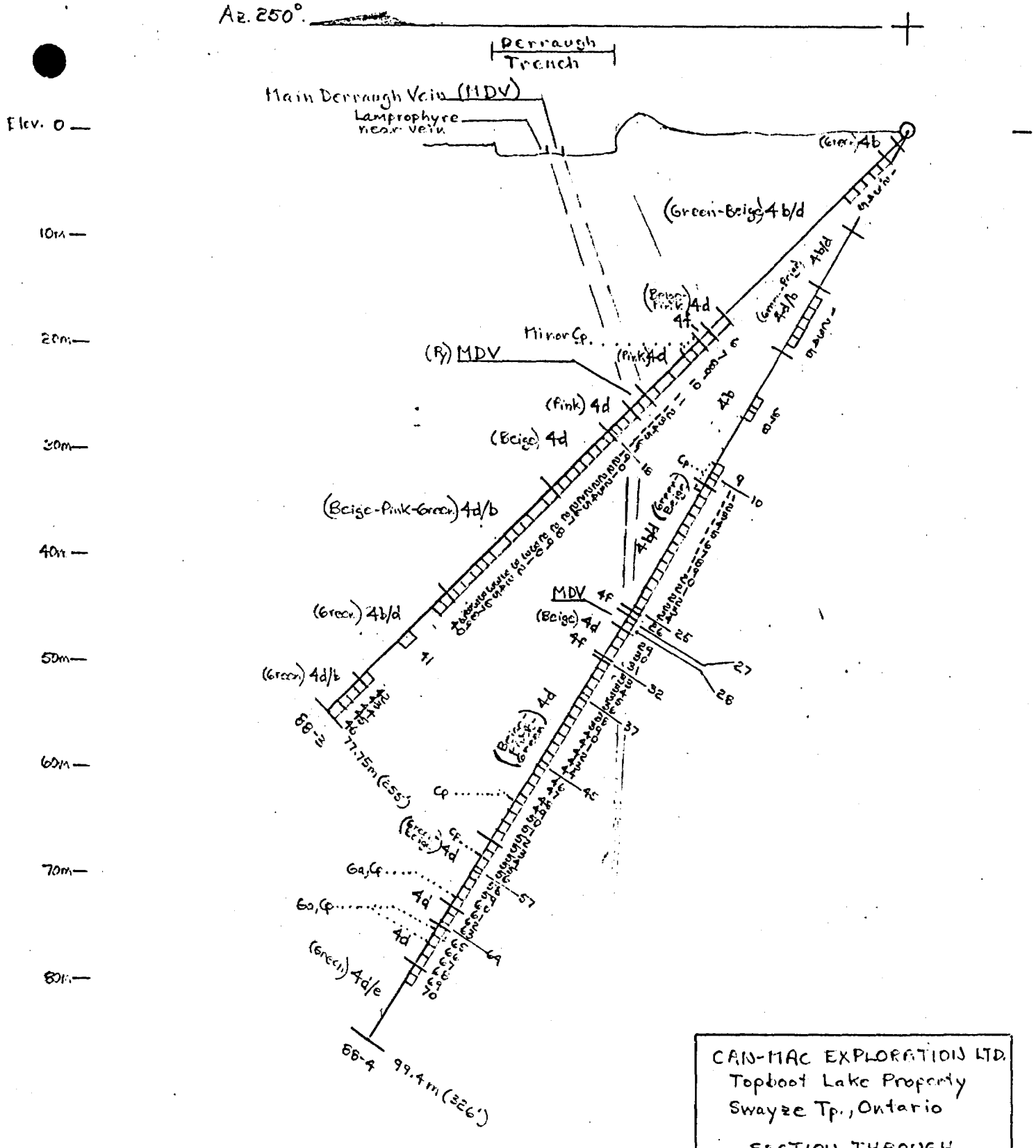
SAMPLE NO.	FROM	TO	LENGTH (meters)	Au (ppb)
TL88-3-1	3.12m	4.12m	1.0 m	20
-2	4.12	5.12	1.0 m	20
-3	5.12	6.12	1.0 m	20
-4	6.12	7.12	1.0 m	NIL
-5	7.12	8.62	1.5m	NIL
-6	24.47	26.47	2.0 m	NIL
-7	26.47	28.0	1.53m	10
-8	28.00	29.0	1.0 m	1270/1300
-9	29.00	30.0	1.0 m	460
-10	30.0	32.0	2.0 m	30
-11	32.0	34.0	2.0 m	10
-12	34.0	35.06	1.06 m	210
-13	35.06	36.06	1.00 m	970/1010
-14	36.06	37.0	0.94m	680
-15	37.0	38.0	1.0 m	250
-16	38.0	39.0	1.0 m	220
-17	39.0	39.6	0.6m	60
-18	39.6	40.1	0.5m	40
-19	40.1	40.8	0.7m	30
-20	40.8	41.8	1.0 m	80/50
-21	41.8	42.8	1.0 m	50
-22	42.8	43.8	1.0 m	50
-23	43.8	44.8	1.0 m	30
-24	44.8	45.8	1.0 m	20
-25	45.8	46.8	1.0 m	20
-26	46.8	47.56	0.76 m	10
-27	47.56	49.0	1.44 m	10
-28	49.0	51.0	2.0 m	10
-29	51.0	52.0	1.0 m	10
-30	52.0	53.0	1.0 m	10
-31	53.0	54.0	1.0 m	10
-32	54.0	56.0	2.0 m	NIL
-33	56.0	57.0	1.0 m	10
-34	57.0	57.88	0.88 m	NIL
-35	57.88	58.88	1.0 m	NIL
-36	58.88	60.0	1.12m	NIL
-37	60.0	61.0	1.0m	10
-38	61.0	61.68	0.68m	NIL
-39	61.68	62.68	1.0m	10
-40	62.68	63.68	1.0m	NIL
-41	66.7	68.2	1.5m	NIL

SAMPLING & ASSAYING, ctd.

DDH TL88-3 ctd

SAMPLE NO.	FROM	TO	LENGTH (meters)	Au (ppb)
TL88-3-42	72.35	74.35	2.0 m	20/20
-43	74.35	75.35	1.0 m	NIL
-44	75.35	76.35	1.0 m	NIL
-45	76.35	77.75	1.4 m	NIL



CAN-MAC EXPLORATION LTD.
Topboot Lake Property
Swayze Tp., Ontario

SECTION THROUGH
D.D.H. TL88-3 & TL88-4
(Derraugh Vein)

Scale - 1:500

Date: July, 1988

Geological Engineering Services
F.H.T.

D.D.H.# TL 88-4
DIP -60°
AZIMUTH 250°
LOCATION TOPBOOT LAKE, SWAYZE TP. (Derraugh Trench), Claim 932196, Approximate Coordinates Line 00+64mW/ 6+49mS
ELEVATION: 2-3 m above vein in Derraugh Trench
STARTED: July 29/88
STOPPED: July 30/88
COMPANY: CAN-MAC EXPLORATION LTD.
PROPERTY: TOPBOOT LAKE
CONTRACTOR: Les Entreprises Jacques Rousseau, Rouyn, Quebec
LOGGED BY: Frank H. Joews
DEPTH: 99.4 meters (326 feet)
CORE SIZE: BQ
DIP TESTS: 99.4m (326') = 58½°

Casing pulled

0 - 5.18m (0 - 17')	CASING	Sand, boulders; driller reported bedrock(?) ledge at about 4', then passed back into overburden
5.18 - 10.7	4d/b GREEN CHLORITE-SERICITE-CARBONATE ALTERATION IN PORPHYRY	Pale greenish alteration with 20% patches & zones of pale to medium greenish-grey altered porphyry up to 10 cm in size with 10-20% rounded to sub-angular sericitized plagioclase phenos 1-5 mm in size set in a f.gr. matrix of chlorite-sericite; plagioclase phenos are distinct to feint to invisible; carbonate is pervasive; few scattered, angular to sub-rounded, chloritized fragments 0.5-3cm in size; Traces to < ½% disseminated Py occasionally with quartz-carbonate-chlorite veinlets which cut all rocks, are scattered throughout unit, vary from 1mm to 3cm in width & are oriented @ CA 40-50°, 15-20°, 80-35°, 60°; approximately 2-3% veinlets; contact is gradational with unit below
10.7 - 16.16	4b/d ALTERED PORPHYRY WITH GREEN SERICITE-CARBONATE-CHLORITE ALTERATION ZONES	Medium to light greenish grey porphyry (& possible dioritic phases) with 20-25% pale greenish alteration bands & zones 1-30 cm wide; porphyry is similar to unit above with exception of dioritic?? phase; 2-3% quartz-carbonate +/- chlorite veinlets 1mm - 1cm wide @ CA 35-45°, 15-25°, 55°, 10°, cut all rocks; Traces Py; pervasive carbonate;
	13.7 - 14.3	Possible porphyritic (feldspar) diorite which is gradational

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		into surrounding rocks; 5-15% white, rounded & greenish rounded feldspar phenos 1-2 mm in size, set in a light greenish-grey f.gr. matrix of feldspar-quartz-chlorite-sericite; occasional chloritic fragment; rock is affected by the beige alteration as well
16.6-23.8	4d/b	GREEN SERICITE-CARBONATE-CHLORITE ALTERATION WITH SOME BEIGE SILICEOUS-CARBONATE ALTERATION & REMNANT ALTERED PORPHYRY
		Pale greenish to greenish-grey with 5-10% beige to pale pinkish siliceous-carbonate alteration bands 2 mm-10 cm in width; occasional patches of remnant green-grey porphyry visible in the green alteration; scattered chloritic fragments, angular to rounded, ≤ 2 cm in size; Trace to locally ½% disseminated Py; 2% scattered quartz-carbonate veinlets (with occasional chlorite & pyrite), 1-5 mm wide @ CA 25-35°, 50-60°, 40-45°; occasional green mica is found in small remnant chloritic fragments(?) in the beige alteration & quartz veinlets which are contained by these bands?
	17.8-18.9	Beige alteration zone with Traces of Py and a 3 cm wide quartz-carbonate vein with minor Py & minor green mica at CA 35° between 18.62-18.69 m; occasional green mica in beige zone which contains some remnant porphyry
	23.8	Gradational contact
23.8-38.2	4b/	GREEN-GREY ALTERED PORPHYRY.
		Medium to medium-dark greenish-grey porphyry with 20-30% plagioclase phenos which are rounded to sub-angular, 1-3 mm in size, pale greenish (sericitic) to occasionally white & are set in a f.gr. green-grey matrix of chlorite +/- sericite; rocks are carbonatized, with traces of Py; few scattered chloritic fragments which are angular to rounded, mainly 1-3 cm in size; & contain disseminated Py; one fragment is 17 cm long.; ≤ 1% quartz-carbonate +/- chlorite veinlets 1-5 mm wide throughout @ CA 15-25°, 40-50°, 70°, 10°; contacts of rock unit are gradational into adjacent units
	29.52-29.8	Beige siliceous-carbonate alteration zone with distinct contacts @ CA 40-45° & 45°, some remnant porphyry patches & minor green mica; zone is cross-cut by a 3 cm. wide quartz-carbonate-Py vein @ CA 30° & by 1-3 mm wide quartz-carbonate veinlets @ CA 30-35° & 45-50° which also cross-cut the 3 cm wide vein with ½% Py disseminations
	36.15	Traces Cp in 3 mm carbonate-quartz veinlet @ CA 45°

Cp

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	37.0-37.3	1% Py with chlorite +/- carbonate +/- quartz veinlets @ CA 2°-15°; some beige patchy alteration present
38.2-52.1	4b/d GREEN PINK	CHLORITE-SERICITE-CARBONATE ALTERED PORPHYRY WITH BEIGE SILICEOUS +/- CARBONATE ALTERATION ZONES Approximately 20% of beige to pink siliceous +/- carbonate alteration as bands 0.5-4cm wide and patchy zones with remnant porphyry ± 50% medium to light green-grey porphyry zones with distinct to feint sericitized feldspar phenos in chloritic ± sericitic matrix with variable carbonatization; scattered chloritic fragments angular to rounded 0.5-3cm ± occasionally 10cm in size; Trace to locally ½% disseminated Py, sometimes associated with scattered chloritic fractures & chloritic +/- chlorite +/- Py fragments; 1-2% scattered quartz-carbonate veinlets 1-15mm wide @ CA 25-35°, 50-60°, 10-15°; (more veinlets in lower part of unit)
Cp	37.0-37.33	≤1% blebs, disseminated Py & disseminated Py & Cp in 1mm chlorite-carb. @ CA 2-5°
Cp	38.2-41.05	5-10% pink to beige siliceous-carbonate alteration patches and bands 0.3-3cm wide @ CA 25-35° & 45-55° 38.69 minor disseminated Cp
	47.77	Green mica associated with chloritic fragments +/- Py
	48.24-48.33	Foliated chloritic fragment @ CA 40-45° with disseminated Py & partly cut by chloritic fractures (+/- Py) @ CA 25-35°
	48.1-50.5	Chloritic fractures (+/- Py), sometimes anastamosing @ CA 25-35°, 40-45°, 15-20°, 2-5°; (≤ 9/10 cm) 48.47 - similar to 47.77 m. 49.31 - " " " 49.86 - 5-10mm wide light grey cherty veinlet with 2% quartz blebs, trains; veinlet @ CA 35-40°; minor Py margin
	50.7-52.1	3-5% quartz +/- carbonate veinlets often associated with beige siliceous alteration haloes or bands; quartz veinlets are 1-5mm wide, @ CA 40-45°, 50-60°, 20-30°; some veinlets are anastomosing & some are offset by chloritic +/- carbonate fractures 51.17 - light grey cherty band ≤5mm wide at CA 40-45°, minor Py in band & wall rocks 51.53-51.60 Quartz-carbonate vein with beige, sub-angular to rounded fragments; contacts irregular with beige host rock @ CA 40° & 60°; fracture fillings to ribbons of chlorite parallel & cut vein which has minor Py & some green mica 51.60-51.68 chloritic veinlet, 2-8 mm wide @ CA 10-15° (oblique to Quartz vein) contains green mica near Quartz Vein; chlorite veinlet shows a wispy termination & cross-cuts (offsets?) some quartz veinlets
52.1-52.55	4f/ LAMPROPHYRE?	
		Well-foliated (CA 5-20°, sinuous?) greenish-grey, sericitic-

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		chloritic-carbonate alteration;
	52.1	Contact @ CA 35-45° partly overprinted by beige siliceous-carbonate alteration band 2cm wide (cross-cutting contact & foliation) @ CA 60°; This band is in turn cross-cut(?) by 2 mm wide quartz veinlet @ CA 15° which parallels the foliation
	52.35-52.53	15% anastomosing quartz ± carbonate ± chlorite ± Py veinlets 1-15 mm wide parallel to foliation & cross-cutting @ CA 30-40°, 50-60°; the cross-cutting veinlets are partly ptygmatically folded due to movement along the foliation
	52.51-52.55	part of a fragment of pinkish siliceous alteration
52.55-54.0	MAIN DERRAUGH VEIN	
	52.55	Contact fairly regular at CA 45-50°
	52.55-52.81	Quartz-carbonate vein; milky; sericite & chlorite veinlets & fractures; Trace Py; lower contact @ CA 50°
	52.81-54.0	Brecciated beige to occasionally pinkish siliceous-carbonate alteration flooded by quartz ± carbonate which also occurs as later veinlets ½-20 mm wide some @ CA 35-50°, 15-20°; light green irregular sericitic veinlets are also present; Trace to locally ½% disseminated Py 53.4-54.0 ≤ ½ to 1% disseminated Py
	54.0	Contact irregular @ approximately CA 50°
54.0-57.2	4d / BEIGE SILICEOUS-CARBONATE-SERICITE (-EPIDOTE?) ALTERATION ZONE	
		Beige to very pale greenish (epidote?) with variable weak carbonate, local chlorite, occasional green mica associated with several 0.5-2 cm chloritic fragments; ¼-3% (locally) disseminated Py which also occurs in some fractures ± chlorite; 5-10% quartz-carbonate veinlets 1-15 mm wide, often anastamosing @ CA 25-35°, 40-50°, 65-70°, 5-15° and occasionally Py-bearing; larger veinlets contain wallrock fragments
	54.0-54.07	Deformed quartz veinlets, Traces Py
	54.1-54.24	Two pale greenish sericitic (Epidote?) carbonated bands 2-4 cm wide @ CA 55-60°
	54.65	Pyritic fractures ± chlorite @ CA 25°
	57.0-57.2	Remnant chloritic patches in beige to pinkish groundmass 57.13-57.23 contact with lamprophyre? may be epidotized & is at CA 15°
57.2-57.5	4f / LAMPROPHYRE?	
		Altered to sericite-chlorite-carbonate; may be several rounded lathy amphibole crystals ≤5mm long altered to chlorite

	57.5	rock is well-foliated @ CA 15° to sub-parallel to CA; Possible epidotization at lower contact which is @ CA 20-35° (irregular); quartz veinlets cut contact & alteration
57.5-77.55	4d/ BEIGE-PINKISH-PALE GREENISH SILICEOUS-CARBONATE-EPIDOTE-CHLORITE-SERICITE ALTERATION ZONE	
		Groundmass is variable with beige to slightly pink to pale green (epidotized) containing variable amounts (Nil to locally 50%, average 15-20%) of chloritic patches, clots, flecks & occasionally 0.8-2.0 cm wide bands; patches are 0.5-10cm size; disseminated & blebs Py often (but not always) show an association with the chlorite; Trace to locally 2% Py (average ½%); occasionally faint, rounded, sericitized plagioclase phenos? 1-3 mm in size in the chlorite patches; ½% to locally 5% (over 20cm) of quartz-carbonate (+/- chlorite) are scattered throughout unit, in widths of 1-5 mm & occasionally up to 6 cm @ CA 15-20°, 25-35°, 45-50°, 60-70°; veinlets may occure as individuals or anastamosing groups
	57.5-61.3	3-5% quartz-carbonate veinlets
	61.37-61.44	Zone of quartz flooding in pinkish alteration plus 15 mm quartz-carbonate veinlet +/- chlorite +/- Py @ CA 55°
	64.4	2-3 cm chloritic patch with 30% Py (massive-disseminated)
	69.05-69.15	Quartz-carbonate vein +/- chlorite ribbons @ CA 45-50°; Trace Py
	71.0-77.55	More pale yellowish-greenish Epidote alteration (pervasive in felsic matrix but variable) minor beige; more carbonate;
	74.77	2-3 cm quartz-carbonate-chlorite vein @ CA 30° with Py blebs (1-2%) & marginal Py veinlet; vein is irregular; stronger Epidote over 20cm
Cp	73.27	Minor Cp with disseminated Py
	75.0-75.16	Several ≤5mm quartz-carbonate veinlets @ CA 30°
	77.55	Contact fairly abrupt in that chlorite disappears & the pale greenish to beige matrix remains
77.55-84.8	4d/ PALE GREENISH TO BEIGE EPIDOTE-SILICEOUS-CARBONATE-SERICITE +/- CHLORITE ALTERATION ZONE	
		Pale greenish (epidotized) to beige siliceous-carbonate-sericite alteration with 10% zones (10-15cm wide) with remnants of chlorite alteration as 2-10% chloritic grains & occasional darker patches; ½-1% disseminated Py & fracture fillings; a few scattered chloritic fragments 2-10 mm in size often with associated green mica; 1% scattered quartz-carbonate veinlets 1-10 mm wide at CA 15-25°, 35-45°, some with disseminated Py (see below for wider veins);

Cp	77.55	Minor Cp disseminations in 1-3 mm carbonate-quartz veinlets @ CA 15-20°; few epidotized Py blebs (≤ 2mm) in wall rocks
	78.55-78.67	Pale greenish, siliceous, sericitic alteration + 1-2% Py fractures
	78.67-78.75	Mixture of quartz-carbonate vein with sericite ± Epidote? shreds ± ½-1% disseminated Py ± a few Py fractures, Vein contacts ± foliation @ about CA 40°
	78.75-78.85	Pale greenish, epidotized siliceous, sericitic, carbonated (+/-) alteration with a few quartz-carbonate veinlets ± minor Py
	78.85-79.05	Quartz-carbonate vein with irregular boundaries containing rags to angular fragments of pale green siliceous, sericitic altered rock ± ½% disseminations & fractures with Py
	79.41-79.50	Quartz-carbonate vein @ CA 30-35° with ½-1% disseminated Py ± fracture fillings parallel to contacts; some wall rock inclusions
	79.65-79.9	Two 8-10 mm wide quartz-carbonate veinlets with some Py; veinlets @ CA 10°
	80.2	Patchy areas with chlorite spotting begin
	81.18-81.16	Quartz-carbonate vein with ½% (?) Py; contacts @ CA 20-25° ± 35°
	81.42	Quartz-carbonate vein 1.5-2.0 cm wide with minor Py and contacts at CA 30° ± 40°; Green mica in chlorite fragments @ 81.45m
	81.6-81.7	Irregular quartz-carbonate vein with 2% Py @ low angle to CA
Ca+Cp	83.71	Minor Galena + Cp in small quartz-carbonate patch near 5 mm veinlet
	84.8	Contact @ CA 55° with unit below
84.8 - 86.94	4d/	MIXED PALE/ GREEN EPIDOTIZED TO BEIGE SERICITE-SILICEOUS-CARBONATE & GREEN CHLORITE ALTERATION ZONE
		Pale green to beige alteration similar to unit above; the green-chlorite-carbonate patches to bands are darker with more chlorite ± sericite and vary from 2-15 cm in size often containing beige alteration veinlets ±/or bands within them; Trace to locally 1% Py disseminated in all rocks (½% average Py); 1-3% quartz-carbonate (+/- disseminated Py) veinlets (1-5 mm) throughout @ CA 10-20°, 30-40°, occasionally ladder-like oblique to CA
Gal-Cp	88.6	Minor Galena + Cp in Carbonate fracture filling
	86.8-86.94	Quartz-carbonate vein with fine Py fracture fillings parallel to sub-parallel upper contact @ CA 50°; near lower contact Py @ CA 70°; within vein Py fractures are oblique to vein contact @ CA 35°, 2-5°; the lower contact of vein is irregular with apophyses into unit below; ≤ 1% disseminated Py in vein ± in wall rocks; about 2% Py in vein
Cp	87.36	Minor Cp with disseminated Py in carbonate veinlet @ CA 40°

86.94-91.15	4d/ BEIGE TO SLIGHTLY PINKISH TO GREENISH SILICEOUS-CARBONATE-CHLORITE-SERICITE ALTERATION ZONE	Rock is somewhat variable in patchy silicification & carbonatization; overall color is a ~~medium~~ medium to light greenish grey with zones having a slightly beige to occasionally faint pinkish cast; approximately 5-20% chlorite as small (≤1-5mm) irregular clots, rags, spots in a pale greenish to beige to light grey ground mass of felsic minerals (feldspar(?)-quartz(?)-carbonate-sericite) some blotchy pinkish to beige carbonate ≤ 5mm in size; Trace to locally 1% disseminated Py sometimes with chloritic fractures; a few scattered, rounded-sub-rounded chloritic fragments 1-3cm in size; rock is moderately to strongly carbonatized especially near contact with diorite unit below; ½-1% quartz-carbonate veinlets (+/- Py +/- chlorite) at CA 2-10°, 15-25° 30-35° and 1-5 mm wide;
	91.15	Contact with diorite is sharp, irregular with several embayments
91.15-99.4	4e/ DIORITE-CHLORITE-CARBONATE ALTERATION	Approximately 30% mafic Rock has various shades of medium greenish grey, f.gr. (1 mm +/-), more or less equigranular; chloritized & fairly strongly carbonatized; scattered dark green, sub-angular to rounded chloritic fragments 0.5-5cm in size; Traces disseminated Py; ½-1% scattered quartz-carbonate +/- chlorite veinlets, 1-5mm wide @ CA 15-20°, 25-35°, 65-70°, sometimes anastamosing
	97.1	locally ≤1% disseminated Py
	98.75-99.4	More felsic & slightly coarser grained
99.4m (326')	END OF HOLE	
		Additional Cp observation during splitting of core
	79.29-79.32	Minor disseminated Cp in carbonate patches ≤ 5mm in size

(A)

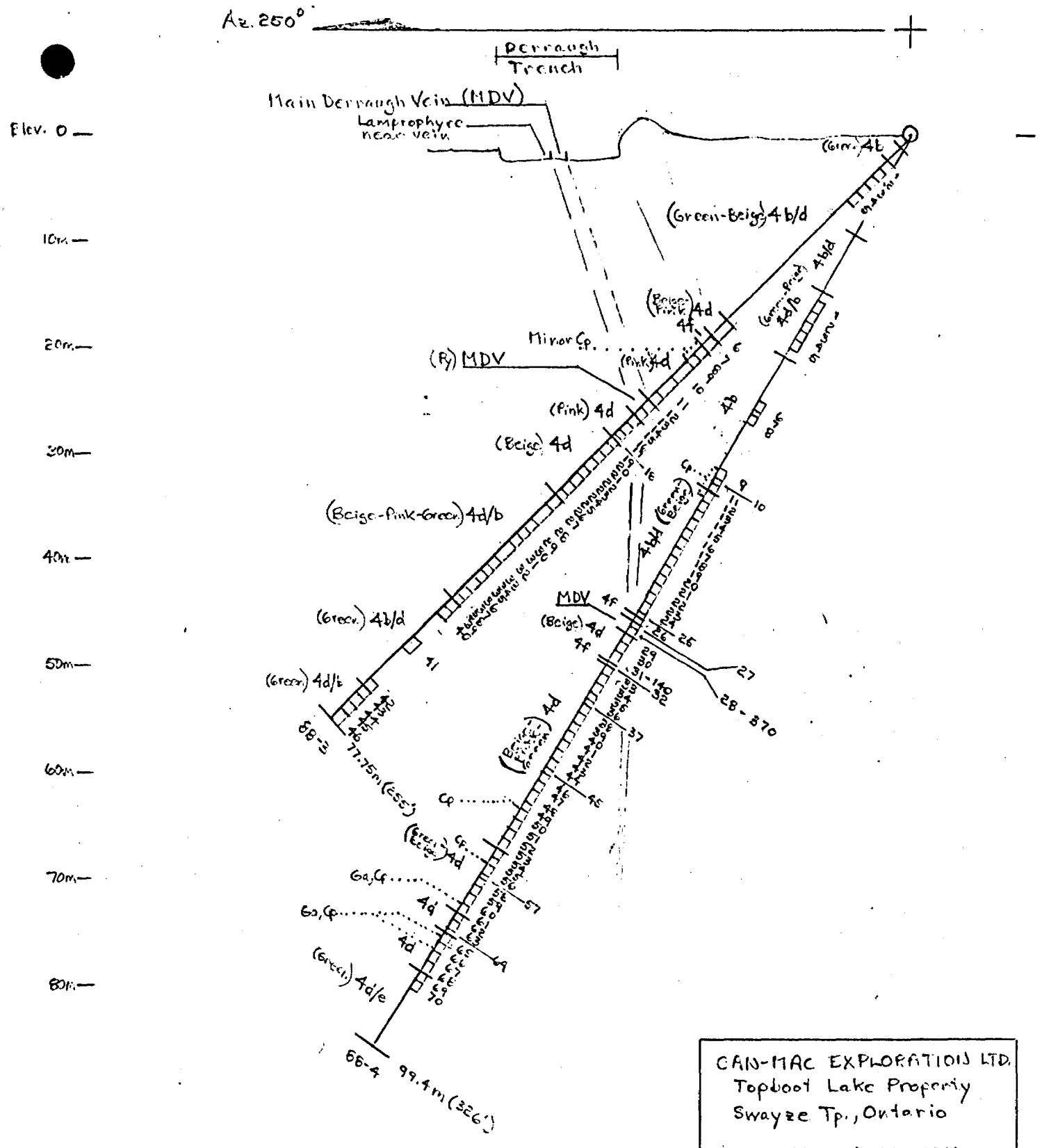
SAMPLING & ASSAYING

DDH TL 88-4

SAMPLE NO.	FROM	TO	LENGTH (meters)	Au(ppb)
TL 88-4-1	17.8	19.0	1.2 m	10
-2	19.0	20.0	1.0	Nil
-3	20.0	21.0	1.0	10
-4	21.0	22.0	1.0	10
-5	22.0	23.1	1.1 m	Nil
-6	28.5	29.5	1.0m	Nil
-7	29.5	29.8	0.3	Nil
-8	29.8	30.8	1.0	Nil
-9	36.0	37.0	1.0m	Nil
-10	37.0	37.5	0.5	Nil
-11	37.5	38.5	1.0	Nil
-12	38.5	39.5	1.0	Nil
-13	39.5	40.5	1.0	Nil
-14	40.5	41.5	1.0	Nil
-15	41.5	42.5	1.0	Nil
-16	42.5	43.5	1.0	20
-17	43.5	44.5	1.0	Nil
-18	44.5	45.5	1.0	Nil
-19	45.5	46.5	1.0	Nil
-20	46.5	47.5	1.0	Nil
-21	47.5	48.5	1.0	NIL
-22	48.5	49.5	1.0	NIL
-23	49.5	50.5	1.0	NIL
-24	50.5	51.5	1.0	NIL
-25	51.5	52.0	0.5	60
-26	52.0	52.55	0.5	NIL
-27	52.55	53.40	0.85	NIL
-28	53.40	54.00	0.6	370/270
-29	54.0	56.0	1.0	130
-30	55.0	56.0	1.0	40
-31	56.0	57.2	1.2	90/140
-32	57.2	57.5	0.3	Nil
-33	57.5	58.5	1.0	Nil
-34	58.5	59.5	1.0	Nil
-35	59.5	60.5	1.0	10
-36	60.5	61.2	0.7	Nil
-37	61.2	61.7	0.5	Nil
-38	61.7	62.7	1.0	Nil
-39	62.7	63.7	1.0	Nil
-40	63.7	64.7	1.0	Nil
-41	64.7	65.7	1.0	Nil
-42	65.7	66.7	1.0	Nil

SAMPLING & ASSAYING ctd.

SAMPLE NO.	FROM	TO	LENGTH (meters)	Au (ppb)
TL88-4-43	66.7	67.7	1.0 m	Nil
-44	67.7	68.7	1.0m	Nil
-45	68.7	69.3	0.6 m	40/20
-46	69.3	70.3	1.0 m	Nil
-47	70.3	71.3	1.0	Nil
-48	71.3	72.5	1.2	Nil
-49	72.5	73.5	1.0	Nil
-50	73.5	74.5	1.0	Nil
-51	74.5	75.5	1.0	Nil
-52	75.5	76.5	1.0	Nil
-53	76.5	77.5	1.0	Nil
-54	77.5	78.55	1.05	Nil
-55	78.55	79.50	0.95	70/90
-56	79.50	80.5	1.0	Nil
-57	80.5	81.0	0.5	Nil
-58	81.0	81.7	0.7	Nil
-59	81.7	82.7	1.0	Nil
-60	82.7	83.7	1.0	10
-61	83.7	84.8	1.1	20
-62	84.8	85.52	0.72	Nil
-63	86.52	86.52	1.0	10
-64	86.52	87.02	0.5	50/60
-65	87.02	88.0	0.98	10
-66	88.0	89.0	1.0	Nil
-67	89.0	90.0	1.0	Nil
-68	90.0	91.15	1.15	Nil
-69	91.15	92.15	1.0	Nil
-70	92.15	93.15	1.0	10



CAN-MAC EXPLORATION LTD.
Topboot Lake Property
Swayze Tp., Ontario

SECTION THROUGH
D.D.H. TL88-3 & TL88-4
(Derraugh Vein)

Scale - 1:500

Date: July, 1988

Geological Engineering Services
F.H.T.

DDH #: TL 88-5
DIP: -45°
AZIMUTH:
LOCATION: TOPBOOT LAKE, SWAYZE TP. (Derraugh Trench); Claim 932196; Approximately Line 0D+62 m W / 6+93 mS
ELEVATION: 3-4 m above vein in Derraugh Trench & 2m above 88-1
STARTED: July 30, 1988
STOPPED: July 31, 1988
COMPANY: CAN-MAC EXPLORATION LTD
PROPERTY: TOPBOOT LAKE
CONTRACTOR: Les Entreprises Jacques Rousseau, Rouyn, Quebec
LOGGED BY: Frank H. Toews
DEPTH: 71.96 meters (236 feet)
CORE SIZE: BQ
DIP TESTS: 71.96m (236') -43½°

Casing pulled

0 - 0.91 m (0 - 3')	CASING	
0.91 - 7.0	Ad/ BEIGE-PALE	GREEN SERICITE - CARBONATE - CHLORITE ± SILICIFICATION ALTERATION ZONE
		Rocks have beige to pale green sericite - carbonate - feldspar groundmass with variable (0-10%) chlorite mainly as small clots, rags & occasionally a small (1 cm) patch of chlorite-rich material; the chlorite rags or streaks are often aligned parallel to the foliation @ CA 20-35° where present; carbonatization is pervasive from weak to relatively strong in the lower part of unit; silicification is variable being more extensive in the upper part of unit; F.gr. disseminated Py is present as Trace to locally ½% over ≤ 10cm, mainly in wall rocks & minor amounts in some quartz-carbonate veinlets; locally see possible pale greenish, 1 mm +/-, anhedral plagioclase phenos; Quartz-carbonate +/- chlorite veinlets, 1-5 mm wide mainly, often irregular, anastomosing & sometimes deformed, are scattered throughout in amounts of ½% - 5% locally over 15-20 cm.; a few veins are 1-2 cm wide; veinlets are oriented @ CA 10-15°, 25-30°, 50-55°, 65-70° & also sub-parallel to CA; veinlets often cross-cut foliation when present; contact is gradational
0.91 - 2.0 m		Broken core, some re-drilled pieces; G.C. approximately 25 cm; some of the BC due to oxidized vuggy carbonate-quartz veinlets @ CA 2-15°, 60-70°; some foliation @ CA 25-35°
2.0 - 2.11		2.0 m - some pieces of broken Quartz-carbonate vein Quartz-carbonate veinlet 1 cm wide along one side of core Some oxidation; minor Py; wall rocks silicified & have ½% Py

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	2.75 m	Possible plagioclase phenos.
	4.62	1 cm Quartz-carbonate veinlet @ CA 20-30°; minor Py
	5.28-5.48	Several 1-2 cm wide Quartz-carbonate veinlets plus Silica-carbonate flooding & brecciation of wall rocks; one central relatively good "vein" @ CA 65°; contacts of zone are @ CA 55° & 35° (oblique to each other) Minor chloritic fractures; Traces of Py
	5.64-6.05	3% Quartz-carbonate +/- chlorite veinlets irregular @ CA 25-50°; veinlets cut foliation (@ CA 30-35°) and are also partly offset by it; at offsets get chlorite concentrated in places; ≤ ½% Py in wall rocks; some carbonate is oxidized near oxidized chloritic fracture @ CA 25° @ 5.9 m
	6.0-6.5	Foliation @ CA 20-30°
7.0-15.15 m	4d/b GREEN ALTERATION ZONE	SERICITE-CHLORITE-SILICEOUS-CARBONATE-EPIDOTE (Epidote in part) Rocks are medium greenish-grey to pale green to locally somewhat beige; light greenish-grey to pale green f.gr. sericitic siliceous carbonate groundmass with clots, rags & patches (≤ 10 cm) of chloritic carbonate material, sometimes showing anhedral to rounded plagioclase phenos ≤ 1 mm.; the groundmass also occurs as bands (≤ 10 cm) @ CA 25-30°, 50-60°; Trace-½% of f.gr. disseminated Py; occasional rounded chloritic fragment 1-3 cm size; scattered 1-5 mm carbonate-quartz veinlets-gashes (occasional local halo)
	7.9-11.95	3-5% carbonate-quartz veinlets & gashes @ CA 60-70°, 50-55°, & 35-45°, 15-25°; cut all rocks; barren of sulfide
	10.35-10.90 & 11.87-11.95	vuggy barren oxidized quartz-carbonate veinlets as before
	12.8-13.8	Less than ½% to locally 2% disseminated Py + occasional fracture CA 25°
	13.80-13.88	Shear zone @ CA 35-40° & 45-50°; partly oxidized, sericite-chlorite-carbonate with ½% disseminated Py; (Some G.C. here); few quartz-carbonate veinlets & gashes parallel to cross-cutting foliation; one is partly folded; a few gashes sub-perpendicular to the lower contact & cross-cutting the foliation (CA 45°) in the wall rocks below shear zone.
	13.88-14.05	Foliated (shear) @ CA 45-50°; oxidized @ 14.02 m, Trace to ½% disseminated Py
	12.65-15.02	Foliation @ CA 25-30°; in places appears to be cut by groundmass alteration bands @ CA 60°
	15.05-15.15	More siliceous & more epidote(?); cut by carbonate veinlets
	15.15	Very irregular sharp contact @ about CA 35°.
15.15-27.48	4b/d GREEN	CHLORITE-CARBONATE-SERICITE ALTERATION ZONE
		Medium to light greenish-grey; relatively massive; f.gr.

		with local zones of pale greenish to beige? alteration patches & bands ½ to locally 3-5% carbonate-quartz ± chlorite veinlets, 1-5mm wide @ CA 60-70°, 5-15°, 30-35°; local Py disseminated & fracture filling; carbonate is pervasive but variable
	15.15 - 17.94	Darker, greenish-grey, more chloritic with scattered remnant greenish sericitic, angular to rounded plagioclase phenos ≤ 3mm in size; rock gradually becomes a lighter shade of greenish-grey, & more sericitic(?) 17.7 - 17.94 pale greenish, somewhat banded to patchy sericitic, more siliceous alteration with several quartz-carbonate ± chlorite veinlets ≤ 5 mm wide, @ CA 50-55°, 65° 15-20°, 30-35°
(Good 4c-porphyry)	17.94 - 19.7 (4b)	Rock gradually becomes light greenish grey with ≤ 20% greenish, sericitic plagioclase phenos which are 1-2 mm in size, rounded, faint to fairly visible; occasional chloritic fragment 0.5-2.0 cm in size 18.65 - 19.1 ≤ 1% Py as small blebs, disseminations often in or adjacent to quartz-carbonate-chlorite veinlets (± pale green alteration haloes) @ CA 20-25°, 35-40°
	19.7	Contact is fairly sharp but irregular @ about CA 25-30° with section below
	19.7 - 20.4	Similar to 7.0 - 15.15m (4d/b); several quartz-carbonate-chlorite ± Py veinlets 3-10 mm wide @ CA 20, 50 & 70° plus few 1-2 mm wide carbonate-quartz veinlets & gashes @ CA 15-25°, 35-40°; ½% Py as disseminations & occasional fracture filling @ CA 15°; 20.2 m - fracture with chlorite-carbonate-epidote(?) irregular but sub-parallel to CA, continuous to 20.77 m; gradational lower contact
	20.4 - 27.48	Similar to 15.15 - 17.94; 2% carbonate-quartz veinlets & gashes 1-2 mm wide @ CA 55-65°, 30-40°, 15-25° 23.0 - 24.42 carbonate-quartz veinlet 2 mm wide @ CA 0-10° with bleaching halo; veinlet cross-cuts other carbonate-quartz veinlets & gashes; 22.84 bleb Py, 1 cm long 23.71 quartz-carbonate chlorite veinlet 5 mm wide @ CA 60° with bleaching 25.06 quartz-carbonate chlorite veinlet 1 cm wide @ CA 65° with bleaching 25.65 quartz-carbonate chlorite veinlet 5-10 mm wide @ CA 40° with bleaching; chlorite parallels & cross-cuts veinlet Rock gradational into unit below; difficult to delineate a contact
27.48 - 33.2	4d/b GREEN	CHLORITE-CARBONATE-SERICITE ALTERATION ZONE
		Darker to medium greenish-grey; matrix or ground mass

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(more sericitic?)
becomes increasingly lighter greenish in proportion to the darker patchy chloritic material which also occurs as rags & spots; patches ≤ 4cm with some remnant plagioclase phenos visible; 1-2% carbonate-quartz ± quartz-carbonate-chlorite veinlets & gashes 1-5mm, cut all phases of alteration @ CA 50-60°, 15-25°, 30-35°; Traces of Py

28.5-28.85 1-2 mm quartz-carbonate veinlets @ CA 5-10° with bleaching halo, in places appears to be cut by carbonate-quartz veinlets @ CA 50-60°

32.95-33.0 minor disseminated Py associated with carbonate veinlet wall rock & chloritic patch

Cp 30.36 Py, Cp on margin of 5mm quartz-carbonate veinlet @ CA 35-40°

30.53-31.3 Chlorite ± carbonate fracture @ CA 0-10° with Py ± Cp

33.2 contact: gradational

33.2 - 36.3 | 4d/b | PALE GREENISH (EPIDOTIZED IN PART) TO SLIGHTLY BEIGE SILICEOUS -CARBONATE-SERICITE-CHLORITE ALTERATION ZONE

Pale greenish (Epidotized) to slightly beige, f.gr. altered groundmass containing 20-25% patchy bands (≤ 20cm) and patches (≤ 5cm) of dark-med. green-grey chloritic ± carbonate material, some with distinct to feint sub-angular to rounded slightly greenish plagioclase phenos 1-4 mm in size; also chlorite spotting; 1% quartz-carbonate ± chlorite & carbonate-quartz veinlets & gashes 1-5 mm wide @ CA 20-25°, 40-50°, 60° cut all alteration; the groundmass is variably siliceous; Trace to locally 1% disseminated & small blebs & fracture fillings of Py, partly associated with wall rocks & quartz-carbonate veinlets, partly with chloritic alteration & also in the groundmass; Py grains ≤ 1 mm size; a few of the pyritic fracture fillings (@ CA 35-45°) appear to cross-cut some of the quartz-carbonate-chlorite veinlets around 35.7 m

Cp 35.3 Minor Cp with 1% disseminated Py in chloritic veinlet @ CA 20° & wall-rocks

36.3 Contact fairly distinct but very locally gradational @ CA 25° with 1% disseminated Py oriented parallel to contact & a Pyritic fracture filling @ CA 30-35° oriented oblique to the contact within 1 cm of the unit below.

36.3 - 47.9 | 4b/d | GREENISH-GREY SERICITE-CARBONATE-CHLORITE ALTERED PORPHYRY WITH BEIGE-PALE GREENISH SILICEOUS CARBONATE ALTERATION

Medium to light greenish-grey sericitic ± carbonate ± chlorite ground mass with up to 25% rounded to occasionally sub-angular, slightly greenish plagioclase phenos 1-6 mm in size & appearing feint to quite distinct; scattered rounded to angular chloritic fragments 0.5-2 cm in size occasionally with a 1 mm

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	≤5%	wide reaction rim; ≤ ½% fragments (one is felsic) bands throughout of pale greenish to beige siliceous carbonate up to 27 cm wide in one case, but mainly 0.2-3cm wide often cored by 1-5mm wide quartz-carbonate ± chlorite veinlets which occasionally can be seen to cross-cut the alteration bands; Trace to locally (≤10cm) 2-3% Py as disseminations & fracture fillings in the host rock, the alteration bands & associated with some of the quartz-carbonate veinlets; in the vicinity of 43.15 m minor disseminated Cp + Py is also found in or adjacent to a couple of quartz-carbonate-chlorite veinlets; 1-5% quartz-carbonate ± chlorite veinlets are @ CA 55-65°, 40-50°, 30-35°, 15°; pyritic fracture fillings can also be found in these orientations; ½-1% Py on avage
Cp	37.7	Pale greenish to beige alteration band 2-3 cm wide @ CA 15° containing sub-parallel to crosscutting quartz-carbonate-chlorite veinlet 3-5 mm wide; also 2-3 mm wide veinlet ± Py @ CA 30° cross-cuts alteration band; ≤1% disseminated Py within band and in wall rocks
	38.5-38.77	Similar alteration band to 37.7m with 3 cm wide quartz-carbonate-chlorite veinlet @ CA 55-60° containing wall rock fragments & some disseminated Py plus fracture fillings with chlorite-Py; alteration band contains one hazy, feint porphyritic patch-band and 1-2% Py as disseminations & fracture fillings @ CA 40°, 70°, 50° as well as several other quartz-carbonate-chlorite veinlets 1-2 mm wide; upper hazy contact of band @ CA 50-55°; lower contact hazy (plus offshoot) @ CA 60-65° which is cross-cut by Py veinlet @ CA 45° (Py veinlet also cross-cuts a 1-2 mm wide quartz-carbonate-chlorite veinlet @ CA 60° near lower contact)
Cp 39.7m	39.45-40.25	1 mm quartz-carbonate veinlet sub-parallel to CA with beige halo intersecting 10+ alteration bands 0.5-3 cm wide with quartz-carbonate ± Py cores @ CA 60-70°; at 39.46 m a 3cm-wide band contains quartz-carbonate-chlorite veinlet 2-3 mm wide with Py & an adjacent 1 cm. long fragment altered to green mica & Py in fractures in the fragment
	40.8-41.3	12 (+/-) Pyritic fractures ± Chlorite cut some alteration bands & quartz-carbonate veinlets.
	41.95-43.1	Scattered Py-chlorite fractures
Cp	43.1-43.25	Several 2-5 mm wide quartz-carbonate-chlorite-pyrite veinlets & gashes @ CA 25°; 60-70° & irregular; one @ CA 25° & one @ CA 70° also contain several Cp grains, ½-1% Py in fractures & dissiminations in zone wall rocks

	43.25-47.9	Distinct plagioclase phenos are often in more patchy to banded zones 10-20 cm in length with feint to non-existant phenos in the intervening areas; quartz-carbonate veinlets decreasing to ½-2% locally; still have Trace to 1% Py as disseminations & scattered fracture fillings +/- chlorite @ CA 25-35°, 40-50°, 60°, 70°, 85°; scattered beige to pink-pale greenish alteration bands 2 mm to several cm wide +/- quartz-carbonate cores @ CA 50-60°, 70, 20-25° (Cp) 45.2-45.3 Chlorite-sericite-epidote fracture @ CA 5° with Cp, Py smear 45.95 Rounded f.gr. felsic fragment with chlorite flecks & 1 mm chloritic reaction rim, partly cut by quartz veinlet 47.9 Gradational Contact
47.9-53.40	4d/ PINK-BEIGE SILICEOUS-CARBONATE-SERICITE ± CHLORITE ALTERATION ZONE	Pale pink to beige, pervasive but variable siliceous-carbonate alteration as bands, patchy to more massive zones (≤ 2 m size) containing remnant hazy patches (≤ 10 cm) of medium to light grey-greenish-grey porphyritic rock with fairly distinct to feint, rounded to occasionaly sub-angular, white to slightly greenish plagioclase phenos 1-2 mm in size & up to 20% by volume in a f.gr. groundmass; <1% scattered, rounded to sub-angular chloritic fragments <1 to 3 cm in size; 1-3% quartz-carbonate +/- chlorite veinlets & gashes 1-5 mm wide, uniform to more irregular in shape @ CA 65-75°, 45-50°, 25-35°, 5-10°, sometimes forming stockworks of narrow veinlets; ½-1% (locally) disseminated & fracture fillings (+/- chlorite) of Py sometimes occurring as small blebs (≤ 5 mm); Pyritic fractures @ CA 55-60°, 35-45°, 20-25°; Shear zone, 5 cm wide at contact with Main Derraugh Vein
	47.9-49.0	More banded to anastomosing veins of pink-beige siliceous-carbonate alteration which is not always cored by quartz-carbonate +/- chlorite veinlets; this leaves patches of porphyritic rock with medium to light greenish-grey to light grey rock; Sometimes plagioclase phenos fairly distinct in the siliceous-carbonate alteration bands; occasional wider quartz-carbonate veinlet contains small angular fragments of altered wall-rocks; Trace to ½% Py as disseminations & fracture fillings
	49.0-50.65	Near massive, beige, with few vague grey faintly porphyritic patches several cm in size; few scattered

	↙	chloritic fragments; ≤1% quartz-carbonate veinlets ± gashes; some plagioclase phenos still visible in parts of beige groundmass; ½% disseminated ± fracture fillings with Py; occasional spot of green mica
		49 – 49.8 5% clear rounded quartz grains 1-2 mm in size
		49.3 4 cm patch of quartz-carbonate ± Py with apophyses; green mica associated with pyritic fracture adjacent
		50.55 – 50.65 2% Py disseminated; 1 mm(±) size grains
	50.65 – 52.9	Patchy light greyish areas with plagioclase phenos visible; 1-2% quartz-carbonate ± chlorite veinlets, gashes; ½% Py disseminated plus fracture fillings; few chloritic fragments
CL	52.9 – 53.35	Appears more pinkish; cataclastic; upper contact about @ CA 80° where chloritic fractures (+ Py) brecciate rock + quartz veinlets over 1 cm width; some feint plagioclase phenos visible in patches; ½-1% disseminated Py ± Cp ± in fractures @ CA 15-40°; 2-3% ≤ 2 mm quartz-carbonate gashes ± veinlets @ CA 30-70°; may be some silica flooding; rock more siliceous within 7 cm of shear zone below; rock part of vein?
	53.35 – 53.40	Shear Zone - Medium to light greenish-grey, cataclastic, with felsic fragments ≤1 mm to occasionaly 1 cm; fragments are rounded to ovoid to angular set in a wispy matrix of chlorite, very pale yellowish-green sericite ± epidote(?) threads; some fine disseminated Py ± Cp; rock is foliated @ CA 65°-50° which deforms and offsets some irregular quartz-carbonate veinlets 1-3 mm wide ± which appear to cross-cut the foliation which in turn cross-cuts the veinlets; upper contact of shear zone is regular @ CA 70° while lower contact is more irregular @ about CA 50°-60°; some of the fine sericitic-epidote(?)-chloritic threads penetrate the contact & enter the Main Derrough Vein below
53.40 – 53.96	MAIN DERRAUGH VEIN ZONE	
	53.40 – 53.66	No quartz vein proper but extensive, white-grey patchy quartz flooding with pinkish to beige alteration patches & clots; fine crackle fracture fillings of carbonate ± chlorite; fine, pale green, wispy sericitic shears impart a foliation @ CA 20-45° in places; ½% to locally 1% disseminated Py, < 1 mm to 2 mm size grains; lower contact @ about CA 65° (broken core)
	53.66 – 53.71	Pale yellow quartz vein: originally white quartz (+ feldspar?) now

		altered to a pale yellow color due to patchy staining by pale yellow Epidote (?); vein is shattered by 5% anastamosing, late quartz +/- chlorite veinlets, ≤ 1m. wide & in the lower part by very fine ragged, horsetail-like, chloritic veinlets emanating from the brecciated zone below; Contact about CA 65°
Mainly Wallrock (?) ↓ Cp	53.71 - 53.74	Quartz + pale yellowish Epidote alteration similar but softer than above and with fine black chlorite spotting; in addition the quartz is finely brecciated by numerous fine black, anastamosing chlorite veinlets & cut by ~10% wispy threads of pale yellowish Epidote; a gross foliation results @ about CA 65-70°; some carbonate present
	53.74 - 53.88	Similar to 53.71-53.74 but chlorite veinlets less dense, host rock is felsic & siliceous to 53.78 (quartz + feldspar (?) + some carbonate) with an overall pale yellowish-grey color & cataclastic appearance with a gross foliation @ about CA 50°; pale yellowish, wispy Epidote threads throughout; rock is cut by 5-10%, 1-2mm to locally 5mm wide white quartz & carbonate +/- chlorite veinlets (possibly of more than one generation) some of which are regular @ CA 30° and others irregular, somewhat ptygmatically deformed (possibly along foliation planes) @ about CA 15° (earlier phase of veining ?); a 2-5 mm wide, white quartz veinlet with some transverse chlorite fracturing occurs along the contact with unit below; this veinlet is partly broken up & an apophyses ≤ 1mm wide @ CA 70° crosses the contact which appears to be partly gradational
	53.88 - 53.98	Rock is more homogeneous, felsic (Qz + Fsp. + Carb), f.gr.; foliated @ about CA 55° (oblique to lower contact); light-medium, patchy grey with a pale yellowish cast due to Epidotization as very fine shreds of pale yellow epidote & some coarser apple-green epidote; chlorite is also present as very fine fractures & peppering; few flakes of sericite; several 1≤2 mm white quartz-chlorite veinlets @ CA 60° & 2-5° & one tapered, 12 mm long translucent quartz veinlet ≤ 1 mm wide parallel to CA 60° veinlets & containing f.gr. Galena & minor Cp
Wide Ga + Cp		53.98m: lower contact sharp @ CA 75° with white-grey quartz-carbonate veinlet occupying most of contact with pink alteration zone below; pale yellowish Epidote selvage along contact as well as minor Py; few shreds of pale yellow epidote penetrate pink alteration zone adjacent to contact
53.98 - 54.76	4d/	PINKISH SILICEOUS-CARBONATE ALTERATION ZONE
		Pinkish-grey cast with patchy to banded slightly deeper pink siliceous-carbonate alteration; some

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		chloritic spots; some feint to fairly distinct, rounded white to beige-pinkish plagioclase phenos, 1-4 mm in size in patchy areas; pink bands up to 3 cm wide are oriented @ CA 15-25 with some 1-2 mm oblique pink veinlets @ CA 40°; 1-2 mm wide quartz-carbonate ± chlorite veinlets parrallel & cross-cut the bands as well as the pink veinlets; quartz-carbonate veinlets (<5%) are @ CA 15-25°, 50-55°, 35-40°; some are gashes; ½% to locally 2% Py is disseminated in all rocks sometimes in chlorite ± epidote ± sericite fractures @ CA 20°, 30°, 55-60°
	54.76	gradational contact
54.76 - 57.53	4d/ BEIGE	SILICEOUS-CARBONATE-SERICITE-CHLORITE ALTERATION ZONE (in altered porphyritic Diorite?)
		Patchy to banded beige to slightly pinkish siliceous-carbonate alteration in a light to medium greenish-grey rock (diorite?) with 5% (?) spots & occasionally acicular blades of chlorite (after amphibole?) up to 2 mm long along with feint white to beige rounded to sub-angular plagioclase phenocrysts 1-4 mm in size in a f.gr felsic matrix with sericite; alteration bands are @ CA 2-15°, 40-55°, cored by & cut by 3% quartz-carbonate veinlets <1 to 3 mm wide; the alteration bands are often intersecting; Py is disseminated in all rocks; occasionally in quartz-carbonate veinlets in amounts of <½% to locally 1%;
Cu-Py	55.45	Disseminated Py & a coating of Galena partly covers a fracture @ CA 15° with some chlorite & sericite near the intersection with another conjugate fracture ± quartz-carbonate @ CA 15°; the first fracture is along an apophyses of the beige alteration zone below
	55.53-56.85	Beige alteration zone with patches of host rock; zone is probably sub-parallel to CA; Trace to locally 1% disseminated Py; zone cut by 2-3% quartz-carbonate veinlets, 1-2 mm wide @ CA 40-50°; some Sericite-Epidote fractures @ CA 15-25°; lower contact is a band <1 cm wide sub-parallel to CA with cross-branches & which extends to 57.1 m
	57.4-57.53	Beige alteration band with hazy boundaries @ about CA 55° with ≤5 mm wide quartz-carbonate veinlet @ about CA 60°; band contains patch of host rock; <1% disseminated Py in band, minor Py in veinlet and several chlorite-pyrite fractures @ CA 45°, 60-65° one of which appears to be cut by quartz-carbonate veinlet & another enters unit below
	57.53	Somewhat gradational contact

TL88-5

57.55-63.65	4d/e CARBONATE-CHLORITE-SERICITE ALTERED ZONE (IN? DIORITE - PORPHYRITIC) WITH	SOME SILICEOUS-CARBONATE ALTERATION
		Medium greenish-grey carbonatized (variable, pervasive) with 5% chlorite spotting & sometimes acicular (after hornblende?); scattered beige to pale greenish, rounded plagioclase phenos ≤5mm in a f.gr. matrix of plagioclase & sericite; local beige siliceous carbonate alteration; scattered rounded chloritic (+/- Py) fragments 0.3-1cm & occasionally 3cm; 1% to locally 5% quartz-carbonate +/- chlorite +/- Py veinlets 1-5 mm in size @ CA 30-40°, 50-60°, 15-25°; Py is disseminated & can occur with chloritic fractures @ CA 50-55°, 35-45°; ½% to locally 2% Py
	57.75	Py fracture @ CA 75°, ≤1 mm wide
	57.8-58.2	About 20 carbonate-quartz veinlets <1 to 2 mm wide @ CA 50-60°; at 58.1 m a conjugate(?) veinlet 2-5 mm wide @ CA 60-65° cross-cuts several of the previous set; this veinlet & the immediate wall rocks contain about 15% Py blebs, disseminations
	58.6-58.8	Several 1-2 mm veinlets of beige alteration @ CA 2-15°
	59.85	Quartz-carbonate veinlet 8-20 mm wide @ CA 55-60 with angular wall-rock inclusions; minor disseminated Py which may be related to a fracture sub-parrallel to CA which the veinlet cuts (?)
	60.65-60.8	Bands (≤6 cm wide) of beige siliceous-carbonate alteration with hazy boundaries @ CA 65°, cut by & cored by quartz-carbonate +/- chlorite veinlets 1-5 mm wide @ CA 45-55°, 65-75°, ½% disseminated Py & also in a cross-cutting chloritic fracture @ CA 35°; one veinlet with minor Py, Cp @ CA 70-75°
	60.95	≤1cm wide quartz-carbonate veinlet @ CA 35°
	61.65	1-2 mm Py-chlorite veinlet
	62.81-63.55	Sinuous carbonate-chlorite +/- Py + Cp(?) fracture &/or veinlet @ sub-parallel to CA; intersects a 1-5 mm wide, branching quartz-carbonate-chlorite-Py veinlet @ CA 2-20° which runs from 68.22-63.55; ½% Py blebs, dissemination in wallrocks
63.65-64.23	4d/BEIGE	SILICEOUS-CARBONATE ALTERATION ZONE
		Massive; f.gr.; beige; ½-1% disseminated Py; cut by 2-3%, ≤1mm wide quartz-carbonate +/- chlorite veinlets with some associated Py @ CA 35-50° & one sub-parallel to CA; one 5mm wide quartz-carbonate-chlorite-Py veinlet @ CA 75° with some Epidote; Py fracture filling @ CA 40° at 64.24m. Contacts are hazy @ CA 10-15° & @ 5-10°.

TL 88-5

64.23-71.96	4d/e	CARBONATE-CHLORITE-SERICITE ALTERED ZONE (IN ? DIORITE-PORPHYRITIC)
		As for 57.53-63.65 but with some darker sections
	64.53	4cm x 2cm ovoid chloritic fragment
	65.65	Py-Chlorite veinlet @ CA 30°
	65.55	1-2 mm wide quartz-carbonate-epidote(?)-Py veinlet @ CA 20-25°; may have narrow beige alteration halo
	64.73-66.52	2mm wide quartz-carbonate veinlet sub-parallel to CA
	66.08-66.65	Seven Py-Chlorite fracture fillings ≤0.5 mm wide @ CA 35-45°, 55-60°
	66.8	2-3 cm. wide Quartz-carbonate chlorite veinlet in broken core; some Epidote & disseminated Py; one contact (upper) @ CA 40-45° with Py margin in part, Epidote alteration veinlets in wall rock; plus disseminate & a fracture filling with Py @ CA 65° in wall rocks
	67.75-68.3	3-5 mm wide carbonate-quartz veinlet @ CA 10°
	71.84-71.96	Less carbonatized, more granular f.gr (1-2 mm) diorite with some plagioclase phenos ≤ 3mm; rock is predominately feldspar with chlorite-sericite in matrix; on possible hornblende pheno 2-mm size; contact is bleached compared with the medium-greenish-grey of the rock; contact @ CA 10° mainly; few Py grains
	71.96 (236')	End of Hole
		Additional Cp observations during core splitting
	39.7	Local disseminated Cp associated with chlorite in carbonate-quartz veinlet @ CA 70°
	53.71-53.74	< ½% disseminated Py, Cp
	56.8	Cp smears on contact of carbonate veinlet @ CA 45-50° & some Cp surrounds a few Py grains in wall rock
	61.79	Chloritic fracture @ CA 40-45° with disseminated Py + minor Cp

SAMPLING & ASSAYING

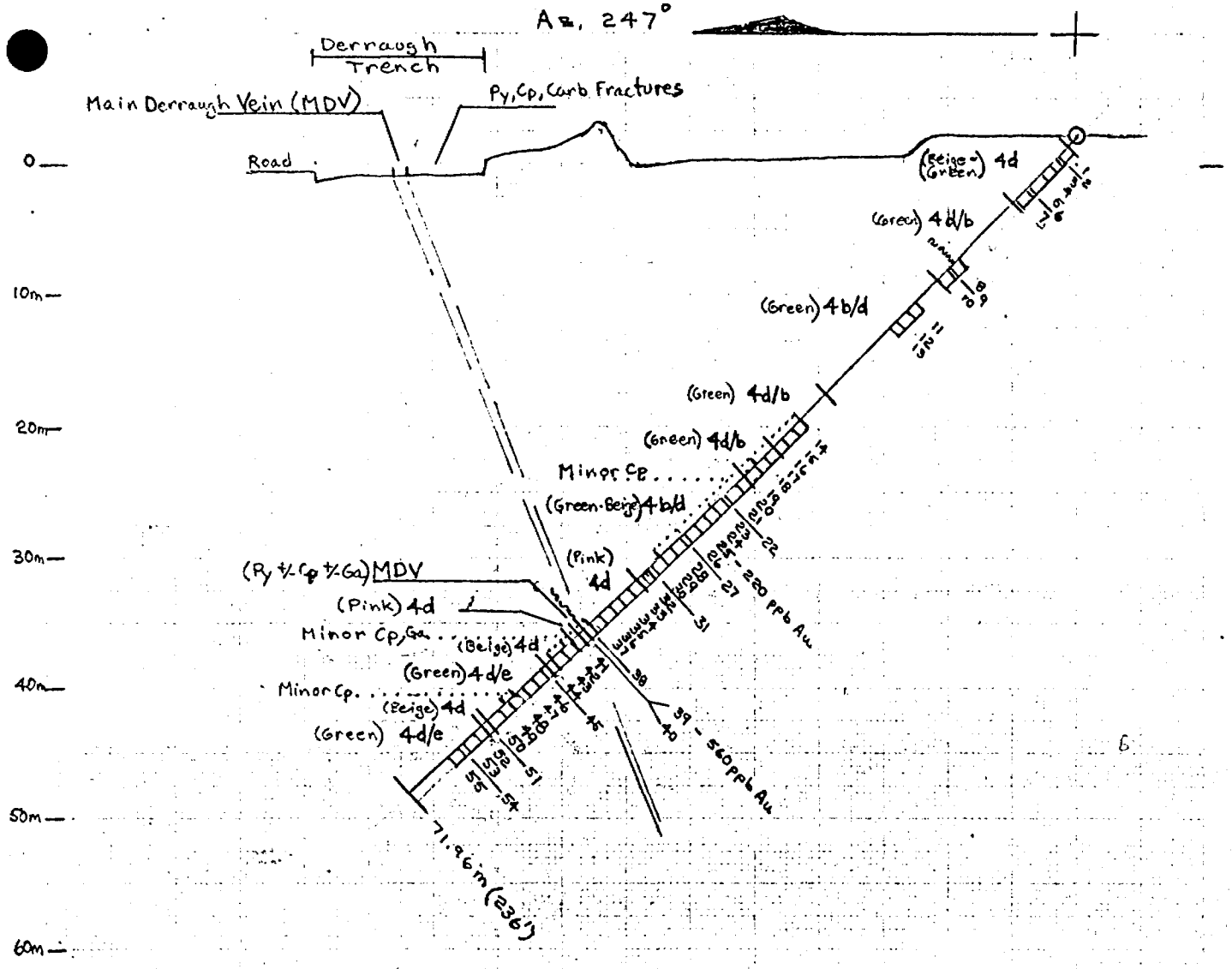
DDH * TL 88-5

SAMPLE NO.	FROM	TO	LENGTH (meters)	Au (ppb)
TL88-5-1	0.91	2.0	1.09m	
-2	2.00	2.25	0.25	
-3	2.25	3.0	0.75	
-4	3.0	4.0	1.0	
-5	4.0	5.28	1.28	
-6	5.28	5.52	0.24	
-7	5.52	6.80	1.28	
-8	12.8	13.8	1.0	
-9	13.80	14.05	0.25	
-10	14.05	15.15	1.10	
-11	17.6	18.6	1.0	
-12	18.6	19.7	1.1	
-13	19.7	20.5	0.8	
-14	30.3	31.3	1.0	80
-15	31.3	32.3	1.0	90
-16	32.3	33.3	1.0	20
-17	33.3	34.3	1.0	Nil
-18	34.3	35.3	1.0	Nil
-19	35.3	36.3	1.0	40
-20	36.3	37.3	1.0	Nil
-21	37.3	38.5	1.2	Nil
-22	38.5	38.8	0.3	Nil
-23	38.8	39.8	1.0	Nil
-24	39.8	40.8	1.0	Nil
-25	40.8	41.8	1.0	210/220
-26	41.8	42.8	1.0	
-27	42.8	43.3	0.5	
-28	43.3	44.3	1.0	
-29	44.3	45.3	1.0	Nil
-30	45.3	46.3	1.0	Nil
-31	46.3	46.9	0.6	Nil
-32	46.9	47.9	1.0	Nil
-33	47.9	48.9	1.0	Nil
-34	48.9	49.9	1.0	Nil
-35	49.9	50.9	1.0	Nil
-36	50.9	51.9	1.0	Nil
-37	51.9	52.9	1.0	Nil
-38	52.9	53.4	0.5	Nil
-39	53.4	53.71	0.31	480/560
-40	53.71	53.96	0.25	Nil
-41	53.96	55.0	1.04	50
-42	55.0	56.0	1.0	Nil

SAMPLING & ASSAYING

DDH * TL 88-5, ctd.

SAMPLE NO.	FROM.	TO	LENGTH (meters)	Au (ppb)
TLBB-5-43	56.0	57.0	1.0 m	Nil
-44	57.0	57.53	0.53	Nil
-45	57.53	58.2	0.67	Nil
-46	58.2	59.2	1.0	Nil
-47	59.2	60.2	1.0	Nil
-48	60.2	61.70	1.50	Nil
-49	61.70	62.65	0.95	Nil
-50	62.65	63.65	1.0	20
-51	63.65	64.23	0.58	Nil
-52	64.23	65.30	1.07	10
-53	65.3	66.4	1.1	30
-54	66.4	67.0	0.6	Nil
-55	67.0	68.1	1.1	Nil



CAN-MAC EXPLORATION LTD.
Topboot Lake Property
Swayze Tp., Ontario

SECTION THROUGH
D.D.H. TL88-5
(Derraugh Vein)

Scale - 1:500

Date: July, 1988

Geological Engineering Services
F.H.T.

DDH #: TL 88-6
DIP: -47½°
AZIMUTH: 245°
LOCATION: TOPBOOT LAKE, SWAYZE TP. (Derraugh Trench); Claim 932196
Approximately Line 00+50mW/ 6+14mS
ELEVATION: ~Same Elevation as vein in Derraugh Trench & ~3 meters below TL88-3
STARTED: August 1, 1988
STOPPED: August 2, 1988
COMPANY: CAN-MAC EXPLORATION LTD.
PROPERTY: TOPBOOT LAKE
CONTRACTOR: Les Entreprises Jacque Rousseau, Rouyn, Quebec
LOGGED BY: Frank H. Toews
DEPTH: 102.64m (336.7')
CORE SIZE: BQ
DIP TESTS: 90.25m (296') -45½°

Casing pulled

0 - 1.83m (0 - 6')	CASING	
1.83 - 3.0m	4b/	SERICITE - CARBONATE ± CHLORITE ± EPIDOTE ALTERATION ZONE IN PORPHYRY
		Medium to light greenish-grey rock with ≤ 25% white to pale green, sericitized, rounded to sub-angular, 1-3 mm plagioclase phenos, set in a f.gr. sericitic groundmass; phenos are distinct to hazy in outline; Trace to ½% disseminated Py; carbonate is pervasive but variable; Epidote is patchy
	1.83 - 2.5m	Broken core, grainy core; lower 20cm of core has oxidized fractures & carbonate-bearing veinlets @ CA 10-25°, 55-60°; some core is re-drilled
	2.5 - 3.0	Several bands of partly oxidized, beige siliceous carbonate, 0.3 - 1.0 cm wide at CA 60°, 30-35°; several oxidized fractures @ CA 20-25°, 60°; several oxidized carbonate veinlets ≤ 2 mm wide @ CA 65°, 35° the latter cutting a beige alteration band; gradational contact
3.0 - 6.165	4d/b	BEIGE TO PALE GREENISH-GREY CARBONATE ± SILICEOUS - SERICITE - CHLORITE ALTERATION ZONE
		Banded to patchy siliceous-carbonate alteration which is pale greenish-grey to beige & pervasive but variable; near contact with vein below it is slightly pinkish; Trace to locally ½%. Py
	3.0 - 3.8	Banded siliceous-carbonate alteration with 0.5 - 2.0 cm wide bands @ CA 40-50°, some cut obliquely by a few 1-3 mm quartz-carbonate veinlets @ CA 25-30°, 50°, 10°; Nil to 5% plagioclase phenos are still discernable

		in the bands of the medium to darker greenish-grey host rock & to some extent in the beige to light-pale greenish-grey alteration bands with hazy to fairly sharp boundaries; Trace Py 3.8 m - contact in broken core
	3.8 - 5.6	Patchy or more pervasive beige - pale greenish siliceous-carbonate alteration (± Epidote?) groundmass with remnant darker medium greenish-grey patches of host rock from <0.5 - 2 cm size; occasional feint plagioclase phenos visible; 1-3% quartz-carbonate ± chlorite veinlets & anastamosing gashes, 1-3 mm wide @ CA 40-50°, 70°, 25-30°; sometimes wall rocks more siliceous 3.97 m <1 to 2 mm wide Py fracture fillings & associated Py blebs, disseminations @ CA 25° cut some quartz-carbonate veinlets 5.4-5.6, contact bifurcates @ low angle to CA leaving a roughly wedge shaped portion of unit below; contact somewhat hazy
	5.6 - 6.65	Medium to light greenish-grey to pinkish near contact with vein; rock is sericitic with some Epidote, f.gr; foliated @ about CA 20-25° decreasing to about CA 15° near vein contact which is <u>oblique</u> to the foliation; ½-1%, 1-3 mm wide, quartz-carbonate veinlets @ CA 50-60°, 70°, 20-25° often deformed somewhat ptygmatically & or offset 1-3 mm along the foliation (? possibly some feint phenos?) Traces Py; occasional chloritic fragment, elongate in plane of foliation 0.3 cm to <1 cm size 6.37-6.65 m - patchy beige alteration begins, increasing from about 10 cm from vein where rock is beige-pink to pale greenish when epidote is present; several pyritic veinlets or lenses ± quartz @ CA 20° parallel to foliation & within 2-3 cm of vein contact Pyritic ± chlorite fractures parallel the vein contact @ CA 20°, plus disseminated Py; within 2 cm of vein contact are several 2-3 mm wide quartz-carbonate gashes sub-parallel to parallel to contact with disseminated & small blebs (1-3 mm) of Py; ½% to locally 3% Py nearer the contact
6.65 - 8.23	DERRAUGH	TRENCH - "VEIN NO. 2" (DTV2) Patchy to vein-like light grey to milky quartz-carbonate containing 40-60% patches & fragments (≤ 1-15 cm) of f.gr., sericitic (± epidote), pale greenish to beige siliceous-carbonate altered rock, sometimes with discernable white 1 mm plagioclase phenos; ≤½% disseminated Py (≤ 1 mm) occurs in quartz-carbonate & the fragments; at the lower contact a 1 cm wide late(?), sheared & foliated quartz-carbonate-chlorite veinlet parallels the contact @ CA 15-20° adjacent to patchy, milky quartz with fragments; ≤30% ragged, bifurcating chlorite

		Veinlets <1 to 5mm wide +/- vein and wall-rock fragments; chlorite is later, but more or parallels the contact; @ 7.02m fracture @ CA 20° with Py-Cp scales & minor Cpt
Cp-Galena		Galena (Ga) adjacent to fracture
8.23-14.2	4d/	BEIGE SERICITE-CARBONATE +/- SILICEOUS +/- CHLORITE +/- EPIDOTE ALTERATION ZONE
		Beige to slightly greenish, f.gr., sericitic, with patchy light greyish zone showing some faint to distinct, rounded, white to slightly greenish plagioclase phenos 1-3 mm in size within 1 meter of vein contact; carbonate is pervasive but variable; parts are foliated @ CA 10-25; ½-1% scattered angular to rounded chloritic fragments, <1-3 cm in size, partly altered to green mica; ½ to more locally 3-5% quartz-carbonate veinlets & gashes, 1-5 mm wide, occasionally chlorite +/- Py bearing, @ CA 15-25°, 40-55° sometimes sub-parallel to CA; veinlets are often irregular "ptygmatically" deformed &/or with small offsets, sometimes along foliation planes, which the veinlets cross-cut; generally trace to ½% disseminated Py; Gradational contact
	8.23-8.5	Foliation +/- chlorite @ CA 10° to sub parallel CA; oblique to vein contact, some slightly pinkish patches; some Epidote & green mica; ½% disseminated Py, some within quartz-carbonate +/- chlorite veinlets
	11.15-12.00	≤5% quartz-carbonate veinlets & gashes; minor Py & green mica
	13.15-14.05	½-1% disseminated, small (<5mm) blebs & fracture fillings with Py
		13.82 - 4cm chloritic fragment, foliated & oriented parallel to foliation @ CA 20°; fragment has narrow alteration rim of green mica +/- Epidote plus internal veinlet of green mica parallel to foliation
Cp		13.98 - fracture with disseminated Py + Cp @ CA 30°
14.2-20.0	4b/d	BEIGE SILICEOUS-CARBONATE-SERICITE-CHLORITE +/- EPIDOTE ALTERATION IN PORPHYRITIC ROCK
		Light to medium greenish-grey with patchy areas with rounded to hazy, 1-3 mm, white to slightly greenish plagioclase phenos in f.gr, sericitic +/- chlorite groundmass; patchy to locally banded beige carbonate-siliceous-carbonate alteration @ CA 25-45°, also as ≤1cm haloes about ¾ carbonate & quartz-carbonate +/- chlorite veinlets & gashes 1-5mm wide @ CA 25-45°, 60-70°; Scattered, rounded to angular chloritic fragments 0.5-3cm in size; Trace to locally 1% disseminated Py & occasional 2mm blebs & occasionally as quartz-carbonate-Py veinlets; Gradational contact

	14.2 - 15.6	½% - 1% disseminated Py
	14.75 - 16.4	Foliated parts @ CA 20-30°
	15.21	Py ± Cp scales on fractures @ CA 25° ± 35°
	19.85	Minor Cp on chloritic fracture filling @ CA 45°
20.0 - 30.0	4b / GREENISH-GREY CHLORITE-SERICITE-CARBONATE ALTERED PORPHYRY	
		Medium to lighter greenish grey with 20-30% relatively distinct to feint, rounded, 1-4 mm, white to slightly greenish sericitic plagioclase phenos in a f.gr. chloritic ± / or sericitic (feldspar + quartz) groundmass; carbonate is pervasive but variable; scattered, rounded to sub-angular, chloritic ± epidote fragments 0.5 - 3 cm. in size; ≤ ½% scattered, carbonate - quartz ± chlorite veinlets, 1-5 mm wide @ CA 50-60°, 70-75°, 30-40°, 15-25°; Trace - ½% disseminated Py; chlorite ± sericite ± carbonate ± epidote ± Py fractures @ CA 30-40° 45-55°, 10-15°, locally up to 8-10 / 20 cm., average 1/10 cm
	21.08	Minor Cp in carbonate fracture @ CA 45°
	21.57	1 cm chloritic fragment with disseminated Cp
	22.65 - 23.25	Chlorite ± Epidote ± Py fractures @ CA 30-45°; 8-10 / 20 cm.
	30.0	Gradational contact
30.0 - 34.5	4d / BEIGE GREY	SILICEOUS-CARBONATE ALTERATION IN LIGHT GREENISH-SERICITIC-CHLORITIC · FEINTLY PORPHYRITIC ROCK
		Patchy to banded (≤ 1 cm) beige siliceous-carbonate ± epidote alteration which also occurs as haloes about some quartz-carbonate veinlets; host rock is light greenish-grey with areas containing feint, 1-2 mm sericitic plagioclase phenos set in a f.gr. sericitic-chloritic groundmass; some quartz visible; scattered chloritic, rounded to sub-angular fragments, 0.5-5 cm in size; carbonate ± silicification variable; 1-2% scattered quartz-carbonate ± chlorite veinlets, mainly 1-3 mm wide @ CA 40-50°, 60-70°, 15-25°; scattered chloritic (± Py ± Carbonate) fractures @ CA 15-25°, 30-40°, 50-60°; Trace to locally 1% disseminated Py & some fracture fillings
	33.53	≤ 3 cm wide zone of quartz-carbonate ± Py vein with chlorite ribbons @ about CA 50-55° containing some wall rock fragments; irregular, narrow apophyses with Py ± chlorite are oriented @ about CA 10-30°; bleaching near main vein; may be some Epidote present
	37.13	8 cm chloritic fragment with ≤ 1% disseminated Py
	34.5	Gradational contact
34.5 - 45.91	4d/b BEIGE TO LIGHT GREY SILICEOUS-CARBONATE ± EPIDOTE ALTERATION IN LIGHT GREENISH-GREY TO LIGHT GREY PORPHYRITIC ROCK (DACITE)	
		Patchy to banded (≤ 10 cm) beige to light grey siliceous ±

carbonate alteration which also occurs as haloes (≤1cm) about quartz-carbonate veinlets; silicification & carbonate alteration is pervasive but variable; host rock contains < 25% feint to fairly distinct, rounded white to slightly greenish sericitic plagioclase phenos, 1-3 mm in size, set in a sericitic-chloritic f.gr. groundmass; scattered, rounded, chloritic fragments 1-14 cm long; 1-2% to locally 5% quartz-carbonate +/- chlorite veinlets often 1-5 mm wide, but occasionally 1-3 cm wide; chlorite fractures +/- Py sometimes cross-cut the veinlets which increase towards the Main Derraugh Vein & are oriented @ CA 50-65°, 70-80°, 25-35°; chloritic fractures with Py become increasingly numerous towards the Main Derraugh Vein varying in amounts from 2/10cm to ≤ 10/10cm oriented @ CA 50-60°, 35-45°, 10-25°; < ½ to 1% Py as disseminations & in chloritic fracture fillings & minor in quartz-carbonate veinlets
rocks appear cataclastic & epidotized near Main Derraugh Vein

41.0 Chloritic fractures + Py begin to increase to 8-10/10cm

43.41 1-2 cm wide quartz-carbonate veinlet @ CA 70-75° with chlorite margin & chlorite fracture filling & Py fracture filling

44.32 2-4 cm wide quartz-carbonate vein with wall rock inclusion; contacts @ CA 75-80° & CA 40°; Chlorite fractures @ CA 75-80°; disseminated Py & fracture filling @ 80° & 60° plus quartz-carbonate veinlets @ CA 60°, 30° in beige silicified zone near upper contact of vein

44.47 0.5-1.5 cm wide quartz-carbonate veinlet @ CA 30-35° partly cut by chloritic fractures @ CA 30 & 45° oblique to vein contacts

44.90 1-2 cm. wide quartz-carbonate veinlet @ CA 35-45° with wall-rock fragments; partly cut by chlorite fractures

45.42-45.55 Irregular epidote veinlets, pale yellowish-green; also a 0.5 cm wide, quartz carbonate veinlet @ CA 50° which has been disrupted by chloritic fractures @ CA 30° & sub-parallel to CA

45.55 3 cm. wide quartz-carbonate vein @ CA 60-65° with marginal epidote (vein may cut epidote veinlets oblique to quartz vein); several wall-rock inclusions; quartz vein is cut & partly offset by chloritic fractures @ CA 25° & sub-parallel to CA

45.65-45.91 Rock appears cataclastic; patchy Epidotization as fine shreds of pale yellow Epidote & also as staining on some 2-5 mm wide quartz veinlets @ CA 20-25°, 35-45, 50° & gashes sub-parallel to CA; few of the veinlets contain wall-rock inclusions & some are broken up &/or cut by irregular chloritic fractures; host rock is epidotized

		± more felsic within 5 cm of the Main Derraugh Vein with < 1% disseminated Py ± some chloritic fracture fillings @ CA 15-20° oblique to vein contact; quartz-carbonate veinlets are anastamosing ± amount to 5-10% of zone; rock appears foliated parallel to main vein contact within 1 cm of main vein
	45.91	Contact irregular to regular @ CA 30-35°
45.91-47.60	MAIN DERRAUGH VEIN	
	45.91-46.03	Milky white quartz-carbonate vein with contacts @ CA 30-35° & 45°; 5% anastamosing chlorite ± Py ± Epidote ribbons mainly oriented obliquely to contacts; some threads & veinlets of pale yellowish-green epidote; < ½% disseminated Py in quartz & chloritic ribbons
	46.03-46.05	Brecciated, cataclastic, epidotized (threads, irregular veinlets) matrix of quartz-carbonate ± chlorite; rounded, white carbonate fragments ≤ 5 mm size; foliation @ CA 45°; ½-1% disseminated Py; may be wall rock material mixed in.
	46.05-46.12	Wall-rock inclusion; medium greenish-grey; cataclastic; carbonatized; some chlorite in matrix & as late fracture fillings; some epidote (sericite) threads; contacts @ about CA 45° with epidote threads (shears) parallel; adjacent to lower contact is a segmented quartz-carbonate veinlet ≤ 1cm wide @ CA 35° which is an apophysis of the Main Derraugh Vein; late chlorite cross-fractures cut the veinlet & later pale yellowish-green epidote threads & veinlets (shears) appear to cut some of the chlorite, border the quartz-carbonate veinlet, as well as appearing to segment part of the veinlet; < ½% disseminated Py in quartz-carbonate veinlet & wall-rock inclusion; possible minor green mica in veinlet
Cp	46.12-46.23	60-70% milky to translucent quartz-carbonate with < 25% light grey to beige, f.gr, silicified fragments with quartz-carbonate veinlets; few chloritic ± Py fracture fillings irregular but oriented @ about CA 10-25° oblique to contact with wall rock inclusion above; late, pale yellowish-green epidote (± sericite (?)) network veinlets &/or staining of granulated quartz-carbonate veinlets < 1-5mm wide, appear to cut all rocks; adjacent to contact with wall rock inclusion above is < 1% fine disseminated to fine ragged fracture fillings with Cp occur over 1-cm along with Py disseminations; remainder of section has ½% disseminated Py & small fracture fillings with Py in silicified fragments & quartz-carbonate vein material.
(Cp)		

	46.23-47.20	50% milky white to translucent quartz-carbonate with about 50% light grey to beige, silicified, f.gr. fragments which are internally shattered by <1-2 mm wide quartz-carbonate veinlets; chloritic (+/- sericite) fractures with disseminated Py @ CA 50-60°, 15-30° cut all rocks; some green mica spots; Py occurs as ≤1 mm disseminations & small blebs <3 mm in size in both vein material & fragments; Py often associated with chlorite; ½% Py overall
Cp	46.93	Minor fine disseminated Cp along with Py
	47.20-47.60	Similar to above, but <15% silicified fragments; Contact with silicified vein wall rocks @ about CA 15-20° with some apophyses
47.60-48.40	4d/ BEIGE ALTERATION ZONE	TO LIGHT-MEDIUM GREY SILICEOUS-CARBONATE
		Similar to parts of unit from 34.5 - 45.91 m
	47.60 - 47.80	Beige, f.gr, pervasive silicification +/- carbonate fracture fillings as fragments in Main Derraugh Vein; 5-10% somewhat irregular quartz-carbonate veinlets <1 cm wide @ sub-parallel CA near vein & @ CA 15-30° more or less parallel to vein contact above; 8-10% late chlorite-Py +/- Sericite fractures @ CA 20-25° which cross gradational contact with rocks below & sometimes offset quartz-carbonate veinlets; ½-1% disseminated Py & small blebs ≤2 mm in size, occurs in all rocks
	47.80 - 48.40	Light-medium grey with patchy beige to slightly pinkish siliceous-carbonate alteration; possible very feint plagioclase phenos; ≤10% clear, rounded quartz grains ≤2 mm size; 3% quartz-carbonate veinlets <1 to 5 mm wide, partly anastamosing @ CA 60-70°, 30-40°, 15-20°; numerous late chlorite-Py-sericite fractures @ CA 20-30°, 40-45° & sub-parallel to CA (some offset quartz-carbonate veinlets & all would be oblique to Main Derraugh Vein contact & to contact with unit below); several small chloritic fragments; ½-1% disseminated Py
	48.40	Contact @ CA 30-35° with quartz-carbonate veinlet ≤1 cm wide @ contact

48.40-49.95	4d/b(?)	FOLIATED MEDIUM-LIGHT GREY-GREENISH GREY CHLORITE-SERICITE-CARBONATE-EPIDOTE ALTERATION ZONE
		Probably tectonically deformed & altered porphyritic rock; somewhat gradational into unit below; feint to distinct, rounded plagioclase phenos up to several mm in size are sometimes visible; rock appears cataclastic moreso in upper part of unit; rock has a patchy pale yellowish caste due to pervasive epidotization which is variable, as is carbonate alteration; several small (≤ 5mm) chloritic fragments present;
	48.4-48.85	Strongly foliated @ CA 30-35° to 15-20°; cataclastic; 5% quartz-carbonate ± chlorite veinlets 1mm-2cm wide @ CA 25-35°, 45°, 60-70° & sub-parallel to CA; veinlets cross-cut & parallel the foliation & may be deformed along the foliation planes; patchy beige silicification in vicinity of veinlets; Trace Py
	48.85-49.90	Foliation varies from CA 15-20° increasing to CA 50°; <1% quartz-carbonate veinlets, 1-3 mm wide, at CA 20-25°, 35-45°, 50-60° & 5-10° often cross-cutting foliation & sometimes deformed along foliation planes
	49.90-49.95	Partly cataclastic & more strongly foliated @ CA 50-60° & 5 mm Quartz-carbonate veinlet parallel foliation @ CA 60°.
49.95-72.6	4d/b BEIGE ZONE	SILICEOUS(± CARBONATE)-SERICITE-CHLORITE ALTERATION IN PORPHYRY
		Patchy to banded beige to occasionally slightly pinkish alteration in light to medium grey to greenish-grey feintly to distinctly porphyritic rock with up to 25% rounded, white to slightly greenish, sericitized plagioclase phenos, 1-3 mm in size set in a fgr. sericitic-chloritic groundmass; siliceous(±carbonate) alteration can be pervasive but variable, often more intense near quartz-carbonate ± veining which is found throughout in amounts varying from 1% to locally 35% (over 25cm); veinlets & gashes often 0.1-1cm wide @ CA 15-25°, 40-50°, 60-70°, 5-10°, average 2-3% quartz-carbonate veinlets; Scattered chloritic fragments 1-10 cm in size; Trace to locally 2% (over 5cm) disseminated Py in wall rocks, in quartz-carbonate veinlets & often on chlorite ± sericite ± epidote fractures @ CA 60-70°, 45-55°, 25-35°, 5-15°; average less than ½% Py
	50.04-50.22	Chloritic fractures ± Py @ CA 60-70°; quartz-carbonate veinlets @ CA 50-60°, 35-45°; some gashes of quartz-carbonate cutting 10 cm chloritic fragment with blebs of Py ≤ 1cm in size associated with quartz; more intense silicification

	near contact with quartz-carbonate vein below.
50.22-50.5	Quartz-carbonate vein with 25% wall rock inclusions; vein contacts approximately @ CA 35-45° & 15°; vein is milky white with cream to beige carbonate as patches and veinlets which partly rim fragments & vein as well as cross-cut the quartz & fragments; < ½% disseminated Py+Cp(?) in fragments & vein; silicification is more intense near vein & in fragments; some chlorite(+/- Py) fractures parallel to oblique to vein contacts in wall rocks
Cp?	
50.56	Minor Cp associated with 2-5 mm quartz-carbonate veinlet sub-parallel to 15° CA (possibly apophosis of main vein above
51.9-51.25	Quartz-carbonate vein with 50% wall rock inclusions; vein contacts @ CA 40° & 15-20° (may be oblique to vein from 50.22-50.5 m); inclusions cut by numerous veinlets of quartz-carbonate; ½% disseminated Py in inclusions & wall rocks, minor Py in vein
51.58-51.67	Two chlorite-quartz +/- epidote +/- green mica veinlets (1-5mm) with disseminated Py @ CA 30° & 50°
51.30-52.2	Chloritic +/- Epidote fractures with disseminated Py @ CA 50-60° 30-40°; 1-5/5 cm; some fractures offset quartz-carbonate veinlets
52.2-52.5	20-25% quartz-carbonate veinlets 0.2-4(?) cm wide @ CA 50-70°, 25-35°, larger veinlets contain wall rock fragments; ≤ ½% disseminated Py in wall rocks & fragments; possibly minor Cp coating one Py grain
52.5-56.28	Scattered Pyritic-chloritic fractures @ CA 60-70°, 45-50°, 25-35°
54.72	Minor disseminated Cp with ½% disseminated Py & some
55.15	scaley Cp on chlorite-epidote-carbonate fracture also @ CA 50° Py, Cp in chloritic veinlet 1mm wide @ CA 50-55°
56.64-69.6	Plagioclase phenos more distinct; <1% to locally 2% quartz-carbonate +/- chlorite +/- Py veinlets mainly 1-2 mm wide; Py + minor Cp on chloritic fracture @ CA 30-35° @ 57.8 m
60.65-61.04	More intense silicious alteration with some green mica &/or epidote in several chloritic fragments 0.5-2 cm size; Py rims or replaces some fragments; green mica found in some of the quartz-carbonate veinlets in the alteration zone; Py in fracture fillings with chlorite & in some quartz-carbonate veinlets as well as in host rock; ½% Py
64.5-65.5	Chlorite +/- Sericite +/- carbonate fractures @ CA 55-65°, 35-45°, 15°, 2-5/10 cm; occasional minor Py on fractures
66.6-66.7	5% quartz-carbonate veinlets, 1-3 mm wide @ CA 60-80°, ≤ 2% disseminated Py mainly in wall rocks
66.83-66.89	Beige-pinkish siliceous alteration band @ CA 55-65° with chloritic fragment altered to green mica + Py; cut by later quartz-carbonate veinlets; minor disseminated Py
66.9-67.15	5% quartz-carbonate veinlets & gashes, 1-5 mm wide @ CA 65°, 50-55°, 30°; minor Py disseminated in wall rock & veinlet

	69.85-70.22	Quartz-carbonate +/- chlorite vein; contacts @ CA 25° & @ sub-parallel to 10° CA; some wall-rock inclusions; ½-1% Py in vein as disseminations & fracture fillings with chlorite; quartz is milky to greyish; vein & wall rocks are cut by later, 1-2 mm wide, quartz-carbonate veinlets @ CA 50-70°; Py disseminations & small blebs occur in wall rocks also (½-1% Py); pale yellowish-green epidotization also occurs in wall rocks & inclusions & is more pervasive from this area downward in hole
	70.22-71.25	10% quartz-carbonate veinlets & gashes, 1-5 mm wide, mainly @ CA 60-70°, 45-55°, 25-35°, 5-10°; Trace to locally 2% disseminated Py; average ½% Py; wall rocks show pervasive epidotization as well
	71.25-72.6	Patchy silicification, chlorite still present as patchy to spotted areas; epidotization of f.gr. groundmass increasing toward unit below; 1% quartz-carbonate veinlets & gashes 1-5 mm wide @ CA 20-25°, 30-35°; ½-1% disseminated Py
	72.6	Gradational contact
72.6 - 87.3	4d/ PALE GREENISH TO BEIGE EPIDOTIZED, SERICITIC ± SILICEOUS ± CARBONATE +/- CHLORITE ALTERATION ZONE	
Cp		F.gr. (v.f.gr.), relatively homogeneous, pale greenish, pervasively epidotized, sericitic plagioclase?-rich rock, ± quartz? of variable hardness with sections of remnant chlorite spotting & sections of beige &/or patchy slightly pinkish siliceous +/- carbonate alteration, sometimes occurring as bands up to several cm. wide; ≤1% scattered quartz-carbonate +/- chlorite +/- pyrite veinlets mainly less than 5 mm wide @ CA 10-15°, 25-30°, 40-50°, 65-85°; <½% to locally 2% disseminated Py & fracture fillings of Py +/- chlorite @ CA 20-30°, 40-60° sometimes associated with quartz; minor localized disseminated Cp is occasionally found associated with Py & possibly chlorite; average ½-1% Py; scattered fractures @ CA 35-55° with chlorite streaks (lineations) oriented @ parallel to < 15° to CA
	72.72-74.05	Patchy areas with ½-2% chloritic spotting & occasional slightly pinkish patch
Cp?	74.37	Possible minor Cp associated with chlorite-Py fracture @ CA 35-40°
Cp	74.59	Some Cp associated with intersecting Py fractures @ CA 45° & 55-60°
	77.25-77.50	Two milky to grey, sheared(?) & slurry? quartz +/- carbonate veins 1-3 cm wide @ CA 30° & 40°; minor disseminated Py in veins but grey bands may be finely disseminated sulphide(?);

	½-1% disseminated Py in wall rocks which are silicified in this area
77.66	local Green Mica in fracture.
77.8	1-2 cm wide zone of sheared (?) quartz-Pyrite veinlets @ CA 40-45°
78.4-78.6	2% disseminated & rags of Py ± Qz oriented @ about CA 30-45°
78.83	0.5-1 cm wide quartz-Py ± carbonate veinlet @ CA 25°
79.8	2 cm wide quartz-carbonate-sericite veinlet @ CA 40° with offshoot @ CA 25°; some chlorite & minor hematite present; <1% disseminated Py ± Cp in veinlet which appears banded parallel contacts
81.18	Mud on fracture @ CA 20°
81.75	Possible minor Cp with disseminated Py on fracture surface @ CA 10-15° with some chlorite streaks oblique to CA; (81.73 m - Cross fracture @ CA 30-35° with scaley Py + Cp?)
81.86 Two	Chlorite-carbonate-quartz-Py veinlets, 1-2 mm wide with possible minor Cp
82.07-84.55	Rock has feint pinkish cast with parts showing 1% disseminated chlorite spotting & locally (in lower ½) up to 5% chloritic rags and irregular patches 0.5-2cm in size; minor amounts of disseminated Cp occur with Py in ground mass & associated with few chlorite ± carbonate ± quartz-Py veinlets 1-2 mm wide @ CA 50-55° & with one quartz-chlorite-Py veinlet 2 mm wide @ CA 5-10°; Cp in area from about 79.0-84.25 m. with ½% to locally 1% sulphides (Py ± Cp)
84.55-85.95	Still faint pinkish cast to felsic groundmass but with about 3% disseminated chlorite spotting, rock may resemble parts of unit from 87.3 - 101.1 m; locally some rags of chlorite; few carbonate-quartz veinlets; ½% to locally 5% (over 5 cm) disseminated & fracture fillings of Py ± Chlorite ± carbonate ± epidote @ CA 25-35°, 50-60°, 5°
85.95-87.3	Pale greenish to beige to slightly pinkish alteration zone with epidote-sericite-siliceous-carbonate & a banded zone of patchy chlorite between 86.29-86.57 m; 2-3% quartz-carbonate ± chlorite ± Py veinlets & gashes mainly 1-5 mm wide with a few 1 cm wide; veinlets are oriented @ CA 65-70°, 80°, 35-40°, 5-15°; ½% to locally 1% disseminated Py; 10% veinlets from 86.04-86.25 m
87.3	Contact is hazy @ CA 20° with unit below & semi-gradational as some feint pinkish patches extend into unit below
87.3-101.28	4d/e(?) GREENISH-GREY SERICITE-CHLORITE-CARBONATE ± SILICEOUS ALTERATION ZONE IN DIORITIC ROCK WHICH IS LOCALLY FEINTLY PORPHYRITIC
	Medium to light greenish-grey; f.gr.; groundmass of pale

greenish to white, sericitized? or chloritized plagioclase with variable amounts of chlorite as small grains, larger (≤4mm) lathy grains (after amphibole?), rags, clots & patchy areas with ≤ 15% chlorite; scattered sections with rounded, 1-4mm, faintly (plagioclase) porphyritic rock; carbonate alteration is pervasive but highly variable; some parts with beige siliceous alteration patches & bands ≤ 5cm wide; other areas may be grey but hard & siliceous over 10-15 cm; 1-2% carbonate ± quartz-carbonate ± chlorite veinlets, mainly 1-5 mm wide, occur throughout at orientations of CA 25-40°, 50-60°, 10-20°, 2-5°; Trace to locally 2% Py occurs throughout as disseminations, often associated with chlorite, as small veinlets ± chlorite, as small blebs, & sometimes within quartz-carbonate veinlets; average ≤ ½% Py;

88 - 92.25 Area of some vuggy carbonate veinlets & patches

87.3 - 87.7 Some small patchy, faintly pinkish alteration in felsic matrix

87.73 - 88.62 Six 5-20° CA fractures ± chlorite ± Py cutting several 5-20° CA carbonate-quartz veinlets 1-3mm wide, as well as CA 60° veinlets

88.35 - 88.96 Fractures ± chlorite @ CA 55-65°, 30°; 1/5cm to 3/5cm

91.85 - 92.55 Several chlorite-carbonate ± Py veinlets @ CA 5-15°

→ 93.85 - 94.56 Pyrite fracture fillings & veinlets, ≤ 3mm wide @ CA 25-35°, 15-20°, as well as disseminated Py & several chlorite-carbonate-quartz-Py veinlets ≤ 1mm wide @ CA 45°, 60°; ½% to locally 2% Py (over 5-10 cm); average 1% Py; some of the Py veinlets cross-cut a few quartz-carbonate veinlets which are orientated @ CA 35-45°; local patchy beige silicification

94.67 - 94.85 Several quartz-carbonate-chlorite-Py veinlets 1-3 mm wide @ CA 50-60° with haloes of beige silicification; one veinlet at 94.77 has Pyritic fractures as branches @ CA 5-15° one of which contains possible Cp

Cp? Porphy 94.85 - 96.15 (t&d) Relatively homogeneous, medium greenish-grey porphyritic rock with gradational contacts; ≤ 10% faint to fairly distinct pale greenish to white, rounded plagioclase phenos in a f.gr. matrix of chlorite-sericite; ½% disseminated Py; 1% carbonate-quartz ± chlorite veinlets & gashes @ CA 65-75°, 35-45°, 1-5 mm wide; one chlorite-pyrite-Cp fracture @ CA 30° at 95.83m; few small (≤ 1cm) chloritic fragments partly replaced by Py;

Cp

96.25 - 96.35 Banded to patchy, beige to slightly pinkish, siliciceous alteration @ about CA 55°; cut by 1-2 mm wide carbonate-quartz ± chlorite ± Py veinlets & gashes @ CA 50-60°, 35-40°; < ½% disseminated Py; 96.27m - 1-2cm size patch of blebs & disseminated Py with minor disseminated Cp

		Internal to core in a siliceous beige-green band
	96.8-97.15	Patchy grey to beige to slightly pinkish siliceous alteration; disseminated Py, some associated with small chloritic rags, some with chloritic ± epidote fractures @ CA 35-40°; minor Cp with disseminated Py in epidotized, siliceous band @ CA 40° at 97.81 m;
	98.5	Chlorite-sericite-Py fractures @ CA 30-40°
	98.95-99.01	Carbonate veins with wall rock fragments (50%); contacts @ about CA 45° & 50-60°; minor Py in wall rocks; some late chlorite fractures; local silicification (beige)
	99.04-99.6	Patchy beige silicification (25-30% by volume) & some banding @ about CA 40-50°; cut by carbonate-quartz-chlorite veinlets & gashes 1-5 mm wide @ 60-70°, 30-40°, 10-15°
	100.82-101.15	Grey to beige silicification + carbonatization cut by few carbonate-quartz veinlets & gashes & by chloritic fractures @ CA 45-50°, 20-25°; minor disseminated Py
	101.15-101.28	Carbonate-quartz veining & silicification; 15% wall rock inclusions; chloritic fracture fillings; zone is tectonically brecciated in part; minor disseminated Py; contacts are irregular @ about CA 40-50°
101.28-102.64	GREENISH-GREY CHLORITE-SERICITE-CARBONATE ALTERED ROCK	
		Medium greenish-grey chloritic, sericitic, carbonatized, f-m.gr., well-foliated, lamprophyre(??) with traces of Py; Foliation @ CA 45° (oblique to vein zone contact) changing through to about CA 20°; chlorite oriented parallel to sub-parallel to foliation; groundmass is f.gr sericitic feldspar-carbonate; occasionally see 1-2 mm size possible lathy plagioclase phenos (?); few carbonate veinlets cross-cutting foliation & oriented @ CA 45-50°, 20-30°, 1-3 mm wide
102.64 m (336.7')	END OF HOLE	

(See p. 14 & 15 for additional observations of Chalcopyrite & Galena during core splitting)

14.35 m	Possible Cp with Py-chlorite fracture @ CA 35°
14.76	2% disseminated Py with minor Cp
21.88	Scaley Cp + Py in curved fracture @ CA 40-50°
24.25	Carbonate veinlet ≤ 1 mm wide @ CA 35° with Py +/- Cp +/- Galena
26.19 - 26.52	Several fractures @ CA 35-40° with Py & minor grains & scales of Cp +/- carbonate +/- epidote +/- chlorite
27.26	Py +/- Cp disseminated on a chlorite-epidote-carbonate fracture @ CA 15°
27.36	Cp + Py disseminated along chlorite-epidote fracture @ CA 50-55°
27.66 - 27.93	Minor Cp + disseminated Py on chlorite-epidote fracture sub-parallel to CA
28.19	Py +/- Cp with chlorite-epidote fracture @ CA 70°
35.79	Disseminated Py & possible scaley Cp on carbonate-chlorite fracture @ CA 55°
35.87	Scaley Cp & disseminated Py on carbonate-chlorite fracture @ CA 35-40°
36.10	Scaley Cp on carbonate-sericite-chlorite fracture @ CA 10-15°
42.55	Minor disseminated Cp associated with carbonate fracture @ CA 50°
58.15	Py +/- Cp disseminated in chloritic fracture @ CA 10-20°
56.81	Carbonate veinlet with malachite @ CA 45°; veinlet cuts a chloritic fragment
64.45	Scaley Py + Cp(?) on fracture @ CA 40-45°
64.95	Py + Cp(?) with chlorite-sericite fracture @ CA 15°
66.77	2 cm chloritic fragment with disseminated Py + Cp near margin of fragment; sulfides partly associated with a chloritic fracture @ CA 20°
78.06	Scaley to disseminated Py, Cp with chlorite-carbonate fracture @ CA 45° & with intersecting epidote-sericite-Py +/- Cp fracture @ CA 35°
78.96	Py + Cp disseminated on fracture @ CA 30°
81.0	Scaley Py + Cp on fracture @ CA 35-40° which cross-cuts a 2 mm quartz-carbonate veinlet @ CA 35°
81.41	Py + Cp in a 1-2 mm chlorite-carbonate-quartz(?) veinlet @ CA 40-45° plus Galena smear on a cross-fracture @ CA 35-40°
81.91	Disseminated Cp associated with fracture @ CA 40°
82.07	Py +/- Cp disseminated in an irregular "lense-like" body of quartz-carbonate-chlorite @ about CA 35° (chloritic veinlets parallel & cross-cut quartz-carbonate in the "lense" which is about ≤ 1 cm × 5 cm)
82.12	Chlorite-quartz-carbonate-Py-epidote veinlet with Cp @ CA 55°

82.18	Similar to 82.12 m
82.28	Minor Cp with ½% disseminated Py
82.43-83.05	Carbonate-epidote-chlorite +/- quartz fracture irregular but sub-parallel CA with Py +/- Cp, plus another epidote-chlorite-sericite fracture sub-parrallel to CA but oblique to previous fracture with occasional Cp & chlorite streaks which are oriented oblique to CA
83.55	Minor disseminated Cp on intersecting fractures @ CA 25-30° & 35°
83.98	Cp, Py on a chlorite-epidote-sericite fracture @ CA 45°
84.24	Minor disseminated Cp with Py
85.5	Py +/- Cp on a chlorite-epidote fracture @ CA 40°
85.79	Minor Cp with Py on a chlorite-epidote fracture @ CA 4[illegible] where it intersects a veinlet of carbonate-quartz-chlorite, -epidote @ CA 70°
98.35	Py + minor Cp disseminated on a chlorite-sericite-epidote fracture @ CA 15-25° which cuts carbonate-quartz veinlets @ CA 40°, 60°, 25°
99.28	≤ ½% disseminated Py with a speck of Cp?

SAMPLING & ASSAYING

DH TL 88-6

SAMPLE NO.	FROM	TO	LENGTH (meters)	Au (ppb)
TL 88-6-1	2.5	3.8	1.3 m	Nil
-2	3.8	5.35	1.55	Nil
-3	5.35	6.35	1.0	20
-4	6.35	6.65	0.3	30
-5	6.65	7.44	0.79	1290/1570
-6	7.44	8.23	0.79	20
-7	8.23	9.0	0.77	20
-8	9.0	10.0	1.0	Nil
-9	10.0	11.0	1.0	Nil
-10	11.0	12.0	1.0	Nil
-11	12.0	13.0	1.0	10
-12	13.0	13.9	0.9	10
-13	13.9	15.25	1.35	20
-14	15.25	16.0	0.75	Nil
-15	16.0	17.0	1.0	Not Sampled
-16	17.0	18.0	1.0	Not Sampled
-17	18.0	19.0	1.0	Not Sampled
-18	19.0	20.0	1.0	Nil
-19	20.0	21.0	1.0	Nil
-20	21.0	22.65	1.65	20
-21	22.6	23.25	0.65	Nil
-22	23.25	25.0	1.75	Nil
-23	25.0	26.0	1.0	Nil
-24	26.0	27.0	1.0	Nil
-25	27.0	28.2	1.2	Nil
-26	28.2	30.0	1.8	Nil
-27	30.0	32.35	2.35	Not Sampled
-28	32.35	33.35	1.0	50
-29	33.35	33.85	0.5	270/330
-30	33.85	34.85	1.0	Nil
-31	34.85	35.75	0.9	Nil
-32	35.75	36.15	0.4	Nil
-33	36.15	37.25	1.1	Nil
-34	37.25	39.0	1.75	Nil
-35	39.0	40.0	1.0	Nil
-36	40.0	41.0	1.0	Nil
-37	41.0	42.0	1.0	Nil
-38	42.0	43.0	1.0	Nil
-39	43.0	44.0	1.0	Nil
-40	44.0	44.5	0.5	20
-41	44.5	45.5	1.0	Nil
-42	44.50	45.91	0.41	80
-43	45.91	46.20	0.29	12.00 (0.044 oz/t)
-44	46.20	46.90	0.70	220
-45	46.90	47.60	0.70	60

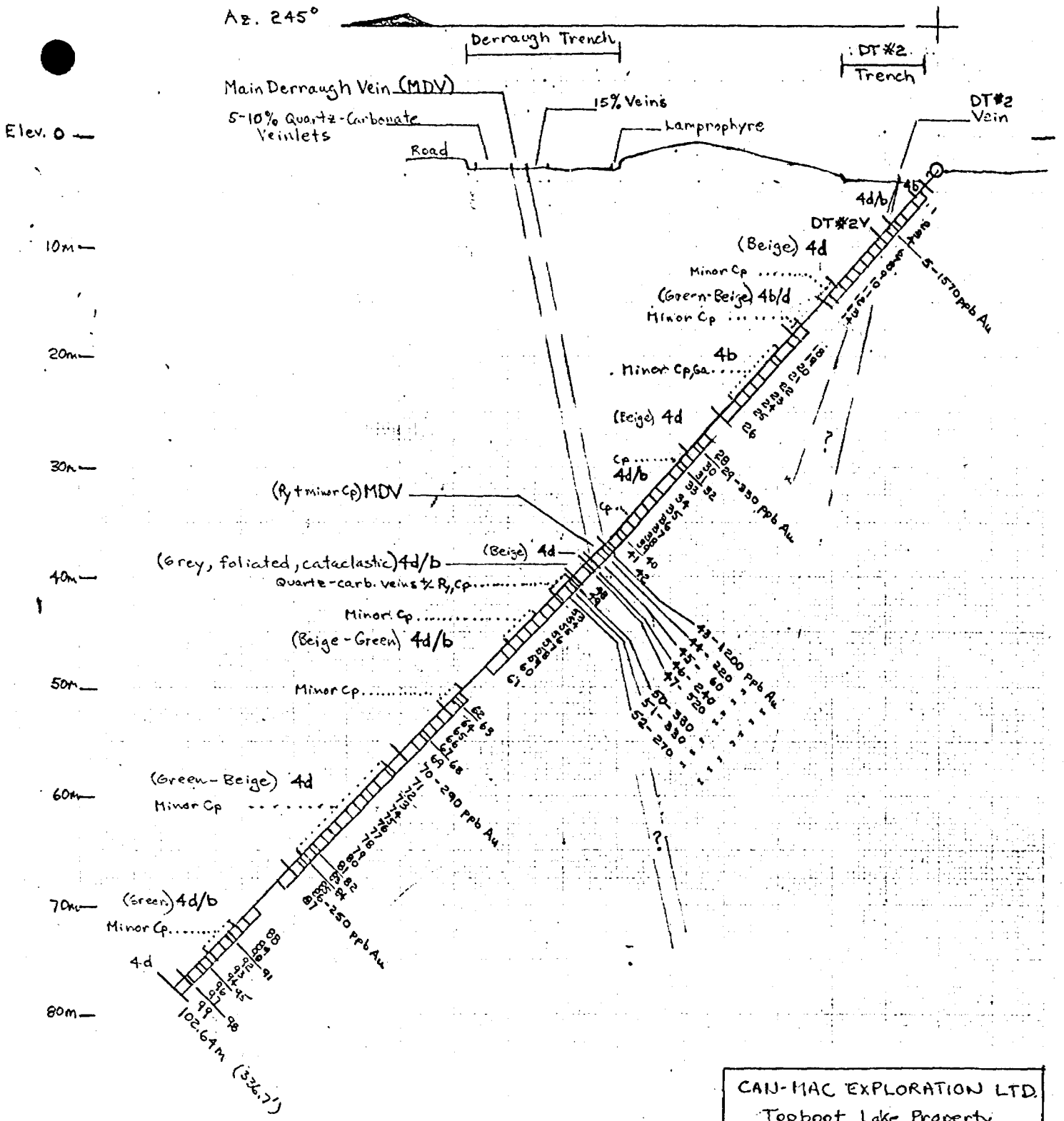
TL88-6 cfd.

SAMPLE NO.	FROM	TO	LENGTH (Meters)	Au(ppb)
TL88-6-46	47.60	48.4	0.8m	240
-47	48.4	48.85	0.45	520
-48	48.85	49.95	1.10	70
-49	49.95	50.2	0.25	120
-50	50.2	50.65	0.45	330
-51	50.65	51.25	0.60	330
-52	51.25	52.20	0.95	270
-53	52.2	52.5	0.3	Nil
-54	52.5	53.5	1.0	130
-55	53.5	54.5	1.0	Nil
-56	54.5	55.5	1.0	Nil
-57	55.5	56.5	1.0	110
-58	56.5	57.5	1.0	Nil
-59	57.5	58.5	1.0	Nil
-60	58.5	59.5	1.0	Nil
-61	59.5	61.5	2.0	Nil
-62	64.9	65.5	0.6	Nil
-63	65.5	66.0	0.5	Nil
-64	66.0	67.0	1.0	10
-65	67.0	68.0	1.0	Nil
-66	68.0	69.0	1.0	Nil
-67	69.0	69.75	0.75	10
-68	69.75	70.25	0.50	70/60
-69	70.25	71.25	1.0	20
-70	71.25	72.65	1.40	290
-71	72.65	74.30	1.65	40
-72	74.30	74.70	0.40	20
-73	74.70	76.25	1.55	30
-74	76.25	77.25	1.0	20
-75	77.25	78.00	0.75	140/80
-76	78.0	79.0	1.0	70
-77	79.0	80.0	1.0	20
-78	80.0	81.4	1.4	10
-79	81.40	82.25	0.85	10
-80	82.25	83.25	1.0	40
-81	83.25	84.25	1.0	70
-82	84.25	84.75	0.5	20
-83	84.75	85.5	0.75	10
-84	85.5	86.0	0.5	20
-85	86.0	86.3	0.3	100
-86	86.3	87.3	1.0	250/230
-87	87.3	89.0	1.7	70
-88	92.35	93.85	1.5	30
-89	93.85	94.85	1.0	40

TL 88-6 ctd.

(6)

SAMPLE NO	FROM	TO	LENGTH (Meters)	Au (ppb)
TL 88-6-90	94.85	95.75	0.90 m	250
-91	95.75	96.25	0.5	70
-92	96.25	97.15	0.9	10
-93	97.15	98.30	1.15	100/60
-94	98.30	98.90	0.60	40
-95	98.90	99.60	0.70	20
-96	99.6	100.8	1.2	40
-97	100.8	101.15	0.35	10
-98	101.15	101.28	0.13	30
-99	101.28	102.64	1.36	Nil



CAN-MAC EXPLORATION LTD.
Topboot Lake Property
Swayze Tp., Ontario

SECTION THROUGH
D.D.H. TL 88-6
(Derraugh Vein)

Scale - 1:500

Date: August, 1988

Geological Engineering Services
F.H.T.

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - # 2 VEIN AREA

HOLE NUMBER: T.L.-88-7

LOCATION: 0+87 W / 2+02 S

LENGTH OF HOLE: 94.52 METRES (310 FEET)

AZIMUTH: 246 DEGREES

DIP: - 47 DEGREES

STARTED: AUG. 3, 1988

FINISHED: AUG. 4, 1988

LOGGED BY: FRANK TAGLIAMONTE WITH MODIFICATIONS BY ROBIN GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ

DIP TESTS: 94.5 M (310 FEET) = - 45 DEGREES

NOTE: CASING LEFT IN HOLE

			Au PPB	Ag PPM
SAMPLES:	TL-88-7-1	55.2-56.7 M	10	NIL
	TL-88-7-2	56.7-58.2 M	10	NIL
	TL-88-7-3	60.6-61.3 M	10	NIL
	TL-88-7-4	61.3-62.8 M	30	NIL
	TL-88-7-5	62.8-64.2 M	1500/1700	0.5
	TL-88-7-6	64.2-65.7 M	170	NIL
	TL-88-7-7	65.7-67.2 M	140	NIL
	TL-88-7-8	68.6-70.1 M	150	NIL
	TL-88-7-9	70.1-71.5 M	80	NIL
	TL-88-7-10	77.0-77.7 M	NIL	NIL
	TL-88-7-11	77.7-78.0 M	20	NIL
	TL-88-7-12	78.0-78.6 M	NIL	NIL
	TL-88-7-13	82.3-82.6 M	NIL	NIL

METERAGE	DESCRIPTION
0-0.9 M	CASING
0.9-62.2 M	TOPBOOT LAKE PORPHYRY INTRUSION OR TUFF
0.9-42.7 M	ALTERED FELDSPAR PORPHYRY OR TUFF Fine-grained, granular, gray rock with a random series of beige to weakly pink, fine-grained, siliceous fragments or heterogenous alteration and bleaching. These siliceous fragments or patches of alteration are 1 cm to 35 cm in size but most are 5 to 20 cm and give the rock a "leopard skin-like" appearance. Local areas contain angular pearly-white plagioclase phenocrysts. A vague foliation is recognized at 25 degrees to the core axis (C.A.). Random low angle fractures from 15 to 20 degrees to the C.A. and high angle fractures from 45 to 55 degrees to the C.A. *NOTE* The surface expression of these rocks are intensely sheared, plagioclase porphyritic and altered. It occurs north of the feldspar porphyry intrusion hosting the Derraugh Vein. It is not known for certain if these rocks are deformed and altered areas of the intrusion or related tuffaceous rocks.
42.7-62.2 M	QUARTZ-CARBONATE BRECCIA ALTERATION ZONE Variably coloured, fractured, brecciated and hydrothermally altered rock comprised of siliceous, beige coloured areas and carbonatized, sericitic and chloritic areas. The rock has a fragmental appearance as previously described. Numerous thin, sinuous quartz (qtz) and carbonate (carb) veinlets, filaments and patches and chert-like siliceous and chloritic fractures. Qtz and carb locally comprise 30 % of the rock. 42.5 M Fault or slip @ 30 degrees to the C.A. with limonitic staining up to 15 cm either side. Thin sandy gouge and silica deposition on the slip face. 41.4 M Fault or slip @ 24 degrees to the C.A. with a thin black coating on the slip face with slickensides. 43.1-53.6 M Homogenous rock comprised of a pale green chloritic groundmass with creamy-white qtz specks and random veinlets. This rock may be an altered lamprophyre dyke. 53.6-62.6 25 % creamy-white qtz-carb fragments, sinuous stringers and filaments in a pale yellow-beige groundmass. Thin hair-like, dull-black, earthy filaments throughout. Occasional laths of dark green mica. Sparsely disseminated (diss) fine cubic pyrite (py), typically less than 0.1 %. Occasional wispy, gray, siliceous seams with fine py.

62.2-64.2 M # 2 VEIN ZONE

> 80 % creamy-milk-white qtz-carb healed breccia with laths and hair-like seams of pale yellow sericite. "Crushed Zone" with subsequent qtz-carb emplacement. Sparse areas with very fine-grained py in rare random, gray, siliceous streaks or threads.

64.2-94.5 M TOPBOOT LAKE PORPHYRY INTRUSION OR TUFF

64.2-94.5 M QUARTZ-CARBONATE BRECCIA ALTERATION ZONE

Generally as previously described but with local variations as noted.

65.8 M 25 cm wide zone of very fine py in thin sinuous, grey, siliceous seams.

66.7-68.3 M Finely fragmented, vaguely foliated, pale yellow sericite saturated zone. Foliation @ 35 degrees to the C.A.

69.8 M Fine beads of chalcopyrite (cpy) and fine grains of py in a 3 cm milky-white qtz fragment.

69.8-84.1 M Random losely diss dark green mica flakes or laths. Some fine-grained py (0.5 %). Siliceous, pale-yellow, massive sericitic groundmass. 5 % random veinlets and filaments of pearly-white qtz. Random but notable hair-like filaments of a dull-black, earthy material usually associated with siliceous threads.

77.7 M 15 cm crushed, qtz stringer @ 18 degrees to the C.A. 2 mm black, earthy, graphitic seam along one margin.

82.4 M 10 cm zone with networks of black, earthy, siliceous material with an apparant qtz thread veinlet association.

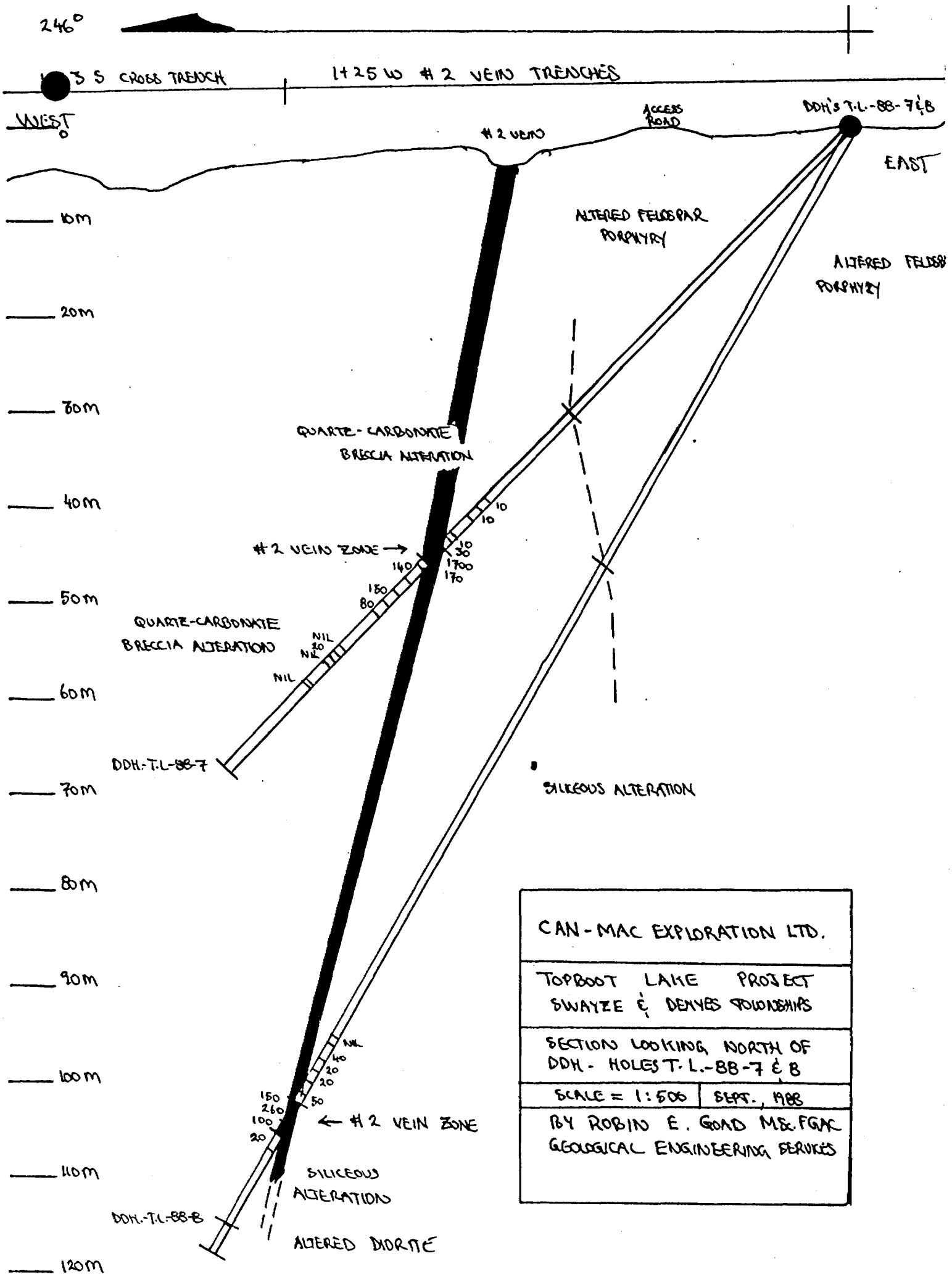
84.1-91.7 M Gradational contacts to pink tinted, weakly foliated, hard, siliceous and porphyritic zone. Loosely distributed, unsorted, pearly-white feldspar phenocrysts less than 3 mm in size. Vague fragmental appearance and subtely foliated @ 35 degrees to the C.A.

91.7-94.5 M Pink tinted, vaguely foliated, weakly sericitic beige alteration zone. Foliation @ 30 degrees to the C.A.

93.3 M Limonitic stained faults @ 20 degrees to the C.A. Blocky core.

94.5 M Probable fault zone @ 28 degrees to the C.A. Limonitic staining adjacent to slip @ 28 degrees to the C.A.

94.5 M 310 FEET END OF HOLE


246°
3 S CROSS TRENCH
1+25 W #2 VEIN TRENCHES
WEST
0
#2 VEIN
ACCESS ROAD
DDH's T-L-88-7 & 8
EAST
10m
20m
30m
40m
50m
60m
70m
80m
90m
100m
110m
120m
ALTERED FELDSPAR PORPHYRY
ALTERED FELDSPAR PORPHYRY
QUARTZ-CARBONATE BRECCIA ALTERATION
#2 VEIN ZONE
10
10
10
30
1700
170
140
150
80
QUARTZ-CARBONATE BRECCIA ALTERATION
NIL
NIL
NIL
DDH-T-L-88-7
SILICEOUS ALTERATION
NIL
40
20
20
150
260
100
20
50
#2 VEIN ZONE
SILICEOUS ALTERATION
DDH-T-L-88-8
ALTERED DIORITE
CAN-MAC EXPLORATION LTD.
TOPBOOT LAKE PROJECT
SWAYZE & DENYES TOWNSHIPS
SECTION LOOKING NORTH OF DDH - HOLES T-L-88-7 & 8
SCALE = 1:500
SEPT., 1988
BY ROBIN E. GOAD M.Sc. FGAC
GEOLOGICAL ENGINEERING SERVICES

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - # 2 VEIN AREA

HOLE NUMBER: T.L.-88-8

LOCATION: 0+87 W / 2+02 S

LENGTH OF HOLE: 136.0 METRES (446 FEET)

AZIMUTH: 246 DEGREES

DIP: - 60 DEGREES

STARTED: AUG. 4, 1988

FINISHED: AUG. 5, 1988

LOGGED BY: FRANK TAGLIAMONTE WITH MODIFICATIONS BY ROBIN GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ

DIP TESTS: 136 M (446 FEET) = - 56 DEGREES

NOTE: CASING LEFT IN HOLE

				Au PPB	Ag PPM
SAMPLES:	TL-88-8-1	110.0-111.6	M	NIL	NIL
	TL-88-8-2	111.6-113.1	M	40	NIL
	TL-88-8-3	113.1-114.6	M	20	NIL
	TL-88-8-4	114.6-115.2	M	20	0.2
	TL-88-8-5	117.6-118.3	M	50	NIL
	TL-88-8-6	118.3-119.8	M	150	NIL
	TL-88-8-7	119.8-120.5	M	230/260	NIL
	TL-88-8-8	120.5-121.9	M	100	NIL
	TL-88-8-9	121.9-123.3	M	20	0.3

METERAGE	DESCRIPTION
0-0.9 M	CASING
0.9-118.3 M	TOPBOOT LAKE PORPHYRY INTRUSION OR TUFF
0.9-53.0 M	ALTERED FELDSPAR PORPHYRY OR TUFF Fine-grained, granular, gray rock with a random series of beige to weakly pink, fine-grained, siliceous fragments or heterogenous alteration and bleaching. These siliceous fragments or patches of alteration are 3 mm to 15 cm in size but most are 5 to 10 cm and give the rock a "leopard skin-like" appearance. Local areas contain angular pearly-white plagioclase phenocrysts. A vague foliation is recognized at 35 degrees to the core axis (C.A.). Random, thin, dull-blacck, hairline seams associated with pearly-white quartz (qtz)-carbonate (carb) veinlets, generally conformable with the foliation. *NOTE* The surface expression of these rocks are intensely sheared, plagioclase porphyritic and altered. It occurs north of the feldspar porphyry intrusion hosting the Derraugh Vein. It is not known for certain if these rocks are deformed and altered areas of the intrusion or related tuffaceous rocks. 21.2 M 7.5 cm wide, rusty coloured qtz-carb stringer @ 50 degrees to the C.A. 22.5 M 20 cm lamprophyre dyke @ 40 degrees to the C.A. 29.3-30.5 M Pink, siliceous, granular fragment or alteration. Sharp contacts @ 40 degrees to the C.A. 31.1-32.3 M Same as above. 34.4-35.0 M Series of limonitic, stained fractures @ 45 degrees to the C.A. 35.4 M 30 cm zone with a series of thin, black, hair-like seams @ 55 degrees to the C.A. 35.4-53.0 M 10 series as above.
53.0-118.3 M	SILICEOUS ALTERATION ZONE Pink to pinkish-beige, siliceous, hard, aphanitic, massive to foliated alteration zone. Rock comprised of quartz +/- alkali feldspar and carbonate with local sericitic, chloritic and more carbonatized areas. The rock has local zones of distinct to faint plagioclase phenocrysts with gradational contacts. The phenocrysts occur in areas with less intense alteration or in areas with a less feldspar destructive, siliceous (only, ie no carbonate) alteration. Numerous (10 %), vague, filaform, pearly-white qtz and carb veins, veinlets patches. Random series of 3 % thin, hairline and 2 mm black threads, generally

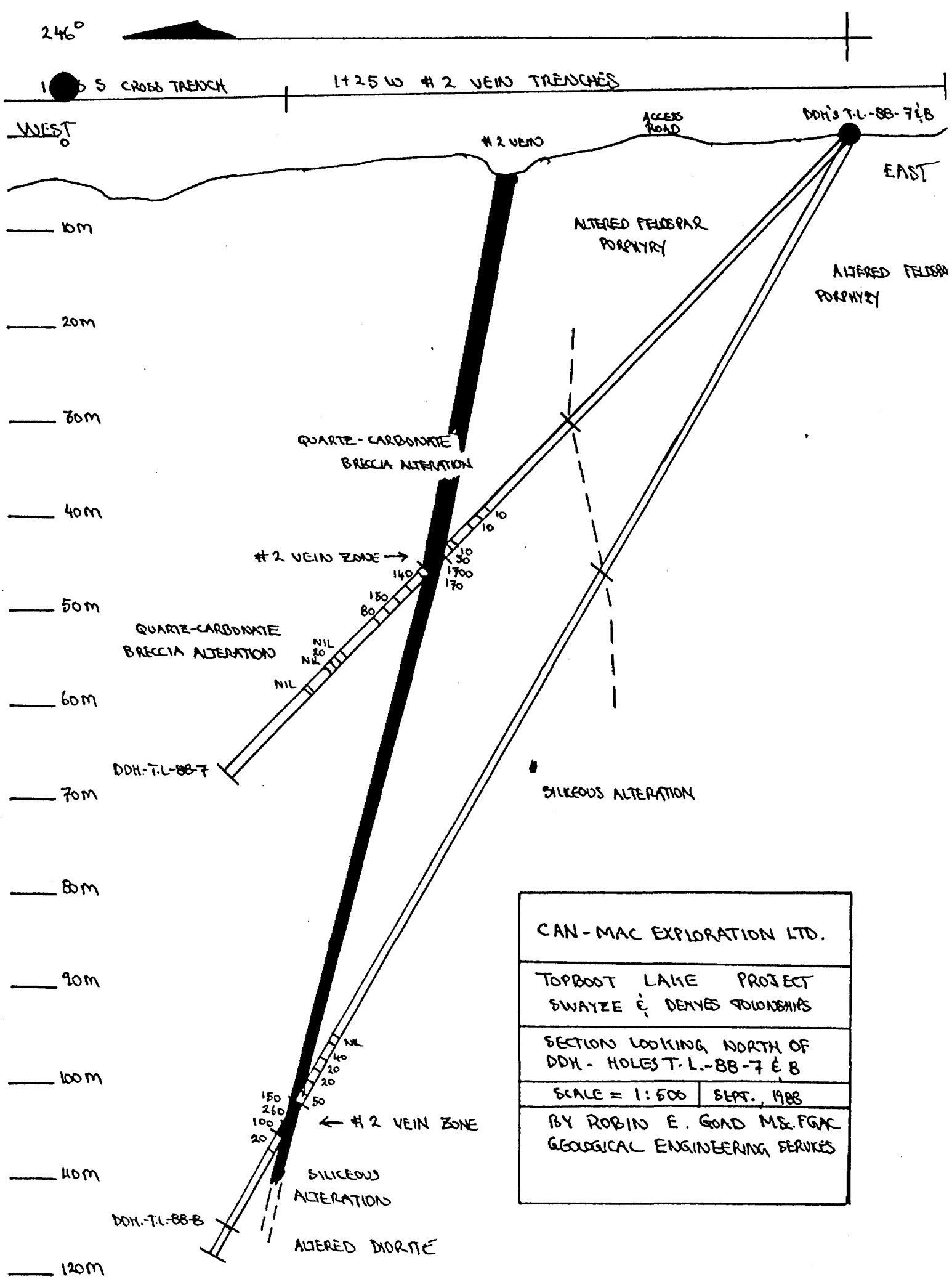
conformable but locally cross-cutting the foliation. Vague foliation and fracturing @ 45 degrees to the C.A.
58.5 M Fault zone @ 25 degrees to the C.A. with 0.5 cm plating of dull-black, earthy material and dull, pearly qtz limonitic staining up to 15 cm either side.
80.2-100.3 M Zone of distinct, less altered feldspar porphyry comprised of a uniform distribution of pearly-white plagioclase phenocrysts in a fine-grained, pink stained, siliceous groundmass. Occasional fine qtz and carb veinlets and irregular masses. Random, hair-like, sericitic threads and 1 to 2 cm chloritic patches. Random, dull-black, earthy threads. Foliation typically @ 55 degrees to the C.A. Appears to be vaguely crushed. Gradational contacts.
100.3-118.3 M Pale-lemon coloured, vaguely brecciated and filaform qtz stockwork zone. Fine granular, 20 %, milky-white qtz stockwork. Random patches and threads of pale yellow sericite. Occasional triangular laths of dull and bright green mica. Random, dull-black threads. Random, sinuous, dirty-gray, siliceous threads with fine granular py (0.25 %).

118.3-121.9 M # 2 VEIN ZONE
Massive and fragmented milk-white qtz in a pale yellow sericitic matrix. Local dirty gray qtz filaments. Random kinked black threads.
118.3-119.8 M 95 % pearly-white qtz with no obvious sulphides.
119.8-121.9 M Unsorted but generally fragmented, 50 % pearly-white qtz fragments in a pale-yellow sericitic groundmass. Sparse very fine py in dirty gray, siliceous threads (< 0.10 % py).

121.9-135.9 M TOPBOOT LAKE PORPHYRY INTRUSION OR TUFF
121.9-132.3 M SILICEOUS ALTERATION ZONE
Predominantly hematitic, pink, massive, fine-granular, very hard, siliceous, altered rock. laced with threads of pearly-white quartz.
121.9-124.7 M 25 Lemon coloured, fine granular sericitic zone

132.3-135.9 M ALTERED DIORITE
Fine-grained, gray, granular, foliated diorite with trianglar and irregular dark green chloritic patches (possibly chlorite pseudomorphing hornblende phenocrysts). Random, 0.5 cm qtz veinlets @ 65 degrees to the C.A.

135.9 M (446 FEET) END OF HOLE


246°
1+25 S CROSS TRENCH
1+25 W #2 VEIN TRENCHES
WEST
0
#2 VEIN
ACCESS ROAD
DDH's T-L-88-7&8
EAST
10m
20m
30m
40m
50m
60m
70m
80m
90m
100m
110m
120m
ALTERED FELDSPAR PORPHYRY
ALTERED FELDSPAR PORPHYRY
QUARTZ-CARBONATE BRECCIA ALTERATION
#2 VEIN ZONE
10
10
30
1700
170
140
150
80
QUARTZ-CARBONATE BRECCIA ALTERATION
NIL
20
NIL
NIL
DDH-T-L-88-7
SILICEOUS ALTERATION
NIL
40
20
20
150
260
100
20
50
#2 VEIN ZONE
SILICEOUS ALTERATION
DDH-T-L-88-8
ALTERED DIORITE
CAN-MAC EXPLORATION LTD.
TOPBOOT LAKE PROJECT
SWAYZE & DENYES TOWNSHIPS
SECTION LOOKING NORTH OF DDH - HOLES T.L.-88-7 & 8
SCALE = 1:500
SEPT., 1988
BY ROBIN E. GOAD M.Sc. FGAC
GEOLOGICAL ENGINEERING SERVICES

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT # 2 VEIN AREA

HOLE NUMBER: T.L.-88-9

LOCATION: 0+71.5 W / 1+83 S

LENGTH OF HOLE: 87.2 METRES (286 FEET) DEEPENED TO 117.0 M (384 FEET).

AZIMUTH: 255 DEGREES

DIP: - 45.5 DEGREES

STARTED: AUG. 5, 1988

FINISHED: AUG. 6, 1988

CONTINUATION OF THE HOLE: OCT., 1988

LOGGED BY: FRANK TAGLIAMONTE WITH MODIFICATIONS BY ROBIN GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ

DIP TESTS: 87.2 M (286 FEET) = - 45 DEGREES

NOTE: CASING LEFT IN HOLE

			Au PPB	Ag PPM
SAMPLES:	TL-88-9-1	17.4-18.1 M	30/30	NIL
	TL-88-9-2	18.1-20.1 M	10	NIL
	TL-88-9-3	20.1-20.6 M	10	NIL
	TL-88-9-4	20.6-21.3 M	20	NIL
	TL-88-9-5	21.3-21.6 M	NIL	NIL
	TL-88-9-6	27.1-28.2 M	NIL	NIL
	TL-88-9-7	39.9-40.4 M	NIL	0.2
	TL-88-9-8	41.7-43.3 M	10	0.3
	TL-88-9-9	43.3-44.8 M	10	NIL
	TL-88-9-10	60.9-62.6 M	200/160	NIL
	TL-88-9-11	62.6-63.9 M	120	NIL
	TL-88-9-12	63.9-65.4 M	140	NIL
	TL-88-9-13	65.4-66.7 M	20	NIL
	TL-88-9-14	66.7-68.1 M	40	NIL
	TL-88-9-15	68.1-69.6 M	150/200	NIL
	TL-88-9-16	75.6-77.1 M	NIL	NIL
	TL-88-9-17	78.3-79.4 M	50	0.3
	TL-88-9-18	91.4-93.0 M	150	NIL

SAMPLES CONTINUED:

TL-88-9-19	93.0-94.5 M	30	NIL
TL-88-9-20	94.5-95.9 M	110	0.2
TL-88-9-21	95.9-97.2 M	70	0.4
TL-88-9-22	97.2-98.7 M	230/150	0.5
TL-88-9-23	98.7-100.3 M	30	0.2

METERAGE	DESCRIPTION
0-1.5 M	CASING
1.5-60.6 M	TOPBOOT LAKE PORPHYRY INTRUSION OR TUFF
1.5-17.5 M	CHLORITE-CARBONATE ALTERATION ZONE Fine-grained, gray/green rock with pearly-gray fragments or patches of heterogenous alteration 2 mm to 3 cm in size. Weakly but noteably foliated @ 30 degrees to the core axis (C.A.). Fine sericitic threads throughout. 5 %, 2 to 5 mm, creamy-white, kinked, cross-cutting, sinuous quartz (qtz) veinlets throughout. Random fractures, some with limonitic staining @ 25 and 45 degrees to the C.A. 8.8 M 30 cm zone of fractures with limonitic staining @ 25 and 45 degrees to the C.A. Water seam.
17.5-24.7 M	ALTERED FELDSPAR PORPHYRY OR TUFF Intermixed zone of pink tinted, fine-grained rock with pearly-white plagioclase phenocrysts with fragments or patches of heterogenous creamy-beige, siliceous alteration. Random, sub-angular, dark and bright green patches between 0.5 and 1 cm in size. These patches are beleived to be either chloritic xenoliths or fragments. Random 2 mm qtz-carbonate (carb) veinlets. Rare random contorted and fragmented qtz stringers. Vague foliation @ 20 degrees to the (C.A.). Low angle fractures @ 20 degrees to the C.A. and high angle fractures @ 50 degrees to the C.A. *NOTE* The surface expression of these rocks are intensely sheared, plagioclase porphyritic and altered. They occur north of the feldspar porphyry intrusion hosting the Derraugh Vein. It is not known for certain if these rocks are deformed and altered areas of the intrusion or related tuffaceous rocks. 17.5 M Creamy-white, sinuous and kinked 0.5 cm qtz veinlet cross-cutting the contact. 18.0 M 10 cm fragmented qtz-carb stringer zone @ 35 degrees to the C.A. 20.7 M 3 cm mechanically broken qtz stringer with fine pyrite (py) and chalcopyrite (cpy). 21.6-24.7 M Pink-tinted plagioclase porphyritic rock. 23.2 M Fault or fracture @ 35 degrees to the C.A.
24.7-28.5 M	SILICEOUS ALTERATION ZONE Pale-beige to pinkish-beige, cryptocrystalline, siliceous rock with a vague foliation. Local less altered areas with a discernable porphyritic texture. 2 %, thin, cross-cutting qtz threads with rare very fine-grained py. Rare random1 to 2 mm bright green mica flakes.

27.3 M 3 mm qtz veinlet with very fine py and cpy.
27.4 M 3 cm qtz stringer @ 25 degrees to the C.A.
27.9 M 8 cm kinked and contorted qtz stringer zone with very fine-grained py

28.5-40.8 M CHLORITE-CARBONATE ALTERATION ZONE
Generally as described above with the following qualifications.
28.5-35.7 M As above but with random, kinked qtz-carb veinlets. Vaguely foliated @ 20 degrees to the C.A. and laced with thin sericitic seams.
35.7-40.8 M Local areas with discernable plagioclase phenocrysts up to 60 cm wide. Dark gray-black lapilli-like groundmass with local thin qtz-carb veinlets and threads.
40.2 M Thin, hair-like, siliceous, seams with fine py and cpy associated with pearly-white qtz stringers.

40.8-46.6 M WEAKLY ALTERED FELDSPAR PORPHYRY
Fine-grained, granular rock with 2 to 3 mm plagioclase phenocrysts with hairline networks of sericite. Vague foliation. 3 % random pearly-white qtz-carb threads and veinlets. Random series of kinked, fragmented and sinuous pearly-white qtz veinlets with dirty gray, siliceous threads, usually carrying fine py and cpy. Random and irregular laths of dull green mica.
42.1 M 15 cm zone with "horse tail", pearly-white, qtz impregnated with 2 mm dirty gray siliceous seams with fine granular py and cpy.
43.3 M 5 cm zone with 2 mm, pearly-white qtz networks cut by dirty gray siliceous seams with fine py and the odd grain of cpy.
43.6 M 2 mm dirty gray siliceous thread with fine py.
44.2 M 2 Same as above cutting a kinked 5 mm, pearly-white qtz stringer containing fine granular py and cpy.
45.8-46.6 M Gray/green fine fragment or xenolith with sharp contacts.

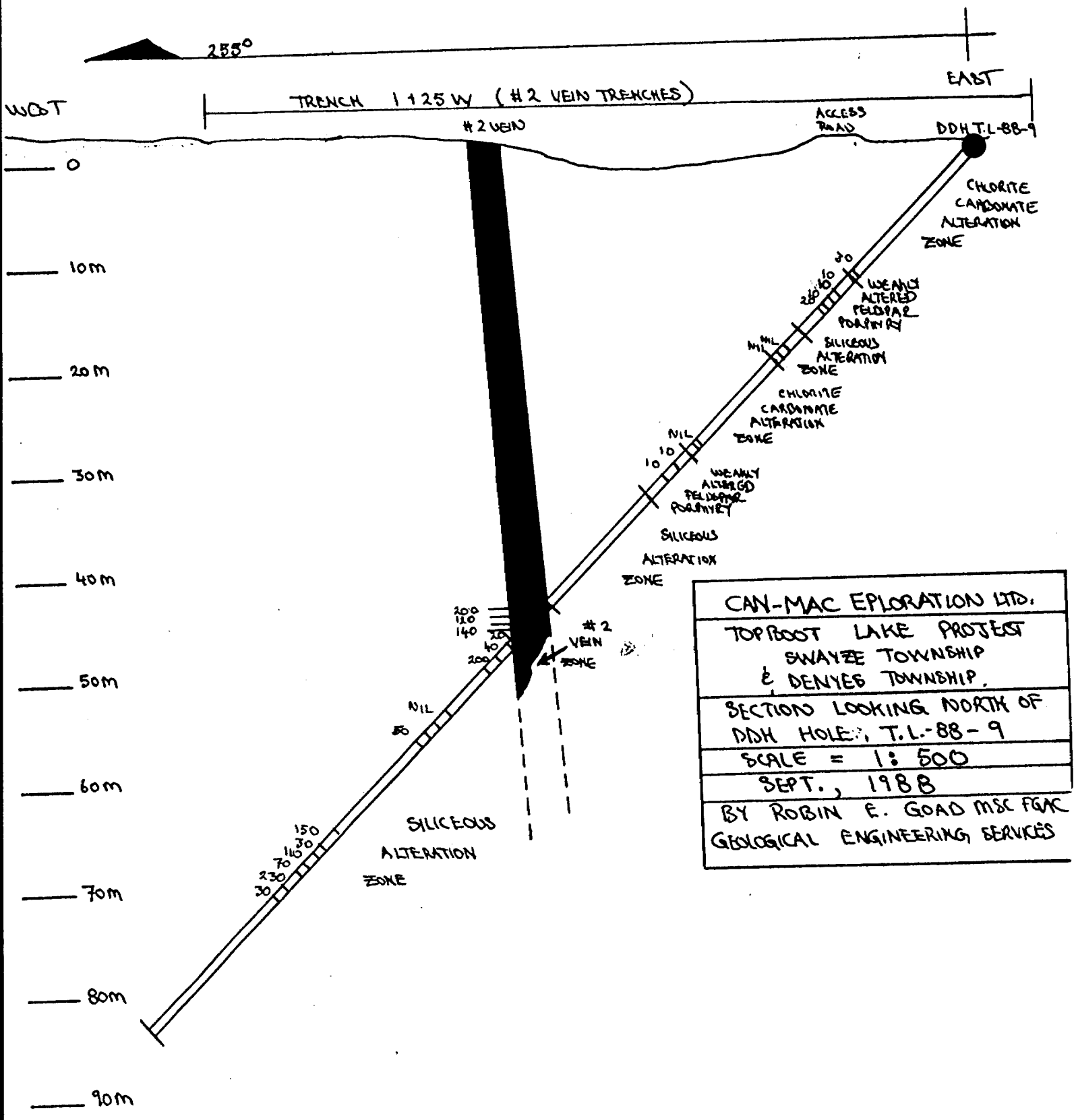
46.6-60.6 SILICEOUS ALTERATION ZONE
Beige to pinkish-beige, cryptocrystalline, siliceous rock, vaguely crushed, and locally sericitic and carbonatized. Laced with pearly-white qtz threadsand veinlets. Local qtz breccia. Random dark green and bright green mica flakes. Random hair-like black threads. Principle fracture direction is 48 degrees to the C.A. Local variations as noted.
46.6-56.7 M Pale-creamy colour, siliceous. Laced with pearly-white qtz threads and veinlets (5 %).
56.7-60.6 M Qtz stringer zone comprised 10 % of a

random series of 0.5 to 4 cm wide qtz stringers. Vague foliation. Saturated with sericite.

60.6-65.7 M # 2 VEIN ZONE
> 60 % creamy-milk-white qtz stockwork with lesser silicified and sericitic fragments of the country rock.

65.7-117.0 M TOPBOOT LAKE PORPHYRY INTRUSION OR TUFF
65.7-117.0 M SILICEOUS ALTERATION ZONE
Generally as previously described but with local variations as noted.
65.7-66.0 M Silicified zone with diss fine py.
65.7-87.2 M 20 %, mainly thread-like and 3 mm wide, sinuous, cross-cutting, pearly-white qtz stringers in a fine, granular and vaguely foliated, siliceous groundmass. Qtz-carb breccia and stockwork. Multiple series of hair-like, black (tourmaline?) threads throughout. Random fine green mica flakes. Sparse py and rare cpy.
91.7-100.3 M Random series of pale-pink, siliceous bands cut by dirty gray and black, siliceous seams with 1 %, very fine diss py. Microbrecciated "crackel breccia", comprised of 10 % random, milky-white qtz-carb threads and < 3 mm veinlet stockworks.
100.3-111.6 M Pale-yellow, fine, granular, quartzite-like alteration. Laced with qtz-carb threadsand veinlets (5 % qtz-carb). Random pale and dark green mica flakes. Random gray-black threads.
109.4 M Fault zone with gouge @ 30 degrees to the C.A. with limonitic staining - possible water seam.
110.0-117.0 M Zone of pale-pink, fine, granular, siliceous alteration. Laced with qtz veinlet stockworks. 10 % qtz veinlets and threads.
111.6 M shearing and 5 mm qtz stringers @ 30 degrees to the C.A. Local black tourmaline? along the shear plane.
114.6 M Slip @ 20 degrees to the C.A.
115.2 M Slip @ 15 degrees to the C.A.

117.0 M (384) FEET END OF HOLE



CAN-MAC EPLORATION LTD.
TOPBOOT LAKE PROJECT SWAYZE TOWNSHIP & DENYES TOWNSHIP.
SECTION LOOKING NORTH OF DDH HOLE #, T.L.-88-9
SCALE = 1:500
SEPT., 1988
BY ROBIN E. GOAD MSC FGAC GEOLOGICAL ENGINEERING SERVICES

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - DERRAUGH VEIN ZONE

HOLE NUMBER: T.L.-88-10

LOCATION: 1+10 W / 6+17.5 S

LENGTH OF HOLE: 78.0 METRES (256 FEET)

AZIMUTH: 130 DEGREES

DIP: - 45 DEGREES

STARTED: SEPT., 1988

FINISHED: SEPT., 1988

LOGGED BY: ROBIN E. GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ

DIP TESTS: NONE

			Au PPB
SAMPLES:	TL-88-10-1	2.34-3.44 M = 1.0 M	110
	TL-88-10-2	11.4-12.4 M = 1.0 M	20
	TL-88-10-3	12.4-13.4 M = 1.0 M	10
	TL-88-10-4	13.4-14.4 M = 1.0 M	NIL
	TL-88-10-5	14.4-15.4 M = 1.0 M	40
	TL-88-10-6	17.7-18.7 M = 1.0 M	20
	TL-88-10-7	18.7-19.7 M = 1.0 M	30
	TL-88-10-8	19.7-20.7 M = 1.0 M	30
	TL-88-10-9	20.7-21.7 M = 1.0 M	130/120
	TL-88-10-10	21.7-22.7 M = 1.0 M	80
	TL-88-10-11	22.7-23.7 M = 1.0 M	80
	TL-88-10-12	23.7-24.7 M = 1.0 M	110/90
	TL-88-10-13	26.0-27.0 M = 1.0 M	110
	TL-88-10-14	66.7-67.7 M = 1.0 M	10
	TL-88-10-15	67.7-69.15 M = 1.45 M	20
	TL-88-10-16	69.15-70.15 M = 1.0 M	NIL
	TL-88-10-17	71.2-72.2 M = 1.0 M	10

METERAGE	DESCRIPTION
0-1.2 M	CASING
1.2-67.7 M	TOPBOOT LAKE PORPHYRY INTRUSION
1.2-2.94 M	SILICEOUS ALTERATION ZONE Beige to weakly pink, fine-grained siliceous rock with local 25 %, 1-2 mm faint, subhedral, sericitic plagioclase phenocrysts. 1-2 %, 2-5 mm chloritic patches are interpreted as altered xenoliths. Approximately 1 %, 1-3 mm, fine-grained, chert-like, siliceous veinlets are commonly at 30 degrees to the core axis (C.A.). Numerous healed siliceous fractures. 2.6-2.94 M microbrecciated with numerous stockwork, hairline siliceous and chloritic fractures.
2.94-11.4 M	CHLORITIC AND SILICEOUS ALTERATION ZONE Greenish gray altered porphyry comprised of up to 20 %, 1-2 mm, faint to distinct, euhedral to subhedral plagioclase phenocrysts in a finer-grained chloritic and/or siliceous groundmass. A beige to pinkish beige, patchy siliceous alteration bleaches the rock with sharp to gradational contacts. The patchy nature of the alteration may be in part controlled by the xenoliths observed in less altered porphyry. Chloritic alteration occurs as wisps throughout the groundmass. Numerous quartz (qtz) +/- carbonate (carb), chloritic and chert-like siliceous fractures and veinlets in random orientation (locally microbrecciated). Larger qtz +/- carb veinlets (up to 2 cm wide) are commonly at 40 degrees to the C.A. Trace (tr) disseminated (diss) pyrite (py) although locally concentrated up to 5 % over 2 cm intervals where there are abundant veinlets. 4.5-5.6 M microbrecciated; beige, siliceous bleaching; and faint sericitic phenocrysts. 4.5 M 1 cm wide qtz veinlet @ 15 degrees to the C.A. 4.6 M 1 cm wide qtz veinlet @ 40 degrees to the C.A. 7.8-11.4 M Gradation to increasingly more siliceous alteration and fractures are healed. 10.2 M 3 cm wide qtz veinlet @ 35 degrees to the C.A.
11.94-27.9 M	SILICEOUS ALTERATION ZONE Pervasive beige to pinkish beige, fine-grained, siliceous alteration with no visible plagioclase phenocrysts. However, there are gradations into areas with 25 %, 1-2 mm plagioclase phenocrysts in

a grey siliceous alteration with less alteration. Numerous (2 %) < 1-3 mm, siliceous, randomly oriented hairline fractures and larger qtz veinlets up to 1 cm wide. Local chloritic wisps and fractures, and epidote and sericite filled fractures. Local areas with tr. to 1 % diss. and fracture filling py associated with the more chloritic areas. The siliceous fractures are in random orientation but commonly 40 to 70 degrees to the C.A.

11.4-16.0 M Tr. to 1 % diss. and fracture filling py with local 5 cm intervals with 2 to 3 % py.

16.0 M 5 to 8 cm wide chloritic band with sharp contacts @ 70 degrees to the C.A. and fine anastomosing chloritic fractures. The rock is interpreted as an altered lamprophyre dyke.

16.1-17.1 M Less intensely altered zone with 25 %, 1-2 mm plagioclase phenocrysts in a gray, fine-grained siliceous groundmass.

18.5-26.2 M siliceous alteration has a pervasive locally intense pink to pinkish red stain beleived to be hematization. Dark green to black, pyritic fractures and 1 % diss. py. Approximately 1 % 1 to 5 mm wide, white qtz veinlets commonly @ 45 and 60 degrees to the C.A. Numerous hairline, pyritic epidote and sericite filled fractures 60 to 90 degrees to the C.A. Py locally up to 2 % in 10 cm wide patches.

25.2-27.9 M Pervasive beige to pinkish beige siliceous bleaching with healed siliceous fractures and occasional 1-2 mm chloritic wisps.

27.9-67.7 M FELDSPAR PORPHYRY WITH HETEROGENOUS SILICEOUS AND LOCAL CARBONATE ALTERATION

25 to 30 %, 1-3 mm, euhedral to subhedral plagioclase phenocrysts in a finer-grained, gray, siliceous groundmass. < 1 %, 1-3 cm angular, chloritic xenoliths. Patches of pervasive beige siliceous alteration up to 4 m locally overprints the porphyry with gradational to sharp contacts. Phenocrysts are locally visible in the altered localities. Areas with siliceous bleaching contain 1-5 %, 1-3 mm wide qtz veinlets commonly 60 to 70 degrees to the C.A. and numerous hairline chloritic and epidote filled fractures.

42.4-67.7 M 1 % angular chloritic xenoliths and 1 %, 1-3 mm wide qtz > carb veinlets commonly @ 35 and 50 degrees to the C.A.

52.0-59.8 M Locally abundant interstitial carbonate.

52.0 2, 2 cm wide qtz-carb veinlets @ 60 degrees to the C.A.

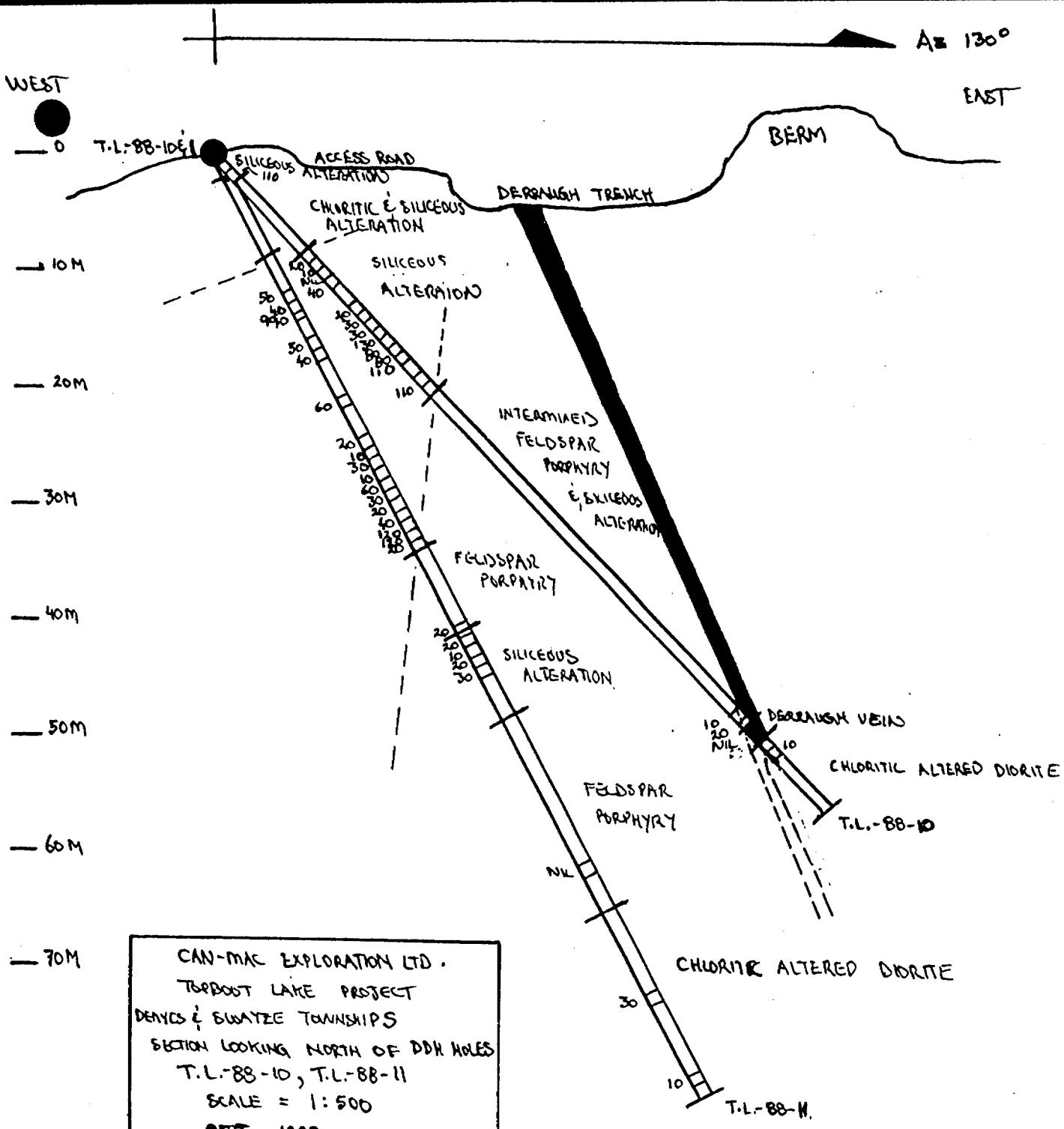
52.2 M 4 cm wide qtz-carb veinlet @ 40 degrees to the C.A.

56.4-56.6 M Irregular qtz veinlets with 5 cm intervals containing up to 5 % coarse-grained py.
58.8-67.7 M Patches of pervasive fine-grained beige siliceous bleaching possibly arising from preferential alteration to xenoliths in the protolith.
59.8-60.3 M Sharp contact into bleaching as above.
62.5-62.85 M Sharp contact into bleaching as above with tr. diss. py.
63.2-63.4 M as above with local wisps of greem mica.
63.8-64.0 M as above with a pink colouration.

67.7-69.15 M DERRAUGH VEIN ZONE
Sharp upper contact @ 45 degrees to the C.A. into a zone of qtz veining and silica flooding with irregular chloritic fractures containing 1 % fine py. Lower contact is brecciated and gradational into altered porphyry.

69.15-78.0 M TOPBOOT LAKE PORPHYRY INTRUSION
69.15-78.0 M FELDSPAR PORPHYRY
25-30 %, 1-2 mm plagioclase phenocrysts in a finer-grained medium gray chloritic groundmass with interstitial carbonate.
71.2-74.5 M 1 % diss. py.

78.0 M END OF HOLE
256 FEET



CAN-MAC EXPLORATION LTD.
TOPBOOT LAKE PROJECT
DENYES & DUAYZE TOWNSHIPS
SECTION LOOKING NORTH OF DDH HOLES
T.L.-88-10, T.L.-88-11
SCALE = 1:500
OCT., 1988
BY RODIN E. GOAD MSc. F.GAC.
GEOLOGICAL ENGINEERING SERVICES

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - DERRAUGH VEIN ZONE

HOLE NUMBER: T.L.-88-11

LOCATION: 1+10 W / 6+17.5 S

LENGTH OF HOLE: 92.4 METRES (303 FEET)

AZIMUTH: 130 DEGREES

DIP: - 60 DEGREES

STARTED: SEPT., 1988

FINISHED: SEPT., 1988

LOGGED BY: ROBIN E. GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ DIP TESTS: NONE

			Au PPB
SAMPLES:	TL-88-11-1	13.6-14.6 M = 1.0 M	50
	TL-88-11-2	14.6-15.6 M = 1.0 M	40
	TL-88-11-3	15.6-16.1 M = 0.5 M	990/940
	TL-88-11-4	18.05-19.05 M = 1.0 M	50
	TL-88-11-5	19.05-20.05 M = 1.0 M	40
	TL-88-11-6	23.35-24.35 M = 1.0 M	60
	TL-88-11-7	26.9-27.9 M = 1.0 M	20
	TL-88-11-8	27.9-28.9 M = 1.0 M	10
	TL-88-11-9	28.9-29.9 M = 1.0 M	30
	TL-88-11-10	29.9-30.9 M = 1.0 M	10
	TL-88-11-11	30.9-31.9 M = 1.0 M	60
	TL-88-11-12	31.9-32.9 M = 1.0 M	30
	TL-88-11-13	32.9-33.9 M = 1.0 M	20
	TL-88-11-14	33.9-34.9 M = 1.0 M	40
	TL-88-11-15	34.9-35.9 M = 1.0 M	100/120
	TL-88-11-16	35.9-36.9 M = 1.0 M	120
	TL-88-11-17	36.9-37.9 M = 1.0 M	20
	TL-88-11-18	45.85-46.85 M = 1.0 M	20
	TL-88-11-19	46.85-47.85 M = 1.0 M	20
	TL-88-11-20	47.85-48.85 M = 1.0 M	10
	TL-88-11-21	48.85-49.85 M = 1.0 M	20
	TL-88-11-22	49.85-50.85 M = 1.0 M	30
	TL-88-11-23	69.55-70.55 M = 1.0 M	NIL
	TL-88-11-24	82.25-83.25 M = 1.0 M	30
	TL-88-11-25	90.35-91.35 M = 1.0 M	10

METERAGE	DESCRIPTION
0-1.2 M	CASING
1.2-92.4 M	TOPBOOT LAKE PORPHYRY INTRUSION
1.2-2.2 M	SILICEOUS ALTERATION ZONE Beige to weakly pink, fine-grained siliceous rock with stockwork chloritic and siliceous hairline fractures and veinlets. Some fractures and veinlets commonly trend @ 30 and 60 degrees to the core axis (C.A.). 2.0-2.2 M Pervasive pink stain interpreted as hematization marginal to a 1 cm quartz (qtz)-carbonate (carb) veinlet @ 35 degrees to the C.A.
2.2-9.7 M	CHLORITIC AND SILICEOUS ALTERATION ZONE Medium to light greenish gray altered porphyry comprised of up to 20 %, 1-2 mm, faint to distinct, euhedral to subhedral plagioclase phenocrysts in a finer-grained chloritic and/or siliceous groundmass. The rock contains < 1 %, 3 mm to 3 cm, angular, chloritic xenoliths. The rock contains numerous hairline, stockwork chloritic and siliceous, chert-like fractures and qtz veinlets up to 5 mm wide. Fractures and veinlets locally form siliceous, pyritic microbreccias over several cm or tens of cm. Phenocrysts in these localities are faint, sericitic and subhedral. A beige to pinkish beige, pyritic, patchy, siliceous alteration locally bleaches the rock and overprints the chloritic alteration with sharp to gradational contacts. The patchy nature of the alteration may be in part controlled by the xenoliths observed in less altered porphyry. 4.1 M 2 cm wide qtz +/- carb @ 70 degrees to the C.A. 8.0 M 2 and 1 cm wide qtz veinlets @ 35 degrees to the C.A. 8.3 M Irregular patches of milky white qtz over 15 cm. 8.3-9.1 M Microbreccia with qtz patches, fractures and veinlets and marginal pervasive beige, fine-grained siliceous alteration and trace (tr) disseminated (diss) pyrite (py).
9.7-37.9 M	SILICEOUS ALTERATION ZONE Pervasive beige to pinkish beige, fine-grained, siliceous alteration with chloritic hairline fractures and wisps, qtz veinlets and patches, and local sericite and epidote filled fractures. The siliceous alteration grades into intervals with a pink to red colouration beleived to be hematization or alkali feldspar. 9.7-10.0 M Zone of intense microbrecciation

comprised of chloritic and siliceous stockwork hairline fractures and larger qtz veinlets up to 1 cm wide.
10.0 M 10 cm wide qtz veinlet trending @ 35 to the C.A.
12.5-13.2 M Locally intense pik to reddish pink stained siliceous alteration containining chloritic streaks up to 2 cm long defining a foliation @ 60 degrees to the C.A. Tr. diss. py.
13.65 M 2.0 cm wide qtz veinlet @ 80 degrees to the C.A.
13.6-16.1 M Averages 1 % diss. py. with local intervals up to 2-3 % py.
16.1-17.7 M Zone of less altered feldspar porphyry comprised of up to 25 %, 1 mm, subhedral, faint plagioclase phenocrysts in a finer-grained, light gray siliceous groundmass. Hairline cloritic fractures @ 45 degrees to the C.A.
17.7-22.8 M Zone of intense pink to pinkish red, pervasive stain (alteration) with < 1 % fracture filling py, chloritic wisps and fractures, and qtz > carb veinlets in random orientation.
22.8-23.2 M Locally abundant dark gray-green chloritic patches.
23.35-24.4 Intense pervasive, beige, siliceous alteration with healed siliceous fractures and 1-2 % diss. py.
24.4-24.5 M Zone of intense fracturing to microbrecciation with larger fractures commonly trending @ 45 degrees to the C.A.
25.4-26.9 M Zones of less intense alteration and bleaching with faint to distinct plagioclase phenocrysts.
26.9-37.9 M Intense beige alteration as previously described containing < 1 % angular chloiritic patches up to 4 cm and beleived to be altered xenoliths. Numerous fractures and veinlets in random orientation locally forming microbreccia. Qtz veinlets comprise 3 % of the rock and locally 50 % over 20 cm intervals. The veinlets are typically @ a low angle to the C.A. Chloritic hairline fractures locally define a poorly developed foliation @ 50 degrees to the C.A. Py. concentration varies from tr. up to 2 % over 2 M intervals.
36.5-37.9 M Intense beige alteration with healed fractures but no appreciable veining. Rock contains fine chloritic wisps and approximately 1 % diss. py.

37.9-45.85 M FELDSPAR PORPHYRY
Silicified feldspar porphyry comprised of 25 to 30 %, 1-3 mm, euhedral to subhedral plagioclase

phenocrysts in a finer-grained, light gray, siliceous groundmass. Zones of intense siliceous bleaching occur in patches up to 50 cm long @ 10 cm to 1 M intervals with sharp to gradational contacts.
40.0 M 1 cm wide qtz veinlet @ approximately 15 degrees to the C.A.
42.3 M Intense siliceous bleaching over 15 cm marginal to a 1 cm wide siliceous, chert-like veinlet @ 45 degrees to the C.A.
42.7 M 30 cm wide zone of intense siliceous bleaching and numerous healed siliceous hairline fractures.
43.0-45.2 M Approximately 2 %, 1mm-1cm wide qtz veinlets and siliceous fractures commonly @ 50-60 degrees to the C.A.

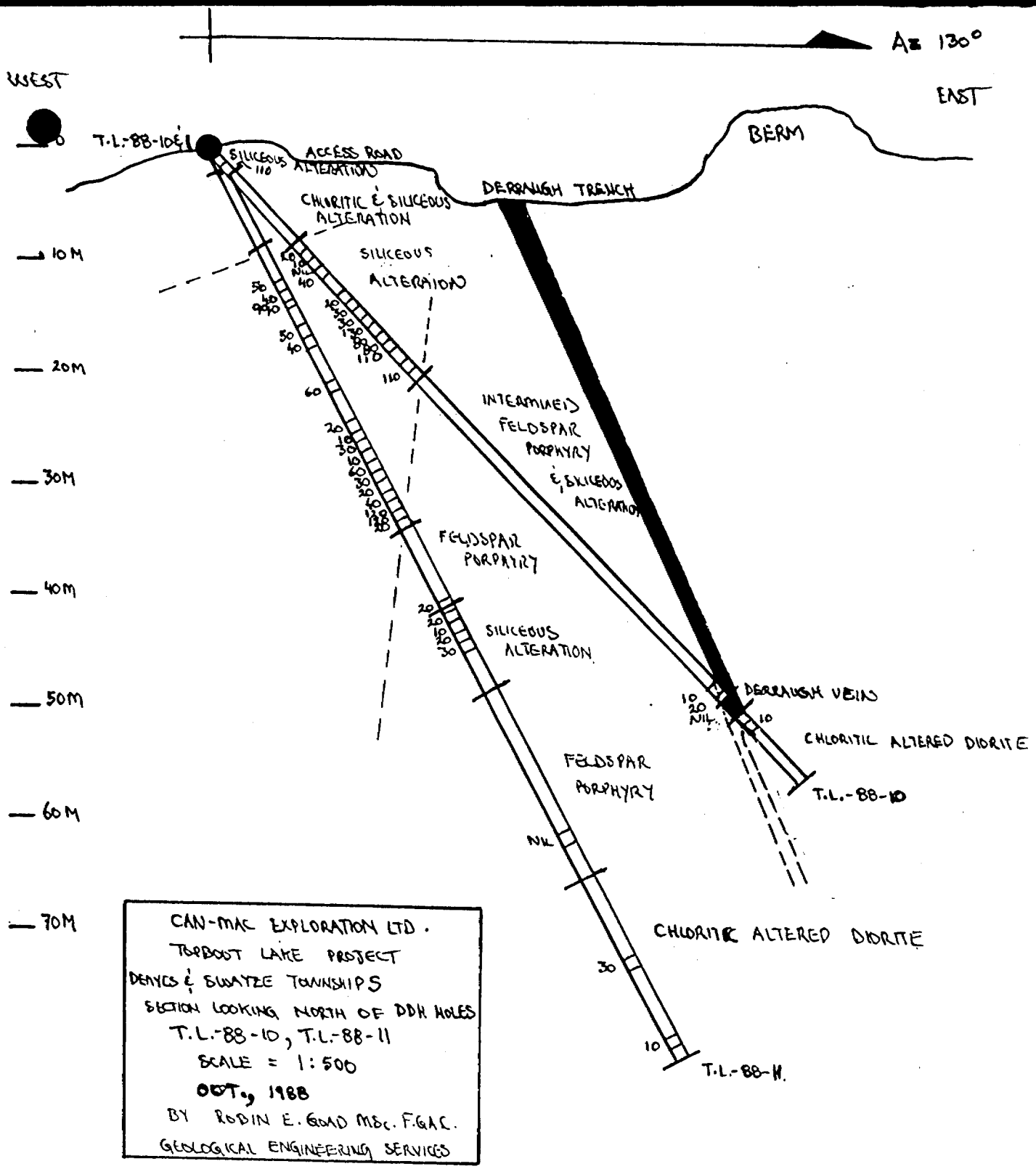
45.85-54.95 M SILICEOUS ALTERATION ZONE
Intense, pervasive, beige, siliceous alteration as previously described but contains up to 30 % chloritic wisps and streaks. Veinlets and fractures are common throughout the zone but local intervals are devoid of fractures. Approximately 2 % diss. Py diminishing in abundance eith increasing depth. Py is particularly abundant marginal to the chloritic and siliceous fractures.
45.85-50.2 M 3 % diss. Py. and locally 5 % over 5 cm intervals marginal to chloritic and siliceous fractures.
51.5 30 cm wide zone of siliceous bleaching around 2 0.5 cm wide siliceous veinlets @ 50 degrees to the C.A.
52.2 M 15 cm band of alteration marginal to 2, 3 mm wide siliceous veinlets @ 45 degrees to the C.A.
52.7 M 3 cm wide qtz veinlet @55 degrees to the C.A.
52.8 M 30 cm band of intense siliceous alteration around a 0.5 cm pyritic band @ 75 degrees to the C.A.
53.1-54.95 M Local zones of less altered feldspar porphyry comprised of faint subhedral plagioclase phenocrysts in a fine-grained siliceous groundmass.

54.95-73.4 M FELDSPAR PORPHYRY
Feldspar porphyritic rock comprised of 63.2-63.4 M as above with local wisps of 25 %, 1-3 mm, plagioclase phenocrysts in a light to medium green-gray, fine grained groundmass. Rock has < 1 % angular, chloritic xenoliths up to 5 cm. Approximately 1 % diss. py. occurs in groundmass and locally 2 % over 1 M intervals. Porphyry

grades from a siliceous alteration to a more chloritic and carbonatized alteration with depth. Qtz +/- carb veinlets 1 mm to 10 cm wide are abundant and commonly trend @ 35 degrees to the C.A. Numerous chloritic and chert-like, siliceous fractures. Local patches of pervasive, beige siliceous alteration with sharp irregular contacts.
54.95-70.0 M Predominantly siliceous alteration.
59.8 M 15 cm wide zone of siliceous bleaching.
60.9 M 10 cm wide qtz vein with irregular contacts @ a low angle to the C.A.
70.0-73.4 M Alteration is dominated by chlorite and carb.
70.3 M 50 cm zone of intense siliceous bleaching.

73.4-92.4 M CHLORITIC ALTERED DIORITE
Medium to dark green mottled textured rock comprised of chloritic patches and wisps in a lighter epidotized and carbonatized groundmass. The chloritic patches are interpreted as retrograde altered hornblende. Local zones of intense siliceous bleaching (as previously described) overprint the chlorite and carb. Occasional carb > qtz veinlets occur up to 4 cm wide. Numerous epidote and chlorite filled fractures. Py is locally 1 % over 1 M intervals. Local interfingering of feldspar porphyry (as previosly described) up to 1.5 M long.
84.7 M 5 cm wide zone of qtz and carb veinlets @ 45 degrees to the C.A.
88.4-88.05 M Fine-grained dark green rock with numerous hairline epidote filled fractures commonly @ 80 degrees to the C.A. Occasional carb. > qtz veinlets and patches up to 1 cm wide commonly @ 30 degrees to the C.A. Local concentrations of up to 2 % finely diss. py. in siliceous altered bands. This finer-grained rock is beleived to be the contact zone of the intrusion but may be mafic volcanics.
88.05-92.4 M Same as above but with a sericitic alteration defining a poorly developed foliation @ 70 degrees to the C.A. Fractures and veinlets comprise 5 % of the rock. Locally abundant py (2-3 % fracture filling py) but averages < 1 %.

92.4 M END OF HOLE
(303 FEET)



CAN-MAC EXPLORATION LTD.
TOPBOOT LAKE PROJECT
DENYES & DUAYZE TOWNSHIPS
SECTION LOOKING NORTH OF DDH HOLES
T.L.-88-10, T.L.-88-11
SCALE = 1:500
OCT., 1988
BY RODIN E. GOAD MSc. F.G.A.C.
GEOLOGICAL ENGINEERING SERVICES

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - DERRAUGH VEIN ZONE

HOLE NUMBER: T.L.-88-12

LOCATION: 1+07.5 W / 5+90 S

LENGTH OF HOLE: 92.7 METRES (304 FEET)

AZIMUTH: 104 DEGREES

DIP: - 45 DEGREES

STARTED: SEPT., 1988

FINISHED: SEPT., 1988

LOGGED BY: ROBIN E. GOAD

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC

CORE SIZE: BQ

DIP TESTS: NONE

			Au PPB
SAMPLES:	TL-88-12-1	8.5-9.5 M = 1.0 M	20
	TL-88-12-2	41.0-42.0 M = 1.0 M	400
	TL-88-12-3	42.0-43.0 M = 1.0 M	150
	TL-88-12-4	43.0-44.0 M = 1.0 M	50
	TL-88-12-5	44.0-45.0 M = 1.0 M	450
	TL-88-12-6	45.0-46.0 M = 1.0 M	20
	TL-88-12-7	46.0-47.0 M = 1.0 M	100
	TL-88-12-8	47.0-48.0 M = 1.0 M	30
	TL-88-12-9	56.9-57.9 M = 1.0 M	20
	TL-88-12-10	57.9-58.9 M = 1.0 M	30/30
	TL-88-12-11	58.9-59.9 M = 1.0 M	10

METERAGE	DESCRIPTION
0-1.2 M	CASING
1.2-43.0 M	TOPBOOT LAKE PORPHYRY INTRUSION
1.2-10.6 M	CHLORITIC ALTERED DIORITE Medium green-gray mottled textured rock comprised of chlorite wisps and patches in a leucocratic groundmass with abundant interstitial carbonate (carb). Abundant epidote and chlorite filled fractures and < 1 mm - 5 mm carb. veinlets (latter commonly trending @ 45 degrees to the C.A. Occasional lighter green zones are overprinted by a siliceous alteration containing up to 3 % py over 10 cm. Patches of altered feldspar porphyry comprised of fine, 1 mm, sericitic plagioclase phenocrysts in a siliceous groundmass occur towards the bottom of the interval.
10.6-20.65 M	ALTERED FELDSPAR PORPHYRY Altered feldspar porphyry comprised of 30 %, 1-3 mm, euhedral to subhedral plagioclase phenocrysts in a finer-grained siliceous groundmass with occasional chloritic xenoliths up to 2 cm long. Groundmass is progressively stained by a pink alteration down section and is beleived to result from hematization or alkali feldspar. Occasional quartz (qtz) > carb. +/- chlorite veinlets up to 2 cm wide and chloritic hairline fractures. Beige to weakly pink, fine-grained siliceous alteration heterogenously throughout the rock and is locally feldspar destructive. 10.6-11.6 M Fine-grained siliceous bleaching with faint sericitic plagioclase phenocrysts. 14.5 M 30 cm of pervasive siliceous bleaching. marginal to a 1 cm wide qtz veinlet @ 25 degrees to the core axis (C.A.). 15.6 M 4.0 cm qtz-carb-chlorite veinlet sub-parallel to the C.A. 16.2 m 3.0 cm qtz-carb-chlorite veinlet @20 degrees to the C.A. 17.0-18.5 M Abundant siliceous, chert-like fractures with marginal siliceous bleaching. 19.0-20.65 M Increasing feldspar destructive siliceous alteration and pink staining.
20.65-35.3 M	CHLORITIC AND SILICEOUS ALTERATION ZONE Sharp contact @ 70 degrees to pervasive, pinkish-beige, fine-grained siliceous altered rock with green chloritic wisps and patches and abundant qtz > carb veinlets and hairline chloritic and epidote filled fractures. 20.65-20.9 M Microbreccia comprised of qtz.,carb., chlorite and epidote filled stockwork fractures.

20.9-21.5 M Sharp contacts @ 70 degrees to C.A. to breccia comprised of 15 % angular to rounded clasts in a siliceous matrix.

35.3-41.1 M ALTERED FELDSPAR PORPHYRY
Sharp contact @ 35 degrees to the C.A. to beige siliceous alteration with faint sericitic plagioclase phenocrysts grading into less altered feldspar porphyry. Less altered porphyry is comprised of 25 %, 1-2 mm plagioclase phenocrysts in a light gray siliceos groundmass and occasional chloritic, angular xenoliths up to 3 cm. Abundant qtz veinlets and healed chloritic and siliceous fractures.

41.1-43.0 M SILICEOUS ALTERATION ZONE
Pervasive beige to pinkish beige, fine-grained, siliceous alteration locally microbrecciated with stockwork hairline chloritic and siliceous fractures and qtz veinlets. Tr. to 1 % diss. py.

43.0-45.0 M DERRAUGH VEIN ZONE
Irregular, brecciated, sericitic contacts into white to cream coloured bull qtz with numerous stokwork healed fractures.

45.0-92.7 M TOPBOOT LAKE PORPHYRY INTRUSION

45.0-46.4 M SILICEOUS ALTERATION ZONE
Microbrecciated and locally mylonitic pervasive pinkish-beige, fine-grained, siliceous rock with anastomozing to stockwork chloritic, sericitic and siliceous fractures. The anastomozing fractures are essentially 45 degrees to the C.A. Occasional qtz +/- carb veinlets and irregular qtz patches up to 15 cm wide.

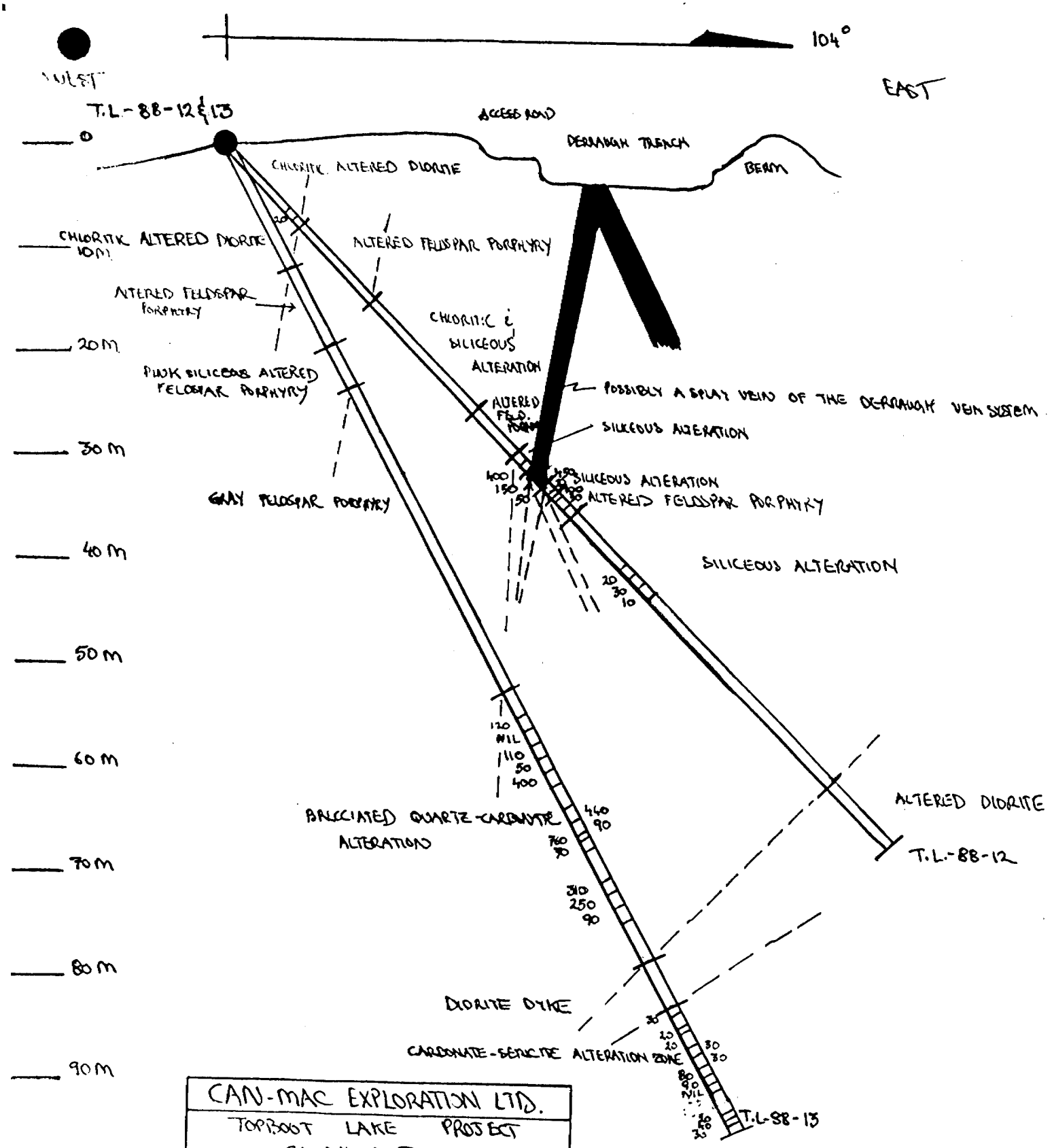
46.4-49.2 M ALTERED FELDSPAR PORPHYRY
Gradational contact into altered feldspar porphyry comprised of 25 %, 1-2 mm, euhedral to subhedral plagioclase phenocrysts in a finer-grained, light gray, siliceous groundmass. 2 %, 1-3 mm wide qtz veinlets commonly @ 70 degrees to the C.A.

49.2-84.9 M SILICEOUS ALTERATION ZONE
Gradational contact into pervasive, fine-grained pinkish-beige to light green siliceous rock. < 1 % qtz and carb veinlets and irregular qtz patches up to 70 cm wide. Variable py content from tr. to 1 %. Occasional emerald green wisps beleived to be green mica. Fine sericitic laminations @ 70 degrees to the C.A.
58.0-58.7 M Irregular patchy qtz > carb > chlorite vein containing clasts of the wall rock.

66.3 4 cm wide qtz > carb > chlorite vein @ 45 degrees to the C.A.
71.6-74.5 M Areas of less intense siliceous bleaching and visible plagioclase phenocrysts.
72.6-72.9 M Numerous hairline siliceous fractures @ 60 degrees to the C.A.
74.0-75.0 M Locally microbrecciated comprised of numerous irregular siliceous fractures and qtz-carb veinlets.
75.5-84.9 M Areas of less altered medium gray porphyry.
82.0-83.0 M Microbreccia comprised of fine-grained, pinkish-beige bleached rock with numerous irregular stockwork siliceous and epidote fillled fractures and fine qtz-carb veinlets and patches.

84.9-92.7 M ALTERED DIORITE
Medium to dark green-gray mottled textured rock comprised of chloritic wisps and patches in a leucocratic groundmass with interstial carbonate. Occasional carbonate veinlets 1 to 5 mm wide and tr. diss. py. Local interfingering of feldspar porphyry with sericitic plagioclase phenocrysts.

92.7 M
(304 FEET) END OF HOLE



CAN-MAC EXPLORATION LTD.
TOPROOT LAKE PROJECT
FINAYZE TOWNSHIP
SECTION LOOKING NORTH OF DDH NOS. T.L-88-12 & T.L-88-13
SCALE = 1:500
OCT., 1988
BY ROBIN. E. GOAD, MSc., FGAC. GEOLOGICAL ENGINEERING SERVICES

DIAMOND DRILL RECORD

FOR CAN-MAC EXPLORATION LTD.

BY GEOLOGICAL ENGINEERING SERVICES, NORTH BAY, ONTARIO.

TOPBOOT LAKE PROJECT, SWAYZE TOWNSHIP - DERRAUGH VEIN ZONE

HOLE NUMBER: T.L.-88-13

LOCATION: 1+07.5 W / 5+90 S

LENGTH OF HOLE: 107.3 METRES (352 FEET)

AZIMUTH: 104 DEGREES

DIP: - 60 DEGREES

STARTED: SEPT., 1988

FINISHED: SEPT., 1988

LOGGED BY: FRANK TAGLIAMONTE

CONTRACTOR: LES ENTERPRISES JACQUES ROUSSEAU, ROUYN, QUEBEC.

CORE SIZE: BQ

DIP TESTS: NONE

			Au PPB
SAMPLES:	TL-88-13-1	62.3-63.7 M = 1.4 M	120
	TL-88-13-2	63.7-65.2 M = 1.5 M	NIL
	TL-88-13-3	65.2-66.7 M = 1.5 M	110
	TL-88-13-4	66.7-68.1 M = 1.4 M	50
	TL-88-13-5	68.1-69.5 M = 1.4 M	400
	TL-88-13-6	72.4-73.9 M = 1.5 M	440
	TL-88-13-7	73.9-75.0 M = 1.1 M	90
	TL-88-13-8	75.0-75.3 M = 0.3 M	740/760
	TL-88-13-9	75.3-76.5 M = 1.2 M	70
	TL-88-13-10	79.8-81.2 M = 1.4 M	310
	TL-88-13-11	81.2-82.7 M = 1.5 M	250
	TL-88-13-12	82.7-84.1 M = 1.4 M	90
	TL-88-13-13	93.7-94.3 M = 0.6 M	30
	TL-88-13-14	95.4-96.0 M = 0.6 M	20
	TL-88-13-15	96.0-97.5 M = 1.5 M	20
	TL-88-13-16	97.5-98.7 M = 1.2 M	30
	TL-88-13-17	98.7-100.3 M = 1.6 M	30
	TL-88-13-18	100.3-101.3 M = 1.0 M	80
	TL-88-13-19	101.3-102.4 M = 1.1 M	90/80
	TL-88-13-20	102.4-103.2 M = 0.8 M	NIL
	TL-88-13-21	105.5-106.1 M = 0.6 M	20
	TL-88-13-22	106.1-106.7 M = 0.5 M	40
	TL-88-13-23	106.7-107.3 M = 0.6 M	30

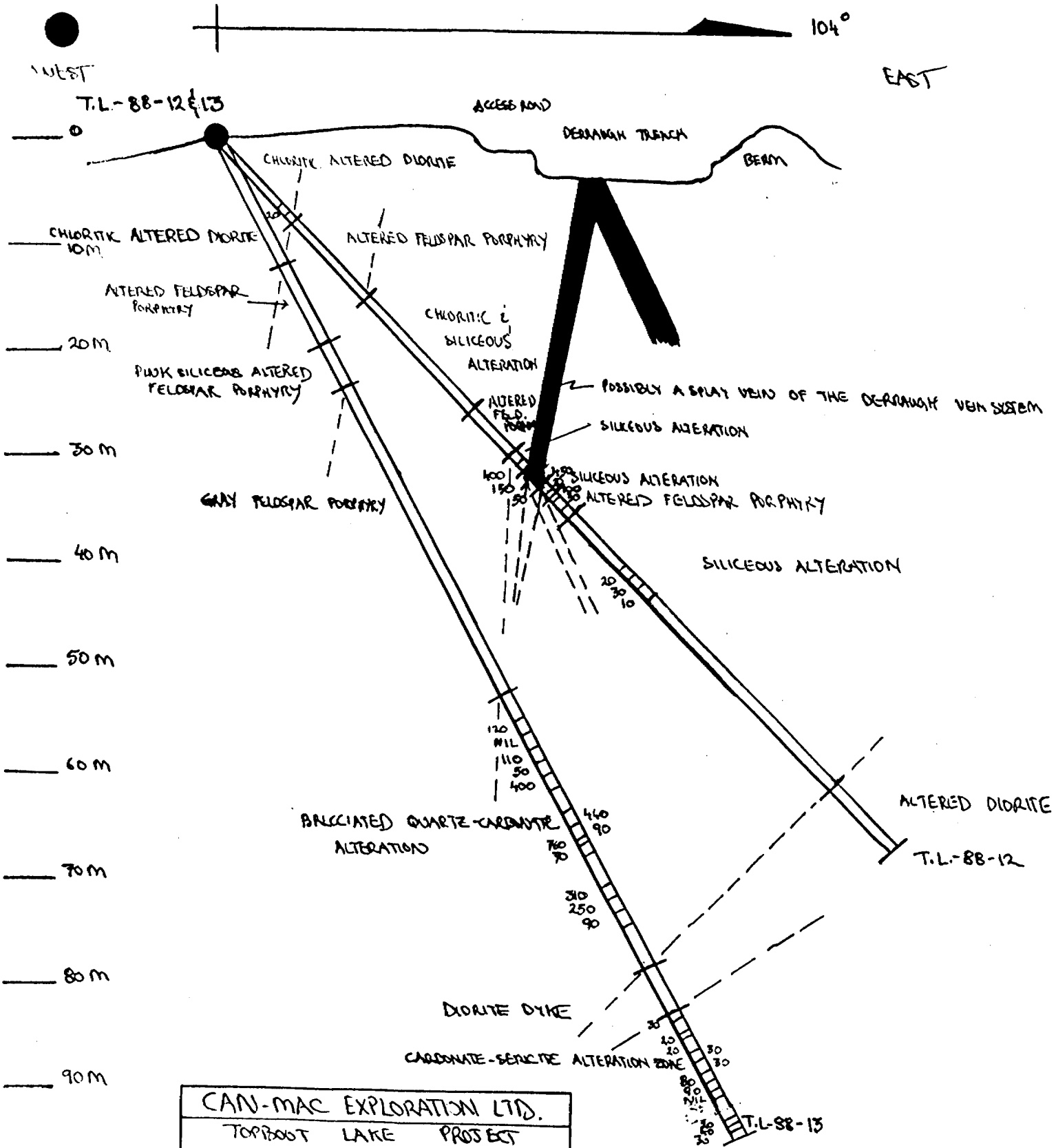
METERAGE	DESCRIPTION
0-1.2 M	CASING
1.2-107.3 M	TOPBOOT LAKE PORPHYRY INTRUSION
1.2-13.4 M	ALTERED AND BRECCIATED DIORITE Variable pearly gray and dark charcoal gray groundmass - vaguely porphyritic and vaguely foliated. Random black chloritic "clots" and flakes as well as black siliceous fractures - some with pyrite. Local brecciated patches. Fracturing with limonitic staining @ 40 degrees to the Core Axis (C.A.). 7.3-13.4 M Darker gray, silicified, hard, vaguely, loosely porphyritic. Random seams and grains of pyrite (py) with up to 25 % py.
13.4-21.8 M	PINK ALTERED FELDSPAR PORPHYRY Gradational but defineable contact, weakly foliated @ 65 degrees to the C.A. to pink altered aphanitic feldspar porphyry. Alternating and mixed zone of gray and pink porphyritic material and pink vaguely porphyritic or aphanitic material. Random tear drop-like dark green and pale green clasts.
21.8-26.3 M	PINK SILICEOUS ALTERED FELDSPAR PORPHYRY Pale pink, very fine-grained, aphanitic indistinctly foliated rock. 25 % quartz-carbonate veinlets and streaks.
26.3-59.3 M	GRAY FELDSPAR PORPHYRY Uniformly fine-grained feldspar porphyry. Pearly white feldspar phenocrysts. Occasional gray and pale green, aphanitic, crushed or broken shard. Lined with pearly white quartz veinlets and stockworks. Random sparse disseminated pyrite. Random bright green fuschite clasts. 49.1-51.5 M Patchy areas of alteration with random semi-rounded pale green fuschite. Laced with pearly white quartz veinlets. 53.9 M 25 cm of foliated diorite possibly a fragment, fairly granular with sharp foliated contacts @ 40 degrees to the C.A. 55.2-59.3 M Bands and fragments of foliated diorite intermixed with quartz-carbonate alteration zone material.
59.3-88.4 M	BRECCIATED QUARTZ-CARBONATE ALTERATION ZONE Variable zone of aphanitic, pale yellow and beige fragments intermixed with 40 % pearly white quartz. Pale yellow sericitic matrix with threads and seams of 10 % sericite. Sparse, very fine disseminated py. Occasional thin 1 mm py threads.

0.25-0.5 % py. Random fractures @ 50 to 65 degrees to the C.A.
61.3-76.7 M Qurtz-carbonate stringer and breccia zone.
70.4-77.3 M Diorite fragment as previously described.
75.0-75.3 M Series of hairline, siliceous threads with fine disseminated py.
75.1 M 4 cm siliceous seam with threads of fine granular py (50 %) @ 55 degrees to the C.A.
76.7 M Slip with gouge @ 25 degrees to the C.A.
76.7-88.4 M Prominantly brecciated and fragmented zone. Mottled, pearly gray and charcoal gray intermixing siliceous material. 10 % pearly white quartz threads and fragments. Random sparse fine py. 2 to 3 % sericite threads and seams.

88.4-93.7 M DIORITE DYKE
Dark green, fine-grained, granular diorite dyke with foliation @ 60 degrees to the C.A. Sharp contacts. Some destruction of grains.

93.7-107.3 M MINERALIZED CARBONATE-SERICITE ALTERATION ZONE
Lemon yellow and beige, aphanitic groundmass. Moderately hard - dirty gray carbonate. Vague brecciation/fragmentation that appears compacted and foliated. Vague foliation @ 60 degrees to the C.A. Locally thinly laminated. Pervasively sericitic. Thin hair-like threads and irregular patches. Random cross-cutting quartz-carbonate threads and veinlets - usually associated with fine granular py. Patchy disseminated and wormy seams of granular py. 3 % py.
94.5-95.1 M Porous possibly kaolinitic zone
101.3-104.1 M Prominantly thinly laminated, lemon coloured zone with sharp contacts. Moderately hard. Carbonated, silicified and sericitic. Laminations @ 60 degrees to the C.A. Random fine beads and wormy, discontinuous seams of py.
102.9 M 1 cm dirty gray quartz veinlet with fine granular py @ 25 degrees to the C.A.
104.1-107.3 M Alternating gray-green bands and massive lemon coloured bands with fine, disseminated and irregular seams of spongey py patches (py grains in a gray quartz matrix) 3 % py.

107.3 M END OF HOLE
(352 FEET)



CAN-MAC EXPLORATION LTD.
TOPBOOT LAKE PROJECT SWAYZE TOWNSHIP
SECTION LOOKING NORTH OF DDH HOLES T.L-88-12 & T.L.-88-13
SCALE = 1:500
OCT., 1988
BY ROBIN. E. GOAD, MSc., FGAC. GEOLOGICAL ENGINEERING SERVICES

CROSS-TRENCH "1+93S" (Not Washed)

4f - Lamprophyre Dyke - Limonite weathering, Qz-Carb-Chl veinlets, 2-5cm wide @ 125-130/90-80W, 170/65E, 160/90+/- (10cm)

4d - Green-grey, Limonitic weathering; chloritic-sericitic with so patchy beige-pink siliceous-carbonate alteration; foliated @ 075/50N which is cross-cut by some Qz-Carb-Chl veinlets wide @ 140/90+/-; outcrop is partly blasted & eastern part co Qz-Chl veining plus some lamprophyre dyke(s) in rubble

#2 Vein - Qz-carb+silicification; East contact is steep dipping

4d - Limonitic weathering; ≤5% Carb-Qz veinlets @ 110, 130/70W, 055/65N (+/-Cp), 020-025/255, 0.1-1cm.

15-20% Qz-Carb-Chl veinlets < 5cm wide in foliation/irr @ 075-080/40-50N, & @ 130/40N

25-30% Qz-Carb veining, contorted, ≤ 5cm wide, turn pa to foliation on North End of main vein

≤5% Qz-Carb veinlets, 0.1-3cm wide @ 045-050/65N, 170-180/90+/-; also near (<0.5 east contact of the limonitic Lamprophyre Dyke are 1-10 deformed Qz-Carb veinlets tre ~160/90+/- with branches ent the Lamprophyre

5-10% Qz-Carb veining, 1-10cm wide @ 155-160/90-80E, 130/85E, 030/90+/-; also ve 1-5cm wide occur in the Lamprophyre & trend 155/60-70E, 095/60N & 065-075/75N & 050/90-80N; the latter two sets also cut the main #2 Ve

4f - Strongly foliated, schistose, sericitic, chloritic, limonitic with sheared Lamprophyre dyke (4f)

4b/d - Carbonatized, chloritized, medium greenish-grey, f.gr. matrix with <20%, 1-2mm rounded white plagioclase phenos & 1-2mm quartz-carbonate veinlets @ 165/80W + few others

4b/d - Less foliated to more massive Limonitic, chloritic, sericitic some plagioclase phenocrysts visible

20% Irregular Qz-Carb Veining, 1-15cm wide @ 030/Flat & 170/steep cross-cutting foliation

4b/d - Less foliated to more massive chloritic, sericitic + plagioclase phenos?, Some Carbonate veinlets ≤0.5cm wide @ 030-050/70N, 130/70W, 170/90+/-

4b/d? - Med. green-grey, chloritic with limonitic dissem. carb & carb. on foliation surfaces, few 3mm carb. veinlets cut foliation

Reference Line

More Massive

Limonitic

Trench 120/50

Vein on contact

Rubble

Sheared

Fractures cut Foliation

Lamprophyre Dyke on West side of the main #2 vein trends @ ~300/70W

TRENCH "1+25W" (#2 VEIN)

ROAD

DDH TL88-9 (-45½°)

DDH'S TL88-7 (-47°) & TL88-8 (-60°)

TIE LINE 2S

TIE LINE

1+75S

1+90S

2+00S

2+00E

2+25S

2+50S

3b?/4d? - light Greenish, Sericite-Chlorite-Carbonate Schist

4b/d? - Plagioclase phenos? locally in a chloritic, carbonatized rock with disseminated Carb. (limonitic) & a few limonitic Carb. veinlets ≤1cm. wide @ 090/70N parallel to foliation

4b? - F.gr, pinkish grey with a few 2mm Limonitic Carb. veinlets

Medium greenish-grey, f.gr., chloritic, carbonatized (limonitic carb. spotting) schist

4d - Sericitic, Chloritic, carb, limonitic, +/- Silic. with 2-10% Qz-Carb veinlets @ 160-175/80E, 145/80E, 45E; beige alteration haloes

{---} Approximate boundary

Main #2 Vein: Quartz-carbonate (limonitic) & silicification with remnant wallrock; +/-Py, +/-Cp

△ Breccia: Quartz-Carbonate with sub-angular wallrock fragments

Cp Observed Chalcopyrite

120/-50 Old Diamond Drill Hole casing

DDH TL88-9 Can-Mac Explr. Ltd. drill hole

#1-932502 - Claim Post

X R.E.G. Picket

0 5 10 20m

41015SE0574 63.5420 DENYES

200

FIGURE 5

OM88-5-L-168 63.5420

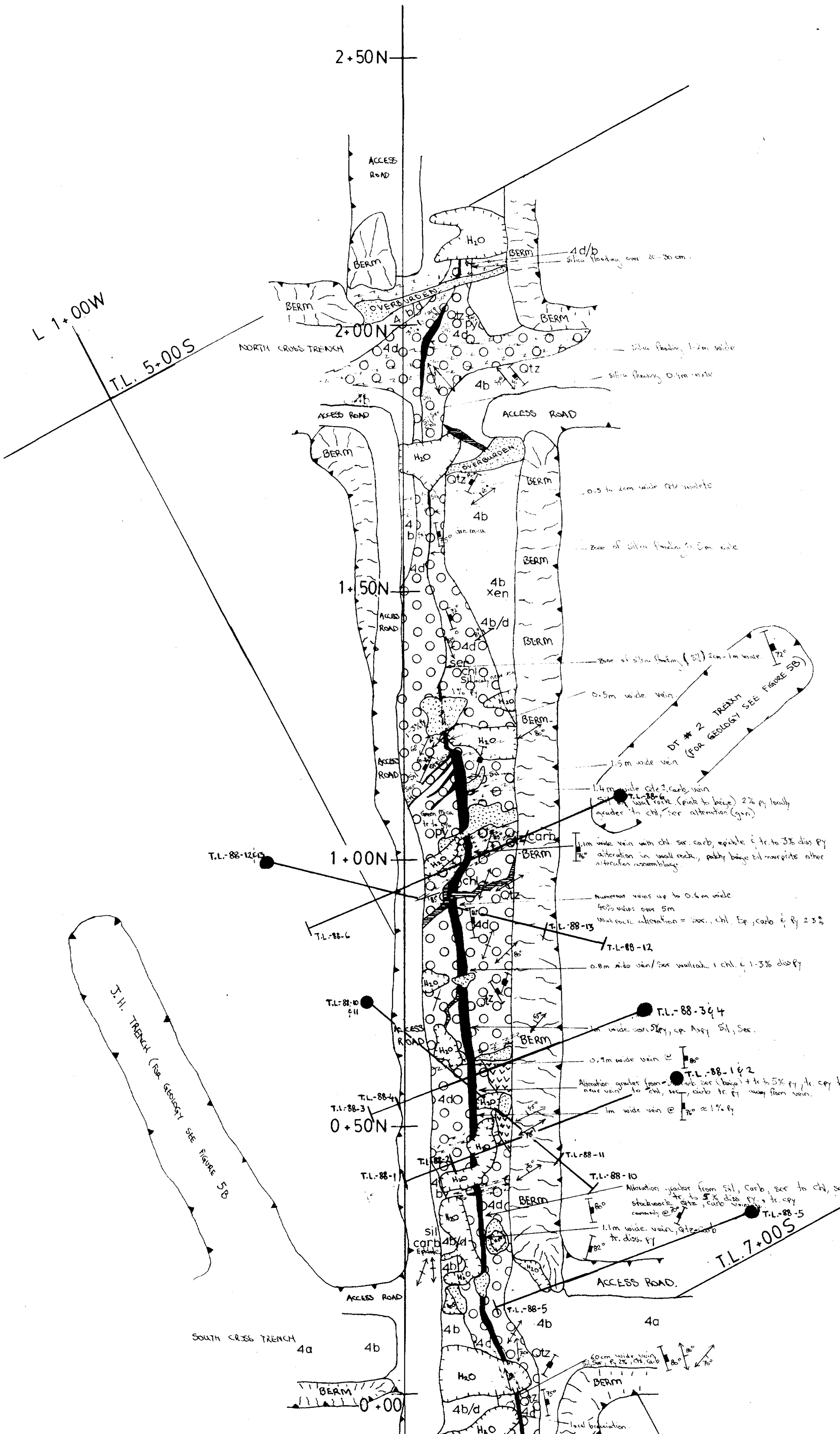
CAN-MAC EXPLORATION LTD.

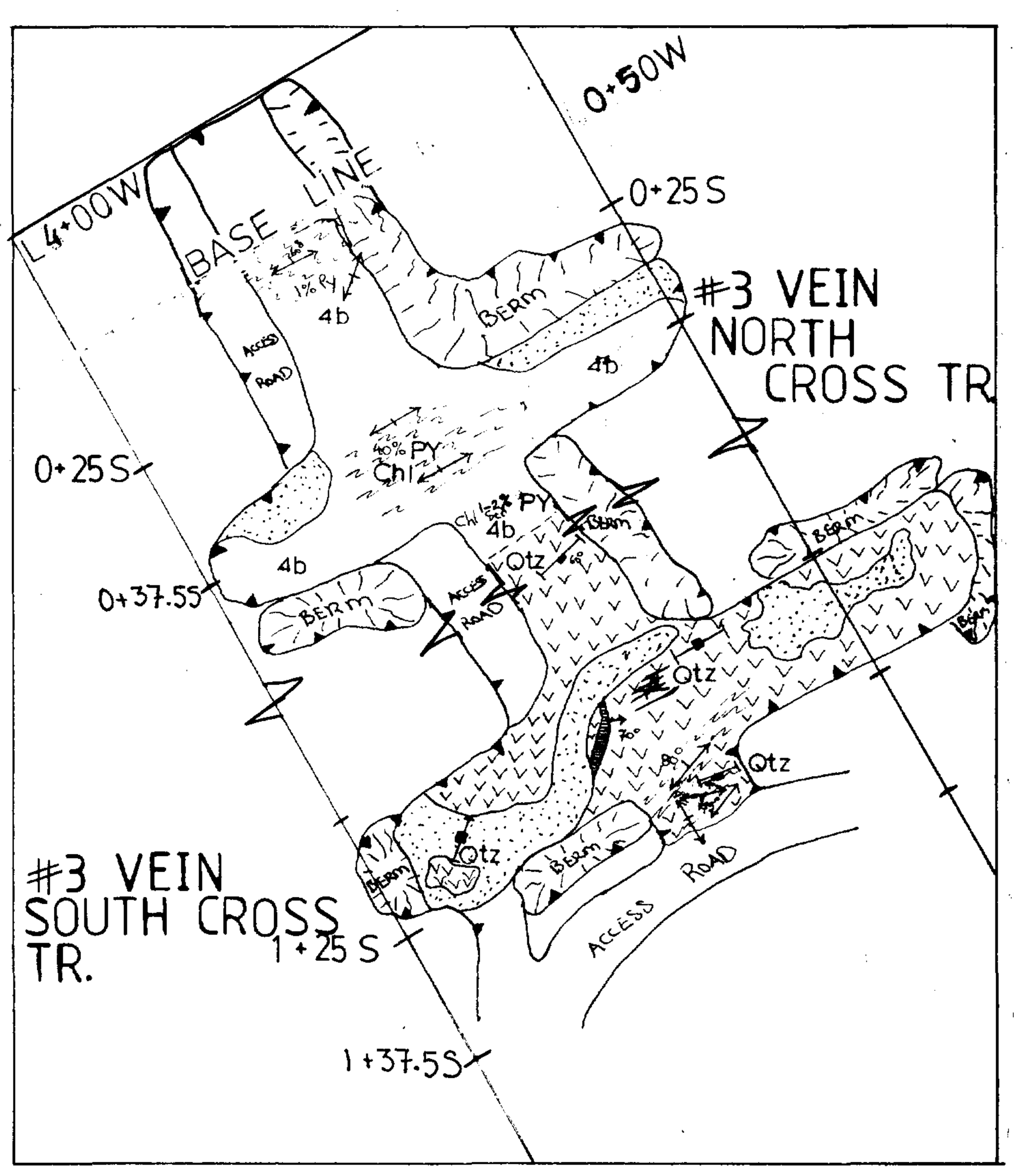
TOPBOOT LAKE PROPERTY
SWAYZE-DENYES TPS.

DETAILED GEOLOGY OF THE NORTH PART OF TRENCH "1+25W" & THE "1+93S" CRO TRENCH & LOCATIONS OF 1988 DIAMOND DRILL H

GEOLOGICAL ENGINEERING SERVI

Aug-Sept., 1988	Scale - 1:500	F.H.T





4a UNALTERED FELDSPAR PORPHYRY
4b SERICITIC & CHLORITIC "
4d INTENSELY ALTERED "
sil = SILICIFIED
chl = CHLORITIC
py = PYRITE
cpy = CHALCOPYRITE
Qtz = QUARTZ VEINS
curb = CARBONATE
ser = SERICITIC
xen = XENOLITHS
= SHEARING & FRACTURING
= LINEATION
= JOINTS
= VEINS
= FOLIATION

CAN-MAC EXPLORATION LTD.
TOPBOOT LAKE PROJECT

SWAYZE & DENYES TOWNSHIPS, ONT.
BY ROBIN E. GOAD M.Sc., F.G.A.C.
OF GEOLOGICAL ENGINEERING SERVICES,
NORTH BAY, ONTARIO.
JUNE, 1988.

N

MAIN DERRAUGH VEIN
LAMPROPHYRE DYKE
DIORITE
ALTERATION ZONE
FELDSPAR PORPHYRY
AREA CLEARED OF VEGITATION
TRENCH BOUNDARY AND GEOLOGICAL CONTACT
OVERBURDEN
WATER HOLE
DEBRIS BERM

SCALE = 1: 500

FIGURE 5A

REVISED PLAN OF THE DERRAUGH TRENCH, AND THE # 3 VEIN NORTH & SOUTH CROSS TRENCHES (INSET)

OM-5-L-168 63-5420

L 0+00 E

L 1+00 E

L 2+00 W

L 1+00 W

TL 5+00S

TL 7+00S

1+50S

DERRAUGH TRENCH

"D.T. #2" TRENCH

"J.H." TRENCH

SOUTH CROSS-TRENCH

SKIDDER ROAD

ACCESS ROAD

ACCESS ROAD

ROAD

Reference Line

Reference Line

Offshoot veins from Main Derraugh Vein

Some stringers & veinlets

4b/d – Lim. weathering, f-gr., light-medium greenish grey, sericitic-chloritic, carbonatized +/- plagioclase phenos; locally poss Epid, Py, silicification near vein

"D.T. #2 Vein" – 5-30 cm wide, Qtz-carb +/- Chl +/- Py; strikes @ 020-025°, dips vertically to 70° NW; vein not always visible

Vein appears to be offset ≤2m (left hand) by fracture-shearing @ 060-075°/steep N

Vein changes strike, dips 70-80° NW; trends toward offshoot veins in Derraugh Trench

4b/d – medium greenish grey with light greenish patches; f-gr. Lim. weathering; local plag inclusive phenos visible; Py disseminated local minor Cpy visible

Area recently trenched, disseminated Py

DDH TL88-1 88-1B

DDH TL88-6

DDH TL88-3&4

DDH TL88-1&2

DDH TL88-5

old DDH casing

4b/d

4b

Parker Lamure Chl

Base map after R.E. Gead (1988)

N

FIGURE 5B

REVISIONS	GEOLOGICAL ENGINEERING SERVICES
REG, OCT 1988	Frank H. Toews B.Sc.
	For CAN-MAC EXPLORATION LTD
	Title: TOP BOOT LAKE PROPERTY DERRAUGH TRENCH AREA SHOWING "DT #2" TRENCH "J.H." TRENCH, SOUTH X-TRENCH & 1988 DIAMOND DRILL HOLES
	Date Oct 1988 | Scale 1:1000

4f - Lamprophyre Dyke - Limonite weathering, Qz-Carb-Chl veinlets, 2-5cm wide @ 125-130/90-80W, 170/65E; 160/90+/- (10cm)

4d - Green-grey, Limonitic weathering; chloritic-sericitic with some patchy beige-pink siliceous-carbonate alteration; foliated @ ~075/50N which is cross-cut by some Qz-Carb-Chl veinlets ≤5cm wide @ 140/90+/-; outcrop is partly blasted & eastern part contains Qz-Chl veining plus some lamprophyre dyke(s) in rubble; +/- Py

4d-Strongly foliated, schistose, sericitic, chloritic, limonitic with sheared Lamprophyre dyke

#2 vein - Qz-carb+silicification; East contact is steeply dipping

4d - Limonitic weathering; ≤5% Carb-Qz veinlets @ 110/60+80S, 130/70W, 055/65N (+/-Cp), 020-025/25S, 0.1-1cm. wide

15-20% Qz-Carb-Chl veinlets <5cm wide in foliation irregular @ 075-080/40-50N, & @ 130/40N

25-30% Qz-Carb veining, contorted, ≤5cm wide, turn parallel to foliation on North end of main vein

≤5% Qz-Carb (+/-Py) veinlets, 0.1-3cm wide @ 045-050/65N, 135/70E 170-180/90+/-; also near (<0.5m) the east contact of the limonitic Lamprophyre Dyke are 1-10cm wide deformed Qz-Carb veinlets trending ~160/90+/- with branches entering the Lamprophyre

4b/d - Carbonatized, chloritized, medium greenish-grey, f.gr. matrix with <20%, 1-2mm rounded white plagioclase phenos & 1-2mm quartz-carbonate veinlets @ 165/80W + few others

4b/d - Less foliated to more massive Limonitic, chloritic sericitic some plagioclase phenocrysts visible

20% Irregular Qz-Carb Veining +/-Py 1-15cm Wide @ 030/Flat & 170/steep cross-cutting foliation

4b/d - Less foliated to more massive chloritic, sericitic+ plagioclase phenos., Some Carbonate veinlets ≤0.5cm wide @ 080-090/70N, 130/70W, 170/80+/-; +/-Py

4b/d? - Med. green-grey, chloritic with limonitic disseminated carb. & carb. on foliation surfaces & few 3mm carb. veinlets cut foliation

5-10% Qz-Carb veining (+/-Py) 1-10cm wide @ 155/160/90-80E, 130/65E, 030/90+/-; also veins 1-5cm wide occur in the Lamprophyre, & trend 155/165/60-70E, 095/60N & 065-075/75N & 050/90-80N; the latter two sets also cut the main #2 Vein

TIE LINE 2S

TIE LINE 2S 056°

CROSS-TRENCH "1+93S" (Not Washed)

DDH TL88-9 1+45W

DDH'S TL88-7 (-45) & TL88-8 (-60)

#2-932505 #3-932504 #4-932503 #1-932502

Medium greenish-grey, f.gr., chloritic, carbonatized (limonitic carb. spotting) schist

3b?/4d? - light greenish, sericite-chlorite-carbonate schist

4b/d? - Plagioclase phenos? locally in a chloritic, carbonatized rock with disseminated Carb. (limonitic) & a few limonitic Carb. veinlets ≤1cm. wide @ 090/70N parallel to foliation

4b? - Fgr, pinkish grey with a few 2mm Limonitic Carb. veinlets

Fractures cut Foliation

Lamprophyre Dyke on West side of the main #2 vein @ ~300/70N

4d - Sericitic, chloritic, carb, limonitic, +/- Silic. +/-Py with 2-10% Qz-Carb veinlets @ 160-175/80E, 145/80E, +5E; beige alteration halos

TRENCH "1+25W" (#2 VEIN)

Vein on contact

Rubble

ROAD

1+75S

1+90S

2+00S

2+25S

2+50S

L2W

L1W

N

30°

0 5 10 20m

OM-5-L-168

63 5420

FIGURE 6

CAN-MAC EXPLORATION LTD.

TOPBOOT LAKE PROPERTY
SWAYZE-DENYES TPS.

DETAILED GEOLOGY OF THE NORTH PART OF TRENCH "1+25W" & THE "1+93S" CROSS TRENCH & LOCATIONS OF 1988 DIAMOND DRILL HOLES

GEOLOGICAL ENGINEERING SERVICES

Aug.-Sept./88 | Scale - 1:500 | BY F.H.T.

{....} Approximate boundary

Main #2 Vein: Quartz-carbonate (limonitic) & silicification with remnant wall rock; +/-Py, +/-Cp

Breccia: Quartz-Carbonate with sub-angular wallrock fragments

(Cp) Observed Chalcopyrite

120/-50 Old Diamond Drill Hole casing

DDH TL88-9 Can-Mac Expln. Ltd. drill hole

#1-932502 - Claim Post

X R.E.G. Picket

L6W

L5W

L4W

0+00

BASELINE

1+00S

2+00S

3+00S

X-TRENCH 5+63W

X-TRENCH 4+33W

X-TRENCH 3+90W

Poplar
Low Ground

Poplar
Alder

Cedar - Alder - Grass
Swamp

Swamp
o/b > 3m
deep

SAMPLE (E) - Nil ppb Au
Approximately 1 meter zone of 5% stockwork quartz-carbonate-chlorite veins ≤ 5cm wide +/- Py; veins @ 306/80, 055/?, 080/?, 165/?

SAMPLE (B) - 10,630 ppb Au
Qtz-carb Breccia + Py + Cpy

SAMPLE (D) - 10 ppb Au
Zone of quartz-carbonate veins +/- Py, ⅛ Cp

SAMPLE (F) - 20 ppb Au

SAMPLE (A) - 850 ppb Au

Dykes of 4b in 2-3b (Lim)

4a/b (Lim)

Minor veins of Qtz-carb.

3-4m o/b

1m. o/b

2-3b (Lim)

Thin bedded

ACCESS

ROAD

ROAD TRENCH
(Now covered)

Old Trench
(Now Buried)

Old Trench
(Now buried)

4 (Lim)

4b (Lim)
2-3b (Lim)

Local zones of Qtz-Carb veins

2-3b (Lim) with ≤ 3cm wide lenses & veins

4b (Lim) with 1-5cm. Qtz-carb. veins

2-3b (Lim) with Carb. lenses

4m. o/b

4b (Lim) with minor Qtz-carb veins ≤ 1cm wide

2-3b with rare veins of Qtz-carb (Lim)

Ser, Chl

Lamprophyre Dyke 10cm wide intrudes Porphyry & Intermediate volcanics & parallels joints which offset contacts

2-10% stockwork veins ≤ 5cm wide

1-2% Stockwork Qtz-carb-chl veins ≤ 1cm wide in 4a/b

5-10% Stockwork veins ≤ 3cm wide

Zone of Qtz & Py ≤ 0.6m wide in contact area of porphyry-volcanics; pods dip steeply & appear to be the source of same stockwork veining; disseminated Cpy, Py in altered volcanics

Old D.D.H. @ -50°NW

Foliated Intermediate Volcanics crosscut by porphyry & are intruded by Qtz-carb veins +/- Cpy +/- Py

40% Qtz-carb veining & brecciation + Cpy ±Py in contact area of foliated volcanics & porphyry

4b - Minor Veins - Limonite

TRENCH 1+25S

2-3b with Qtz-Carb. inserts in foliation planes, Trace Py

2m. o/b

o/b in clearing

2-3b + 2a

2-3b/c (Lim)

Sheared 2-3b/c (inclusion in 4)

Zone of Quartz veins

2-12cm Quartz-Carb-Chl Vein

Irregular 4a/b

Sheared contacts

10% Carbonate Lenses

Lamprophyre Dyke ≤ 10cm wide

Porphyry Contact offset 30cm (Left Hand)

Local Qtz-carb veins, dic out to west

4b+ veins

Locally ≤ 25% veins of Qtz-Carb

Old Trenching in o/b

2-3b with Qtz-Carb. inserts in foliation planes, Trace Py

2m. o/b

4b (Lim) with 2-3% Qtz-carb stockwork veins ≤ 2cm

2-3b (½ Lim)

≤ 10cm Qtz-Carb-Chl vein

Thin-bedded 2-3b with ≤ 1cm wide, ≥-folded to "ptygmatic" Qtz-carb veins trending approximately 310°/steep

2-3d? Sheared

2-3d - Pillows ≤ 1.5 x 0.6m with chloritic selvages + 2-5% interstitial Qtz-Carb veining

2.5m o/b

X-TRENCH 4+80N

2-3b (½ Lim) with 2-3% Qtz-carb stockwork veins ≤ 2cm

4b (Lim) pinches out

2a?

2-3b

2-3b (½ Lim) with 2-3% disseminated pyrite (felsic fragments 5-10cm in size in a chloritic matrix)

4d/b? (Lim)

Silicified near contact

Thin bedded 3a/b

3b + 2-3b

Lamprophyre Dyke ≤ 10cm wide @ ~022°/80E in edge of depression

4d/b (Lim) ½ Py

4d/b ½ Py

Old Trenching in o/b

VALLEY

931816

Sandy Hill

ROAD TO TOPBOOT

STEEP SLOPE DOWN TO STREAM

Alder

#3-931816

#2-931817

Old Beaver Dam

NORTHERN, SWAMPY ARM OF LAKE

931817

606458
(Claim Posts Not Found)

#1-1026268

#2-1026268

#1-1026280

#2-1026280

1026268

1026280

End of Lines

o/b

LEGEND*

- Feldspar (±Quartz) Porphyry
- Felsic Metavolcanics
- Intermediate (-Mafic) Metavolcanics (may include volcaniclastics) -Chlorite +/- Carbonate +/- Sericite +/- Py alteration
- Mafic Metavolcanics

SYMBOLS*

- Quartz +/- Carbonate +/- Chlorite +/- Sulfide Vein
- Joint
- Foliation - Schistosity
- Shear Zone
- Contact - Defined
- Contact - Interpreted
- Approximate Boundary
- o/b Overburden
- Trench Clearing
- Trench Boundary
- Swamp
- Small Stream
- Claim Post - approximate location
- Claim Line - approximate location

SAMPLE (B) = 10,630 ppb Au - Grab Sample Analysis (Best value where >1 analysis)

* See Appendix of Report for more detail

FIGURE 7

CAN-MAC EXPLORATION LTD.

SYLVANITE PROPERTY
DENYES TP.

GEOLOGY OF TRENCHED AREA

GEOLOGICAL ENGINEERING SERVICES

Aug-Sept, 1988 | Scale - 1:500 | F.H.T.

OM-5-L-168

63.5420