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**REPORT ON THE 1988  
DIAMOND DRILLING PROGRAM  
BOOMERANG LAKE AREA  
BARTLETT TOWNSHIP, ONTARIO**

**BY**

**NEIL D.S. WESTOLL & ASSOCIATES LTD.**

**RECEIVED**

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**MINING LANDS SECTION**

**January 27, 1989**



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### SUMMARY

QPX Minerals Inc. optioned an 18-claim property from Mr. J.T. Arengi of Toronto during the latter part of 1988. The property is located in Bartlett Township within the Porcupine Mining Division about 45 km by road south of Timmins, Ontario.

Neil D.S. Westoll & Associates Ltd. managed a diamond drilling campaign on the property in December, 1988. The purpose of the drilling campaign was to attempt to confirm the results of a 1970 diamond drill hole, which was reported to have intersected iron formation which graded 9.6 g/t gold over 1.77 m.

Prior to the commencement of drilling, the target iron formation was located by ground magnetics carried out under the supervision of Mr. J.B. Boniwell of Excalibur International Consultants Ltd. Three BQ-size diamond drill holes aggregating 288.95 m in depth were completed on the target and iron formation was intersected in all three holes. Assays have shown that there were no anomalous gold values in any of the iron formation intersected. Further work on this particular drill target is not recommended.

### INTRODUCTION

Mr. J.T. Arengi (Arengi) recognized the potential importance of the Boomerang Lake Property, located in Bartlett Township, Porcupine Mining Division, District of Timiskaming, during 1988. Arengi had discovered that there was an apparently economically significant gold assay recorded in the log of a 1970 diamond drill hole, and he considered that this gold value, if reliable, represented a potential gold exploration target. Arengi staked the ground about the 1970 diamond drill collar and, wishing to involve a senior partner to finance the next stage of exploration, was introduced to QPX Minerals Inc. (QPX) of Vancouver. QPX optioned the property in the latter part of 1988.

Neil D.S. Westoll & Associates Ltd. (Westoll) carried out an exploration program on the Arengi Property on behalf of QPX. The exploration program included the drilling of three diamond drill holes to verify the 1970 drill result.

This report discusses the planning, execution and results of the drilling campaign. The drilling campaign was a part of a larger exploration program, the results of which are not discussed here. Recommendations are made regarding the specific target tested by the drilling but no conclusions are reached concerning the potential of the rest of the Boomerang Lake Property.

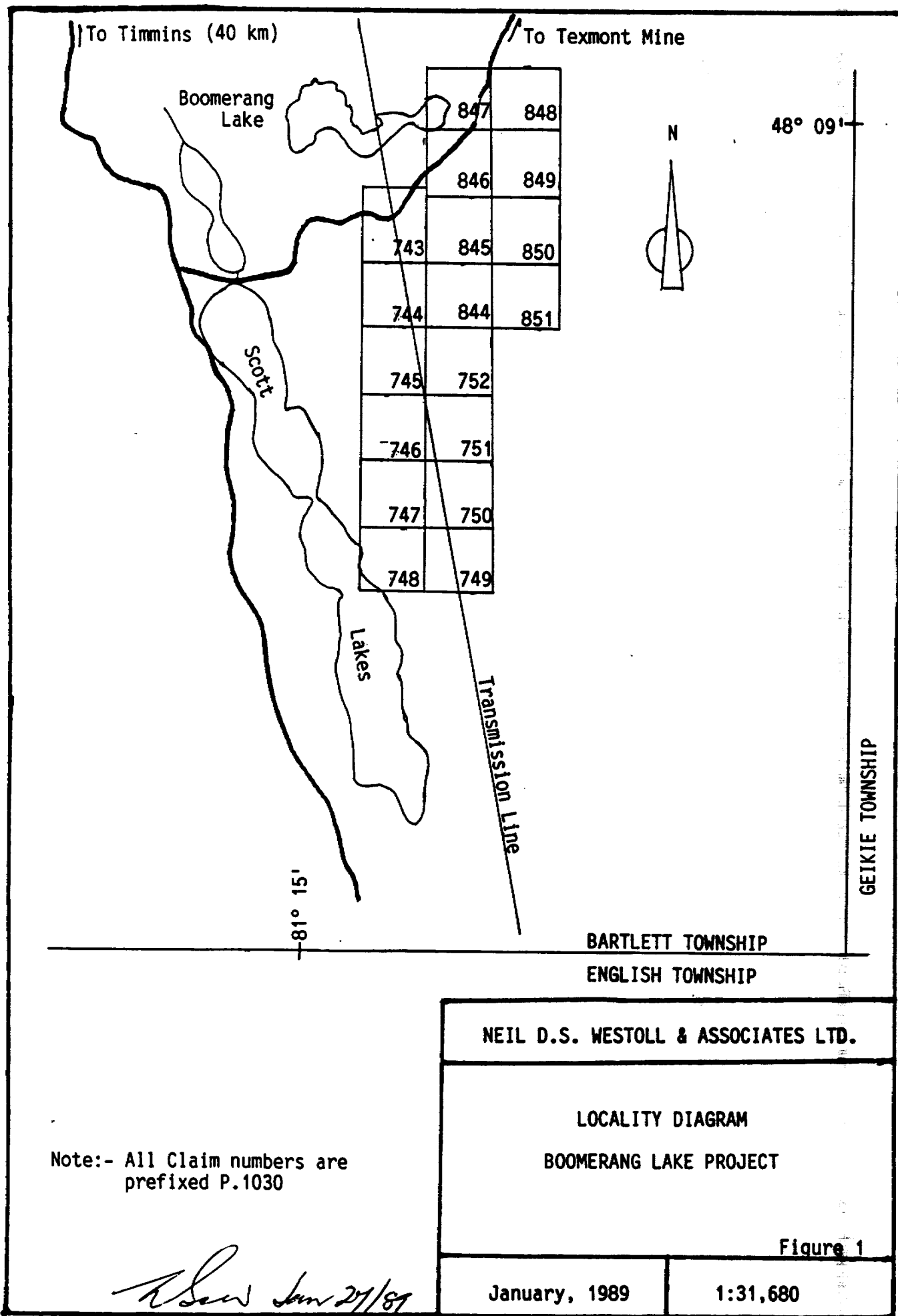
### PROPERTY DESCRIPTION

The Boomerang Lake Property consists of 18 unpatented mineral claims located in Bartlett Township, in the Porcupine Mining Division, District of Timiskaming. The claims, which are contiguous, form an rectangle elongated north-south. The location and disposition of the claims are shown on Figure 1. The claims making up the Boomerang Lake Block are:

<u>Claim Numbers</u>	<u>No. of Claims</u>	<u>Status</u>
1030743-1030752	10	Unpatented
1030844-1030851	8	Unpatented
	<u>18</u>	

The Boomerang Lake Property is located about 45 km south of Timmins. Access to the property is gained along a well-maintained secondary road, the continuation of Pine Street South from the City of Timmins. A bush road, which leads to the Texmont Mine, turns off the main road near the Scott Lakes. An Ontario Hydro main transmission line crosses the property. The specific drill collar locations discussed in this report were located about 200 m east of the transmission line and vehicle access along the transmission line to the point opposite the collar locations was possible.

The claim block is forested with typical northern forest species. Much of the timber in the area drilled is poor quality and significant numbers of fallen trees were present. The



variation in elevation near the drill collars was small but variations in elevation of 10 to 20 m were noted towards Boomerang Lake, the source of much of the water used during drilling.

#### REGIONAL GEOLOGY

The Boomerang Lake Property is located within the Abitibi Greenstone Belt of the Superior Province. Bartlett Township forms part of a larger area mapped by Pyke (1978). Broadly, in the Timmins district, Pyke recognized the presence of two komatiite-felsic volcanic cycles which he named the Deloro and Tisdale Groups. Both of the groups display a transition from komatiite through mafic and felsic volcanic rocks to sediments, typically iron formations.

The rocks which formed the target for the drilling discussed here were iron formation located towards the top of the Deloro Group, close to the komatiites which form the lower part of the Tisdale Group. Within the claim group these rocks strike approximately north-south and dip steeply eastward.

While drilling showed the presence of both iron formation and felsic volcanic rocks in the target area a significant amount of mafic dyking was also noted. It is considered that there were a number of different periods of mafic dyking, both on textural and geochemical grounds. Epizonal felsic intrusive rocks are mapped immediately north of the claim group but drilling did not

intersect any of these rocks.

### PREVIOUS EXPLORATION

Property and district-wide exploration have been covered in a report prepared by Arengi (1988). No effort was made to expand on this research and any further data required should be sought from this report. The specific target of the 1988 drilling was an intersection obtained by Silver Summit Mines Limited (Silver Summit) in 1970. The target of the Silver Summit exploration was, ostensibly, nickel mineralization similar to the nearby Texmont Mine. The specific target of of their DDH #10 was a geophysical anomaly.

Despite snow cover in December, 1988 it was apparent that there were no rocks cropping out near the surface projection of the 1970 -drill target. DDH #10 was drilled west at  $-45^{\circ}$  to a depth of 152.40 m, and the hole intersected 63.4 m of 'Feldspar Porphyry' followed by 14.02 m of iron formation. The geology below the iron formation was variable but consisted mainly of mafic and intermediate rocks. The high gold value occurred within the Iron Formation and corresponded to an intersection of higher than average sulphide content. As noted above, the intersection of interest assayed 9.6 g/t gold over 1.77 m at a down hole depth of 79.00 m.

Westoll made substantial efforts to confirm the reliability of the log prior to commencing the exploration program. While



several people associated with the Silver Summit program remembered the work neither confirmation nor refutation of the favorable intersection could be made. Arengi had previously attempted to locate the collar position of DDH #10 on the ground and further attempts were made prior to the commencement of drilling. No stand pipe was located in either attempt.

Prior to the 1988 drilling there was some snow cover in the supposed collar position of DDH #10 but it was considered that if the hole collar had been present it should have been visible, although there were also significant numbers of fallen trees about the presumed collar position. Drilling activities associated with the 1988 campaign led to the clearing of a fairly significant area around the supposed position of the former hole and again no stand pipe was located. It must therefore be assumed that the casing was not left in the hole after the previous drilling.

#### THE 1988 DRILLING CAMPAIGN

The main objective of the 1988 campaign was to attempt to confirm the drill intersection obtained in 1970 by Silver Standard.

The first stage of this work was to carry out sufficient geophysics to allow the configuration of the iron formation to be determined to allow the drill holes to be properly located with respect to the target. This work was carried out under the

HOLE NUMBER	EASTING	NORTHING	AZIMUTH	DIP	LENGTH M	REC. %	O/B
88-BB-01	382.50	457.50	278.00	-51.00°	90.22	99.49	9.14
88-BB-02	403.00	452.00	278.00	-51.00°	74.98	99.94	7.92
88-BB-03	403.00	484.00	278.00	-50.00°	123.75	100.00	9.14
					288.95		26.20

DIAMOND DRILL HOLE LOCATION AND ORIENTATION DATA

Note:- Coordinates refer to the geophysical grid on the property.

supervision of Mr. J.B. Boniwell of Excalibur International Consultants Ltd. of Port Credit, Ontario and is the subject of a separate report.

Prior to drilling, sufficient geophysics was carried out to outline the iron formation on cut lines 3S, 4S and 5S. This work showed the presence of a magnetic anomaly, considered to be iron formation, essentially where one would have been expected from the Silver Summit work. While other iron formations were present on the grid they are spatially removed from the target area.

Diamond drilling commenced December 9, 1988 and was carried out by Dominik Drilling (1981) Inc. of Val d'Or, P.Q. All three holes were drilled BQ size. Initially water for drilling was obtained from a swamp about 200 m from the drill collars but cold weather froze the swamp and subsequently water was obtained from Boomerang Lake using a 900 m water line. The casing was removed from each hole upon completion of the drilling. The final hole was completed December 16, 1988. An acid test was carried out in each hole to measure dip variation in the holes. All drilling activities were handled in a professional manner by Dominik.

The diamond drill core was logged at the Timmins Core Library of the Ministry of Northern Development and Mines. Core selected for sampling was split using a mechanical splitter in the Core Library. Some 88 samples were taken. The remaining core is temporarily stored in the Core Library.

The core samples were dispatched to Swastika Laboratories at Swastika, Ontario. All samples were analysed for gold using a

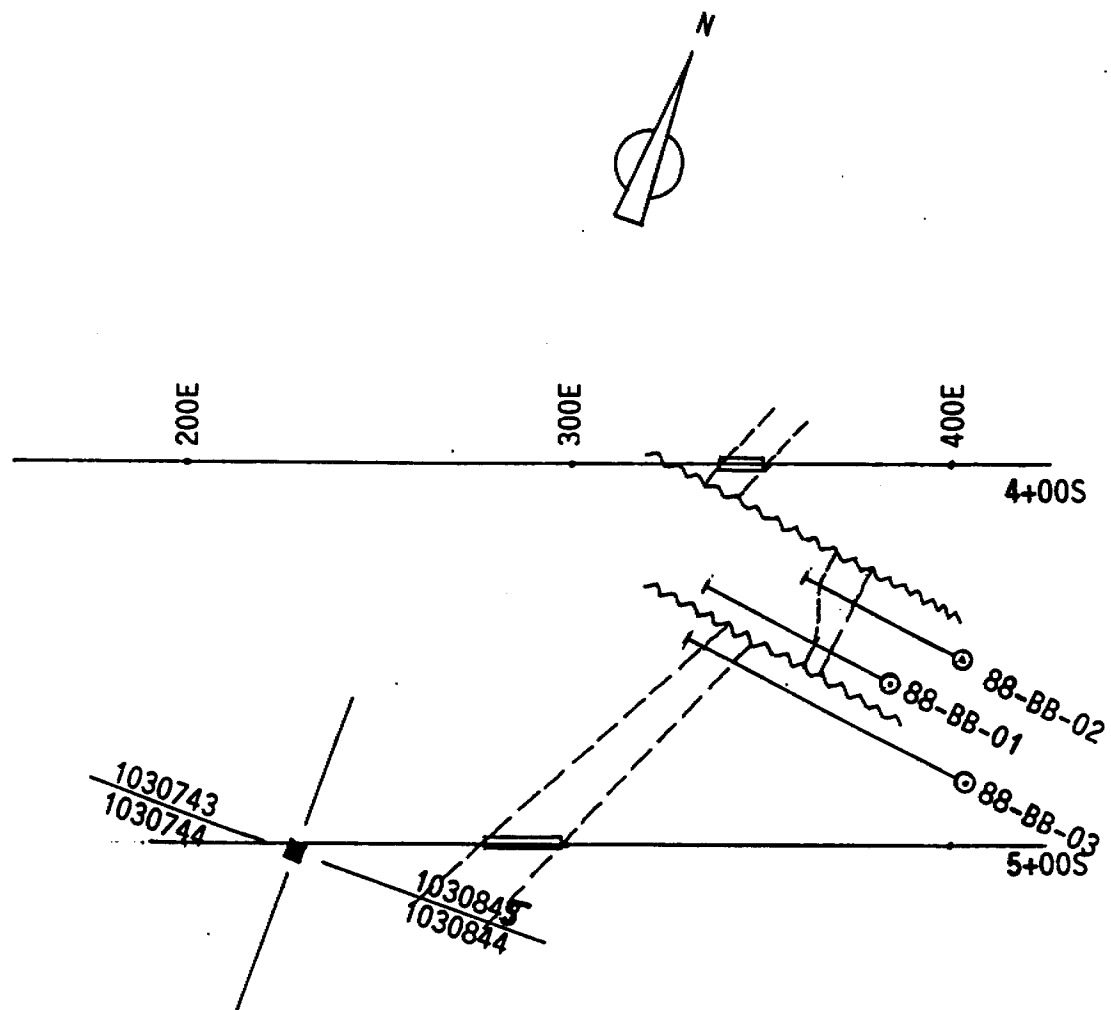
fire assay/AAS follow-up technique. In all cases a 1 assay ton fusion was used. Gold values were reported in parts per billion (ppb) with a limit of detection of 5 ppb Au. All samples were also analysed for copper and nickel by AAS techniques. Swastika Laboratories routinely re-assay a number of their samples as an internal check. As further confirmation of the gold values obtained, the reject material for 10 samples was dispatched to the Toronto offices of Chemex Labs Ltd. for re-assay by fire assay. No discrepancies with the Swastika results were found. Copies of the assay certificates are given in Appendix II.

#### RESULTS OF THE DRILLING CAMPAIGN

The collar positions of the diamond drill holes relative to the grid and the positions of the magnetic anomalies are summarized in Figure 2.

On the basis of the magnetic results the first hole (numbered 88-BB-01) of a three-hole program was laid out. The iron formation target was intersected appreciably closer to the collar of the first hole than planned and the hole was extended some distance into the footwall to cover the possibility that there was more than one iron formation in the target area. No second iron formation was located.

DDH 88-BB-02 was collared behind and slightly north of the first hole. Iron formation was again intersected and the position of the iron formation is consistent with a unit dipping



- ⊙ DDH Collar
- ~~~~ Fault
- Magnetic Anomaly
- Claim Post, Lines

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BOOMERANG LAKE PROJECT

DDH LOCATIONS AND IRON  
FORMATION INTERPRETATION

Figure 2

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vertically. However, as shown on the sections which form Figures 3 to 5, the iron formation thickens appreciably between 88-BB-01 and 88-BB-02.

The third hole, 88-BB-03 was collared further back of both of the first two holes and slightly south of 88-BB-01. A comparatively thick intersection of iron formation was obtained but it was found to be somewhat deeper down hole than expected. It is considered that there is some structural disruption between 88-BB-03 and the first two holes. A likely interpretation for the relative positions of the iron formation consistent with magnetic and drilling results is shown in Figure 2.

None of the core obtained during drilling was considered to be highly altered though carbonate veining was extensive and there was local quartz veining. Weak pervasive carbonate alteration was present in some of the rock units and was recorded regionally by Pyke (1978). Locally some of the chert of the iron formation was recrystallized, particularly in 88-BB-03, but there is no apparent correlation between recrystallization and the higher gold values obtained during the drilling.

Assay results are shown on the attached logs (Appendix I) and on the Assay Certificates in Appendix II. The highest gold value obtained was 145 ppb and most values obtained were significantly below this value (ie. 10 to 20 ppb). There is an apparent direct relationship between the higher gold values and amount of sulphide present in the iron formation. Weak copper and nickel values were obtained, but the highest values of both

metals were low in an economic sense (copper - 1050 ppm, nickel-1417 ppm).

#### CONCLUSIONS AND RECOMMENDATIONS

The primary objective of the diamond drilling carried out as part of the Boomerang Lake Project was to confirm the existence of the gold recorded in the Silver Standard log for their Hole #10. The results obtained are considered to indicate that the assay obtained by Silver Standard was unreliable.

Obviously the question must arise as to how close the 1988 diamond drilling was to the 1970 drilling. The fact that the 1970 collar was not relocated means that this question cannot be resolved unequivocally, but it is considered that the maps available from the 1970 era allow reasonable limits to be placed on the position of the 1970 collar and the 1988 drilling tested close to this position. Further, the magnetic results are interpreted to indicate that the iron formation is sufficiently far from any other magnetic conductor to avoid any possibility of confusion in testing the correct iron formation.

It is concluded that the 1988 diamond drilling has eliminated any potential for gold mineralization in iron formation in the area tested. For this reason it is concluded that the 1970 testing was unreliable. It is recommended that no further work be carried out to verify the 1970 drill result.

REFERENCES

- Arengi, J.T. (1988) Report on the 18-claim Bart Property, Bartlett Township, Northeast Ontario. Unpublished report.
- Boniwell, J.B. (1988) Regional Assessment of Mineral Environment at Boomerang Lake, Bartlett Township, Ontario. Unpublished Report for Neil D.S. Westoll & Associates Ltd.
- Pyke, D.R. (1978) Geology of the Redstone River Area, District of Timiskaming. Geoscience Report 161
- Pyke, D.R. (1982) Geology of the Timmins Area, District of Cochrane. OGS Report 219




CERTIFICATE OF QUALIFICATIONS

As the author of this report on the Boomerang Lake diamond drilling program for Neil D.S. Westoll & Associates Ltd., I hereby make the following statements:

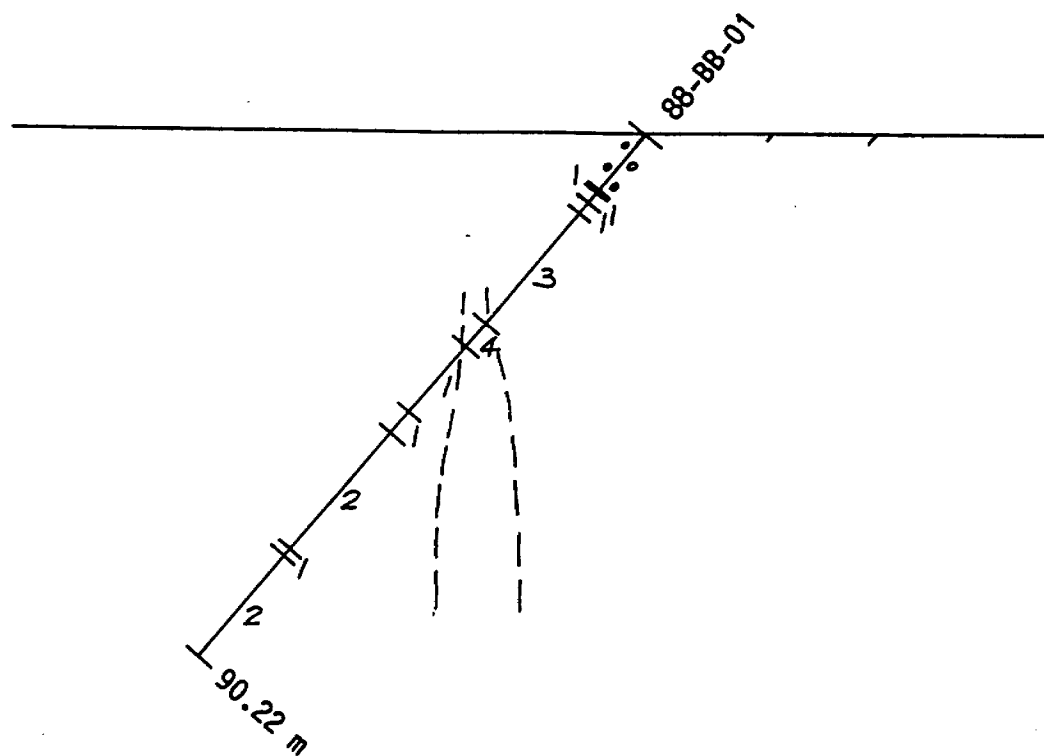
1. My name is Neil N. Gow and I am a geologist residing at 678 Powell Court, Burlington, Ontario. I have been retained by Neil D.S. Westoll & Associates Ltd. in connection with the Boomerang Lake Property.
2. I am a graduate of the University of New England, Armidale, New South Wales with a B.Sc. (Hons.) and I have been practicing my profession continuously for twenty-three years.
3. I am a Fellow of the Geological Association of Canada and a member of both the Canadian Institute of Mining and Metallurgy and the Prospectors and Developers Association of Canada.
4. This report is based on personal observation and a limited amount of published data. A number of unpublished technical reports were also available to the writer.
5. I consent to the use of this report by Neil D.S. Westoll & Associates Ltd. and QPX Minerals Inc.
6. I have not received nor do I expect to receive any interest in the Boomerang Lake Property. I do not beneficially own nor do I expect to receive any securities of QPX Minerals Inc. or any affiliate.

Dated at Toronto, Ontario  
January 27, 1989

  
Neil N. Gow, B.Sc.(Hons.)

LEGEND FOR FIGURES 3 TO 5

4. Iron Formation, includes silicate, sulphide and oxide facies rocks
3. Feldspar crystal tuff
2. Gabbro
1. Mafic rocks, includes mafic volcanics and a number of intrusive mafic rocks.



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BOOMERANG LAKE PROJECT

SECTION DDH 88-BB-01

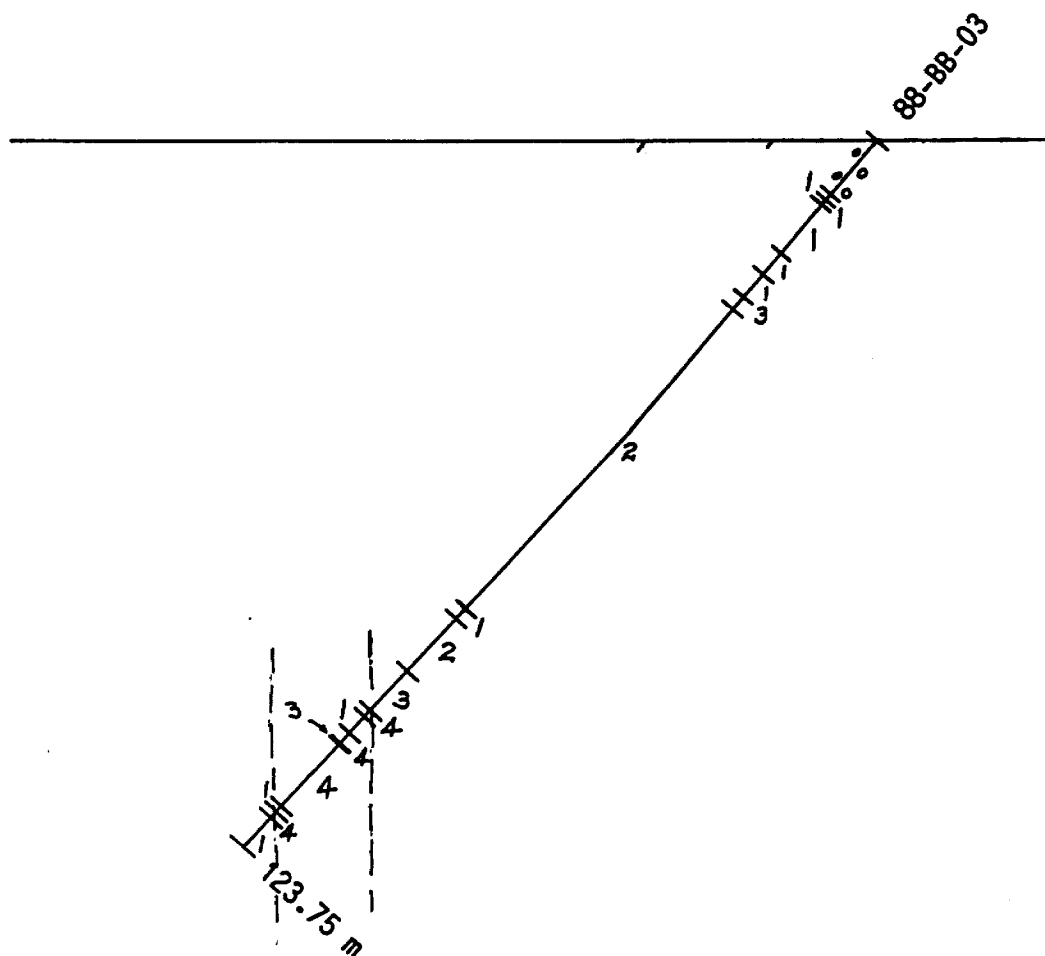
Figure 3

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*N. D. S. Westoll Jan 27/89*

2 Dec Jan 27/89



NEIL D.S. WESTOLL & ASSOCIATES LTD.

BOOMERANG LAKE PROJECT  
SECTION DDH 88-BB-03

Figure 5

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*N. Westoll Jan 24/89*

APPENDIX I: DIAMOND DRILL LOGS FOR DDH 88-BB-01 TO 88-BB-03

## DIAMOND DRILL LOG

DDH 88-BB-01

Sample No.	Au ppb	Cu ppm	Ni ppm
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0 - 9.14 Overburden

- 9.21 Fg mafic rock, massive, few grains of sulphide. No contacts seen.

- 9.80 Mg mafic rock. Core badly broken - in part double drilled. Small qv 0.5 cm wide in one piece of core. Lower contact sharp, straight, CA 40°. Pervasive carbonate alteration present.

- 11.35	Fg mafic rock. Appreciable number of fine carbonate veins at variable core angles. Lower contacts sharp slightly irregular, CA 40°. Few percent pyrite present.	1401	nil	125	71
---------	---	------	-----	-----	----

Sample 1401 9.80-11.35 m (1.55 m)

- 13.60	Melanocratic mg-cg mafic rock. Equigranular, unfoliated. Local shearing with some carbonate veining. Some carbonate veins about 1 mm wide - core angle variable - veins typically straight, some irregular. Weak pervasive carbonate alteration. Core broken near lower contact - some pug. Contact angle probably 35°.	1402	5	76	139
		1403	5	62	132

Sample 1402 11.35-12.85 m (1.50 m)

1403 12.85-13.60 m (0.75 m)

- 32.07	Feldspar crystal tuff. Grey rock with white feldspar crystals up to 1 cm. Locally other lapilli present. No banding recognized. Carbonate veining (fine, straight or irregular)	1404	nil	66	33
		1405	nil	38	36
		1406	nil	35	31
		1407	nil	37	33
		1408	10	20	46

common. Some qtz-carbonate-chlorite veining at 18.90, CA 25°.

Local, weak, pervasive carbonate alteration. Locally pyrite present, particularly 16.10-16.50 (1 to 2%). Small cubes upto 1 mm, in part associated with carbonate.

Sample 1404 16.00-17.00 m (1.00 m)  
 1405 17.00-18.00 m (1.00 m)  
 1406 20.50-21.50 m (1.00 m)  
 1407 21.50-22.50 m (1.00 m)  
 1408 31.07-32.07 m (1.00 m)

- 36.27 Iron formation. Mixed oxide-silicate-sulphide IF. 1409 nil 29 54  
 1410 140/ 360 118  
 145  
 Po prominent 32.20-32.33 1411 15 417 41  
 (massive), 32.50-33.05 (30%) 1412 nil 26 24  
 35.75-36.27 (massive 36.02- 1413 nil 26 27  
 36.27) 1414 nil 592 44  
 Upper and lower contacts 1415 nil 357 165  
 difficult to pick -  
 gradational over a few cm.  
 CA 40° @ 33.50  
 30° @ 35.50  
 Minor chalcopyrite with po.  
 Most sulphide banded, some  
 in small tension gashes.

- Sample 1409 32.07-32.20 m (0.13 m)  
 1410 32.20-32.33 m (0.13 m)  
 1411 32.33-33.10 m (0.77 m)  
 1412 33.10-34.40 m (1.30 m)  
 1413 34.40-35.75 m (1.35 m)  
 1414 35.75-36.02 m (0.27 m)  
 1415 36.02-36.27 m (0.25 M)

- 47.75 Massive, intermediate to mafic rock. Upper contact 1416 nil 27 819  
 with IF is gradational 1417 nil 32 1180  
 suggesting rock is volcanic.  
 Lower contact structural.  
 Rock is composed of mg  
 equigranular, felted,  
 amphibole minerals.  
 Carbonate veining is common.  
 10 cm (true) of multiple  
 carbonate vein 46.35-46.45 @  
 30° to CA.



Mafic dykes 37.85-37.95 CA variable  
 38.30-38.40 CA 45°  
 38.45-38.65 CA 30°  
 38.89-38.95 Ca 30°

Weak pervasive carbonate  
 alteration.

Sample 1416 36.27-37.27 m (1.00 m)  
 1417 40.00-41.00 m (1.00 m)

- 51.00 Mafic rock. Zone shows 1418 nil 126 591  
 intense silicate stockwork 1419 nil 96 136  
 alteration, particularly 1420 nil 32 178  
 50.00-50.90. Rock may be  
 altered equivalent of rock  
 above.  
 No sulphides noted.  
 Carbonate alteration present  
 in veinlets and as pervasive  
 alteration.

Sample 1418 48.00-49.00 m (1.00 m)  
 1419 49.00-50.00 m (1.00 m)  
 1420 50.00-51.20 m (1.20 m)

- 51.20 Lamprophyre dyke. Biotite  
 lamprophyre, partly sheared.

- 71.23 Equigranular mg gabbro. No 1421 nil 70 98  
 banding noted. Upper contact 1422 nil 62 100  
 straight, sharp CA 60°, 1423 nil 7 16  
 lower contact straight, 1424 5 87 81  
 sharp, CA 60°. 1425 30/ 564 275  
 Only minor carbonate 35  
 veining, no pervasive 1426 nil 59 190  
 alteration. 1427 nil 72 83  
 Minor shear zones present, 1428 nil -43 77  
 particularly 71.90-72.20.  
 qv 53.83-53.92 (CA 75°)  
 60.73-60.80 (CA 60°)  
 68.28-68.36 (CA 30°)

Sample 1421 51.20-52.20 m (1.00 m)  
 1422 52.80-53.80 m (1.00 m)  
 1423 53.80-53.90 m (0.10 m)  
 1424 53.90-54.90 m (1.00 m)  
 1425 60.22-60.72 m (0.50 m)  
 1426 60.72-60.80 m (0.08 m)  
 1427 60.80-61.30 m (0.50 m)  
 1428 68.07-68.57 m (0.50 m)

- 72.70 Fg massive grey intermediate rock (dyke?). Contacts sharp, slightly irregular, CA 50°. 1 to 2% pyrite as cubes, about 1 mm square.

- 90.22	Mg gabbro. Generally	1429	nil	77	76
	structureless though some	1430	5	108	73
	minor shears present.	1431	5	63	71
	Some carbonate veining, veins up to 15 mm, typically CA 45° or steeper. Few qtz-carbonate veins (with minor feldspar)				

Sample	1429	81.14-81.64 m	(0.50 m)
	1430	87.70-88.20 m	(0.50 m)
	1431	89.22-90.22 m	(1.00 m)

E.O.H.

Hole Surveys	Collar	-51°
	60.96 m	-50°
Azimuth		278° True

Check Analyses	1410	0.010 oz/ton Au (350 ppb)
	1411	<0.002 oz/ton Au (<70 ppb)
	1412	<0.002 oz/ton Au (<70 ppb)

# DIAMOND DRILL LOG

DDH 88-BB-02

Sample No.	Au ppb	Cu ppm	Ni ppm
---------------	-----------	-----------	-----------

0 - 7.92 Overburden

- 24.30 Mg gabbro, melanocratic, grainsize diminishes over final 2 m (chill margin). Lower contact sharp, apparently structural with calcite veining, CA 30°.

Some veining present. Number of pegmatite (cg qtz-feld) veins up to 1 cm, typically steep core angles. Qtz-carbonate veins, typically irregular, with variable core angles up to 1 cm thick. No pervasive carbonate alteration noted. Minor disseminated pyrite, >1%.

- |         |   |      |     |    |    |
|---------|---|------|-----|----|----|
| - 30.75 | Feldspar crystal tuff with feldspar phenocrysts up to 1 cm. Feldspars are typically ghost-like with diffuse contacts. Entire zone shows appreciable fine silicate veining (stockwork). Veins are rarely more than 2 to 3 mm at variable angles. Some minor carbonate veining. No pervasive carbonate alteration noted. Some pyrite present, <1% but locally up to 2%, notably 28.10 to 28.40. | 1432 | nil | 29 | 23 |
|         |   | 1433 | nil | 27 | 33 |

Sample 1432 27.00-28.00 m (1.00 m)  
1433 28.00-29.00 m (1.00 m)

- 33.70 Sheared mafic rock - probably mafic lapilli tuff. CA schistosity 40°. Upper contact in section of broken core, lower contact sharp, straight, parallel to schistosity.

Appreciable fine carbonate veining, veins typically irregular, less than 2mm wide but locally up to 8 mm. Some pervasive carbonate alteration.  
Small mafic dyke, 2 cm wide, CA 40° at 33.33.

- |         |   |      |     |    |    |
|---------|---|------|-----|----|----|
| - 37.38 | Fg mafic dyke rock. Upper and lower contacts sharp, straight, CA 40° . Grainsize fines to contacts. Significant number of variably oriented, straight, fine qv (1 to 2 mm wide) Few carbonate veins present, no pervasive alteration. Few pyrite cubes noted, typically associated with veining, overall <1%. | 1434 | nil | 89 | 45 |
|---------|---|------|-----|----|----|
- Sample 1434 35.00-36.00 m (1.00 m)
- |         |   |  |  |  |  |
|---------|---|--|--|--|--|
| - 39.29 | Mg gabbro. Contacts sharp, straight, CA 30° to 40° . Rock is equigranular, massive, some carbonate veining and qtz veining <2mm wide. No pervasive carbonate alteration.                            |  |  |  |  |
| - 39.60 | Sheared mafic rock with some qtz-feldspar and carbonate veining parallel to schistosity. Apparently sheared wisps of mafic dyke material near contacts.   |  |  |  |  |
| - 41.65 | Gabbro, mg to cg with some minor shear zones, typically <1 cm wide. Few carbonate and qtz veins. No pervasive alteration. Lower contact straight, sharp, CA 40° . Essentially no sulphides present. |  |  |  |  |
| - 44.12 | Fg mafic dyke. Lower contact sharp, very irregular. Rock uniformly fg, massive. Some fine qtz-carbonate   |  |  |  |  |

veinlets <2 mm wide, most straight with variable orientations.

- 51.90 Gabbro. Initially mg to cg but fines down hole to lower contact. Rock massive. Few qtz and/or carbonate veins present. Banded vein about 1 cm wide at 51.00 includes some feldspar. No pervasive carbonate alteration. Lower contact sharp, straight CA 40°.

Sample 1435 51.40-51.90 m (0.50 m)

- 52.12 Iron Formation. Banded chert pyrrhotite rock. Chert bands 2 to 4 cm. Po bands typically up to 1 cm. Minor chalcopyrite and pyrite with po. CA 60°. Banding parallel to upper contact, but lower contact is highly discordant at 45°.

Fine (<1mm) tension veins with qtz-carbonate or sulphide subparallel to core but only about 1 cm long.

Sample 1436 51.90-52.12 m (0.22 m)

- 52.46 Lamprophyre dyke. Upper contact straight, discordant to IF banding, lower contact irregular but sharp. Rock contains coarse phenocrysts of biotite oriented subparallel to contacts.

Sample 1437 52.12-52.46 m (0.34 m)

- 65.95 Iron Formation. Interbanded silicate-chert-pyrrhotite-magnetite rock. 63.40 to 63.90 contains black, argillaceous chert. Banding shows some disruption in this area.

1435 nil 6 105

1436 10 767 94

1437 nil 294 158

1438 40 769 75  
1439 30/ 1010 69  
40  
1440 nil 554 84  
1441 10 213 43  
1442 40/ 51 28  
25

No indication of silicate or carbonate alteration.	1443	nil	36	30
Bedding 70 @ 52.46	1444	10	98	39
0 @ 52.66	1445	5	166	32
45 @ 52.90	1446	nil	124	29
45 @ 53.60	1447	5	297	41
40 @ 57.00	1448	nil	129	34
45 @ 59.40	1449	20	1050	155
45 @ 60.60	1450	5	175	37
60 @ 62.80	1451	nil	120	66
60 @ 64.30				
45 @ 65.84				

Sample 1438 52.46-53.46 m (1.00 m)  
 1439 53.46-54.46 m (1.00 m)  
 1440 54.46-55.46 m (1.00 m)  
 1441 55.46-56.46 m (1.00 m)  
 1442 56.46-57.46 m (1.00 m)  
 1443 57.46-58.46 m (1.00 m)  
 1444 58.46-59.46 m (1.00 m)  
 1445 59.46-60.46 m (1.00 m)  
 1446 60.46-61.46 m (1.00 m)  
 1447 61.46-62.46 m (1.00 m)  
 1448 62.46-63.46 m (1.00 m)  
 1449 63.46-64.46 m (1.00 m)  
 1450 64.46-65.46 m (1.00 m)  
 1451 65.46-65.95 m (0.49 m)

- 66.55 Mainly cg gabbro. with wisps and small bands of IF. Some irregular quartz veining mainly 66.45 to 66.55. Contacts sharp, but irregular. Minor fine carbonate veining. Some po and cp with IF. 1452 10 39 57

Sample 1452 65.95-66.55 m (0.60 m)

- 66.89 Iron Formation, mainly silicate facies with some clots of qtz (up to 2-3 cm) Few percent po and py. 1453 5 351 79

Sample 1453 66.55-66.89 m (0.34 m)

- 74.98 Gabbro. Mg to 69.00 then cg. Rock equigranular and massive with a few sulphide clots 69.60 to 70.00. Qtz-carbonate-po vein 4 mm wide at 71.48, CA 35°. Some weak carbonate veining, 1454 5 144 143  
 1455 10 393 247

no pervasive alteration.

Sample 1454 66.89-67.89 m (1.00 m)  
1455 69.50-70.00 m (0.50 m)

E.O.H.

Hole Surveys Collar -51°  
60.96 m -50°  
Azimuth 278° True

Check Analyses	1437	<0.002 oz/ton Au (<70 ppb)
	1438	<0.002 oz/ton Au (<70 ppb)
	1439	<0.002 oz/ton Au (<70 ppb)
	1440	<0.002 oz/ton Au (<70 ppb)

## DIAMOND DRILL LOG

DDH 88-BB-03

		Sample No	Au ppb	Cu ppm	Ni ppm
0	- 9.14	Overburden.			
	- 9.66	Fg-mg mafic rock, probably finer grained gabbro. No significant veining present. Some core loss. Lower contact not clear. No pervasive alteration.			
	- 10.60	Fg mafic rock. Upper contact not clear, lower contact in small zone of shearing and carbonate veining. Rock olive green, massive, structureless, in part broken. Few percent pyrite in cubes typically <1 mm but few up to 2 to 3 mm from 10.50 to 10.60. Some fine carbonate veins, typically <1 mm wide. No pervasive alteration	1456	nil	41 139
		Sample 1456 10.20-10.60 m (0.40 m)			
	- 11.06	Fg to mg khaki green mafic rock. Lower contact at fine carbonate vein - straight, sharp, CA 15°. No carbonate veining apart from contacts, no pervasive alteration.			
	- 19.27	Fg mafic rock, lower contact at carbonate vein, CA 40°. Rock shows some silica stockwork and also weak pervasive alteration which locally gives the rock a brecciated appearance. Few fine, straight carbonate veins, no pervasive alteration. Some fg pyrite (<<1%) Few qtz veins, often irregular with some altered	1457 1458	nil nil	26 14 42 42



## DIAMOND DRILL LOG

DDH 88-BB-03

		Sample No	Au ppb	Cu ppm	Ni ppm
0	- 9.14	Overburden.			
	- 9.66	Fg-mg mafic rock, probably finer grained gabbro. No significant veining present. Some core loss. Lower contact not clear. No pervasive alteration.			
	- 10.60	Fg mafic rock. Upper contact not clear, lower contact in small zone of shearing and carbonate veining. Rock olive green, massive, structureless, in part broken. Few percent pyrite in cubes typically <1 mm but few up to 2 to 3 mm from 10.50 to 10.60. Some fine carbonate veins, typically <1 mm wide. No pervasive alteration	1456	nil	41 139
		Sample 1456 10.20-10.60 m (0.40 m)			
	- 11.06	Fg to mg khaki green mafic rock. Lower contact at fine carbonate vein - straight, sharp, CA 15°. No carbonate veining apart from contacts, no pervasive alteration.			
	- 19.27	Fg mafic rock, lower contact at carbonate vein, CA 40°. Rock shows some silica stockwork and also weak pervasive alteration which locally gives the rock a brecciated appearance. Few fine, straight carbonate veins, no pervasive alteration. Some fg pyrite (<<1%) Few qtz veins, often irregular with some altered	1457 1458	nil nil	26 42 14 42

feldspar. Veins up to 2 cm,  
orientation variable.

Sample 1457 15.07-16.07 m (1.00 m)  
1458 16.07-17.07 m (1.00 m)

- 23.18 Fg mafic rock. Does not show 1459 10/ 202 59  
alteration of section above. 15  
Rock coarser after 21.35 (or  
new rock type).  
Some qtz veining present,  
with cg pyrite.  
Lower contact sharp, slightly  
irregular.  
Some fg carbonate veining.
- Sample 1459 20.12-21.12 m (1.00 m)
- 27.09 Feldspar crystal tuff, fresh  
feldspar phenocrysts sharp up  
to 1 cm.  
25.96 to 26.06 band, probably  
interbedded sediment.  
Contacts not parallel, 15°  
and 30°.  
Minor fine carbonate veining.
- 29.20 Contact zone between tuff and  
gabbro. Amoeboid pieces of  
tuff with 0.5 cm alteration  
rims present in gabbro.  
Some minor silicate veining,  
multiple veins over 1.5 cm at  
27.69 at CA 20°.
- 81.45 Gabbro. Typical massive, mg  
to cg gabbro. Almost no  
alteration or carbonate  
veining. Some textural  
variation over length.  
Few qv, few carbonate veins  
present. No pervasive  
alteration noted.
- 83.12 Fg to mg dark green mafic  
rock, dyke into gabbro.  
Upper contact, sharp,  
straight, CA 45°, lower  
contact sharp, irregular.  
Few fine carbonate veins.  
Rock shows pervasive  
carbonate alteration, some  
fg pyrite (<1%)

- 92.45	Gabbro. Initially mg but	1460	5	209	246
	becoming progressively finer	1461	5	82	161
	to lower contact.	1462	5	23	403
	2 cm qtz-feldspar vein CA 45° at 85.51. Few wider carbonate and qtz- carbonate veins. Irregular clot py. at 89.34 (about 3X1 cm) 91.06-91.20 zone with 5-10% pyrite in cubes up to 3 mm. Lower contact straight, sharp CA 45°.				
	Sample 1460 89.22-90.22 m (1.00 m)				
	1461 90.22-91.22 m (1.00 m)				
	1462 91.22-92.22 m (1.00 m)				
- 99.48	Feldspar crystal tuff. Rock	1463	nil	12	46
	not highly altered and feldspar grains are sharp and fresh. A number of qtz- feldspar veins, 1-2 cm wide generally at steep angles to core. Some fine carbonate veining (rare). Pervasive carbonate alteration not noted. Lower contact broken, seemed straight, sharp CA 60°.				
	Sample 1463 98.98-99.48 m (0.50 m)				
-100.76	Iron Formation. Interbedded	1464	5	604	53
	oxide-silicate facies IF with	1465	nil	62	17
	some silica recrystallization Pyrite present 99.48-99.62 (about 50%), otherwise content low (<2%). Bedding CA 60°. Minor irregular carbonate veining.				
	Sample 1464 99.48-100.08 m (0.60 m)				
	1465 100.08-100.76 m (0.68 m)				
-103.29	Mafic dyke. Fg to mg grey- green, massive to weakly	1466	nil	49	85
	banded rock, CA 25°. Few irregular carbonate veins, no pervasive alteration. Pyrite present (1% overall)	1467	nil	57	77

Sample 1466 100.76-101.26 m (0.50 m)  
 1467 102.79-103.29 m (0.50 m)

-103.41 Iron Formation. 1468 5 675 57  
 Recrystallized qtz with some  
 pyrite banding (5% sulphides)  
 CA 60°.

Sample 1468 103.29-103.41 m (0.12 m)

-103.55 Mafic dyke similar to 100.76 1469 nil 99 88  
 to 103.29.

Sample 1469 103.41-103.55 m (0.14 m)

-105.22 Iron Formation. Banded chert- 1470 10 820 82  
 sulphide-oxide IF. Chert in 1471 5 307 72  
 part recrystallized. Well  
 banded sulphide, 103.55-  
 104.55. Banded more disrupted  
 104.55-105.12. Massive po  
 105.12-105.19.  
 CA 80°.

Sample 1470 103.55-104.55 m (1.00 m)  
 1471 104.55-105.22 m (0.67 m)

-105.58 Felsic dyke with cg biotite 1472 nil 41 110  
 upto 3 mm long. Rock massive,  
 grey with pervasive carbonate  
 alteration.

Sample 1472 105.22-105.58 m (0.36 m)

-116.43 Iron Formation. Sulphide- 1473 20/ 655 106  
 oxide-silicate facies with  
 chert. 50  
 1474 10 140 22  
 1475 nil 50 16  
 105.58-106.18 Chert-sulphide, 1476 nil 53 19  
 in part sulphide is semi- 1477 10/ 36 20  
 massive. 40  
 1478 nil 40 22  
 106.18-113.24 Banded chert 1479 nil 61 24  
 and silicate facies rocks. 1480 5 54 26  
 Sulphide low, 1 to 2% 1481 10 1050 135  
 overall. Some disruption of 1482 10 884 107  
 banding by quartz between 1483 5 319 22  
 111.70 and 112.60 (no 1484 nil 24 27  
 sulphide in this intercept).  
 113.14-113.24 core cavernous  
 from oxidation.  
 CA 45° @ 108, 40° @ 109.50  
 50° @ 111.00.

Narrow discordant dyke 110.10-110.24. CA 20°.

113.24-116.05 Recrystallized quartz, locally semi-massive po, irregular and unbanded, locally disrupted.

116.05-116.43 Banded magnetite and silicate IF> CA 70°.

Minor local carbonate veining, typically fine and irregular. Much of the IF shows pervasive carbonate alteration.

Sample 1473	105.58-106.18 m	(0.60 m)
1474	106.18-107.18 m	(1.00 m)
1475	107.18-108.18 m	(1.00 m)
1476	108.18-109.18 m	(1.00 m)
1477	109.18-110.10 m	(0.92 m)
1478	110.23-111.23 m	(1.00 m)
1479	111.23-112.23 m	(1.00 m)
1480	112.23-113.24 m	(1.01 m)
1481	113.24-114.24 m	(1.00 m)
1482	114.24-115.24 m	(1.00 m)
1483	115.24-116.05 m	(0.81 m)
1484	116.05-116.43 m	(0.38 m)

-117.65	Fg to locally fg-mg mafic dyke. Massive with silicate veining. Minor carbonate veining.	1485	nil	10	18
		1486	5	8	25

Sample 1485	116.43-116.93 m	(0.50 m)
1486	117.15-117.65 m	(0.50 m)

-118.40	Iron Formation. Mainly silicate facies to 118.10, then recrystallized quartz with magnetite. Sulphide very minor, 1 to 2%. Some carbonate veining with quartz.	1487	nil	43	25
---------	--	------	-----	----	----

Sample 1487	117.65-118.40 m	(0.75 m)
-------------	-----------------	----------

-123.75	Fg to mg mafic rock. Near contact rock is fg but coarsens down hole. Rock composed of green minerals, no feldspar. Some local carbonate veining, no pervasive alteration.	1488	nil	70	92
---------	---	------	-----	----	----

Sample 1488 118.40-118.90 0.50

E.O.H.

Hole Surveys	Collar	-50°
	99.36 m	-47°
Azimuth		278° True

Check Analyses	1481	<0.002 oz/ton Au (<70 ppb)
	1482	<0.002 oz/ton Au (<70 ppb)
	1483	<0.002 oz/ton Au (<70 ppb)

APPENDIX II: ASSAY CERTIFICATES



# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

## Certificate of Analysis

Certificate No. 74070

Date December 27, 1988

Received December 18, 1988

88

Samples of Split Core

Submitted by Westoll & Associates Limited, Toronto, Ontario

SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM	SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM
1401	Nil	125	71	1423	Nil	7	16
1402	5	76	139	1424	5	87	81
1403	5	62	132	1425	30/35	564	275
1404	Nil	66	33	1426	Nil	59	190
1405	Nil	38	36	1427	Nil	72	83
1406	Nil	35	31	1428	Nil	43	77
1407	Nil	37	33	1429	Nil	77	76
1408	10	20	46	1430	5	108	73
1409	Nil	29	54	1431	5	63	71
1410	140/ 145	360	118	1432	Nil	29	23
1411	15	417	41	1433	Nil	27	33
1412	Nil	26	24	1434	Nil	89	45
1413	Nil	26	27	1435	Nil	6	105
1414	Nil	592	44	1436	10	767	94
1415	Nil	357	165	1437	Nil	294	158
1416	Nil	27	819	1438	40	769	75
1417	Nil	32	1180	1439	30/40	1010	69
1418	Nil	126	591	1440	Nil	554	84
1419	Nil	96	136	1441	10	213	43
1420	Nil	32	178	1442	40/25	51	28
1421	Nil	70	98	1443	Nil	36	30
1422	Nil	62	100				

Per

  
G. Lebel-Manager/rl



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





Swastika Laboratories

Certificate No. 74070

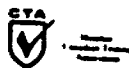
Page 2

SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM	SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM
1444	10	98	39	1474	10	140	22
1445	5	166	32	1475	Nil	50	16
1446	Nil	124	29	1476	Nil	53	19
1447	5	297	41	1477	10/40	36	20
1448	Nil	129	34	1478	Nil	40	22
1449	20	1050	155	1479	Nil	61	24
1450	5	175	37	1480	5	54	26
1451	Nil	120	66	1481	10	1050	135
1452	10	39	57	1482	10	884	107
1453	5	351	79	1483	5	319	22
1454	5	144	143	1484	Nil	24	27
1455	10	393	247	1485	Nil	10	18
1456	Nil	41	139	1486	5	8	25
1457	Nil	26	42	1487	Nil	43	25
1458	Nil	14	42	1488	Nil	70	92
1459	10/15	202	59				
1460	5	209	246				
1461	5	82	161				
1462	5	23	403				
1463	Nil	12	46				
1464	5	604	53				
1465	Nil	62	17				
1466	Nil	49	85				
1467	Nil	57	77				
1468	5	675	57				
1469	Nil	99	88				
1470	10	820	82				
1471	5	307	72				
1472	Nil	41	110				
1473	20/50	655	106				

NOTE: Samples were assayed using  
1 A.T. fusions

Per

G. Lebel-Manager/rl



Established 1928



TO WESTILL, D. S. & ASSOCIATES

207 - 8 KING ST. E.,  
TORONTO, ON  
M5C 1B5

Project :  
Comments: ATTN: N. GOW

\*\*Page No. : 1  
 Tot. Pages: 1  
 Date : 11-11-89  
 Invoice # : I-8910373  
 P.O. # :

**CERTIFICATE OF ANALYSIS    A8910373**

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY BC CERTIFIED ASSAYERS

## CERTIFICATION

N. Sentmanin



Ministry of  
Northern Development  
and Mines

Ontario

# Report of Work

(Geophysical, Geological,  
Geochemical and Expenditures)

DOCUMENT NO. Instructions: -- Please type or print  
W 8906-172 -- If number of mining claims traversed  
exceeds space on this form, attach a list.  
-- Only days credits calculated in the



42A03NE8465 2.12320 BARTLETT

900

Type of Survey(s)	Geochemical		
Claim Holder(s)	Mr. J.T. Arengi		
Address	113 Montrose Ave., Toronto, Ontario, M6J 2T6		
Survey Company	Date of Survey (from & to)	Total Miles of line Cut	
Swastica Laboratories Ltd./Chemex Labs	28 Dec 88   18 Jan 89	n/a	
Name and Address of Author (of Geo-Technical report)	N. Gow, 678 Powell Court, Burlington, Ont. L7R 3E8		

## Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total days	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.		

## Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
P	1030743	7.56			
	1030744	7.56			
	1030745	7.56			
	1030746	7.56			
	1030747	7.56			
	1030748	7.56			
	1030749	7.56			
	1030750	7.56			
	1030751	7.56			
	1030752	7.56			
	1030844	7.56			
	1030845	7.56			
	1030846	7.56			
	1030847	7.56			
	1030848	7.56			
	1030849	7.56			
	1030850	7.56			
	1030851	7.56			

RECEIVED  
MAR 22 1989  
RECORDED  
MINING LANDS SECTION  
FEB 15 1989

ONTARIO GEOLOGICAL SURVEY  
ASSESSMENT FILES  
OFFICE

AUG 04 1989

RECEIVED

RECEIVED  
FEB 15 1989

Total number of mining claims covered by this report of work

18

Expenditures (excludes power stripping)	
Type of Work Performed	Drill core assay
Performed on Claim(s)	P.1030845
Calculation of Expenditure Days Credits	
Total Expenditures	Total Days Credits
\$ 2041.50	÷ 15 = 136.10
Instructions Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.	

Date	Recorded (Initials) or (Signature)
Feb 15 / 1989	[Signature]

## Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true	
Name and Postal Address of Person Certifying	
N. Gow, 678 Powell Court, Burlington, Ont. L7R 3E8	
Date Certified	Certified by (Signature)
Feb 14 / 1989	[Signature]



File \_\_\_\_\_

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT  
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT  
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) LITHOGEOCHEMISTRY  
Township or Area BARTLETT  
Claim Holder(s) MR. J.T. ARENGI  
Survey Company NEIL D.S. WESTOLL & ASSOC. LTD.  
Author of Report N. GOW  
Address of Author 678 POWELL COURT, BURLINGTON  
Covering Dates of Survey \_\_\_\_\_  
(linecutting to office)  
Total Miles of Line Cut N/A

**SPECIAL PROVISIONS  
CREDITS REQUESTED**

ENTER 40 days (includes  
line cutting) for first  
survey.

ENTER 20 days for each  
additional survey using  
same grid.

**Geophysical**

—Electromagnetic \_\_\_\_\_

—Magnetometer \_\_\_\_\_

—Radiometric \_\_\_\_\_

—Other \_\_\_\_\_

**Geological** \_\_\_\_\_

**Geochemical** 7.56

**DAYS  
per claim**

**AIRBORNE CREDITS** (Special provision credits do not apply to airborne surveys)

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Feb 14/89 SIGNATURE: [Signature]  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications \_\_\_\_\_

**Previous Surveys**

File No. Type Date Claim Holder


**MINING CLAIMS TRAVERSED**  
List numerically

P. 1030743  
(prefix) (number)

P. 1030744

P. 1030745

P. 1030746

P. 1030747

P. 1030748

P. 1030749

P. 1030750

P. 1030751

P. 1030752

P. 1030844

P. 1030845

P. 1030846

P. 1030847

P. 1030848

P. 1030849

P. 1030850

P. 1030851

TOTAL CLAIMS 18

If space insufficient, attach list

OFFICE USE ONLY

# GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS — If more than one survey, specify data for each type of survey

Number of Stations \_\_\_\_\_ Number of Readings \_\_\_\_\_

Station interval \_\_\_\_\_ Line spacing \_\_\_\_\_

Profile scale \_\_\_\_\_

Contour interval \_\_\_\_\_

## MAGNETIC

Instrument \_\_\_\_\_

Accuracy — Scale constant \_\_\_\_\_

Diurnal correction method \_\_\_\_\_

Base Station check-in interval (hours) \_\_\_\_\_

Base Station location and value \_\_\_\_\_

## ELECTROMAGNETIC

Instrument \_\_\_\_\_

Coil configuration \_\_\_\_\_

Coil separation \_\_\_\_\_

Accuracy \_\_\_\_\_

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency \_\_\_\_\_  
(specify V.L.F. station)

Parameters measured \_\_\_\_\_

## GRAVITY

Instrument \_\_\_\_\_

Scale constant \_\_\_\_\_

Corrections made \_\_\_\_\_

Base station value and location \_\_\_\_\_

Elevation accuracy \_\_\_\_\_

Instrument \_\_\_\_\_

Method ☐ Time Domain ☐ Frequency Domain

Parameters — On time \_\_\_\_\_ Frequency \_\_\_\_\_

— Off time \_\_\_\_\_ Range \_\_\_\_\_

— Delay time \_\_\_\_\_

— Integration time \_\_\_\_\_

Power \_\_\_\_\_

Electrode array \_\_\_\_\_

Electrode spacing \_\_\_\_\_

Type of electrode \_\_\_\_\_

## INDUCED POLARIZATION RESISTIVITY

### SELF POTENTIAL

Instrument \_\_\_\_\_ Range \_\_\_\_\_

Survey Method \_\_\_\_\_

Corrections made \_\_\_\_\_

### RADIOMETRIC

Instrument \_\_\_\_\_

Values measured \_\_\_\_\_

Energy windows (levels) \_\_\_\_\_

Height of instrument \_\_\_\_\_ Background Count \_\_\_\_\_

Size of detector \_\_\_\_\_

Overburden \_\_\_\_\_

(type, depth — include outcrop map)

### OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey \_\_\_\_\_

Instrument \_\_\_\_\_

Accuracy \_\_\_\_\_

Parameters measured \_\_\_\_\_

Additional information (for understanding results) \_\_\_\_\_

### AIRBORNE SURVEYS

Type of survey(s) \_\_\_\_\_

Instrument(s) \_\_\_\_\_

(specify for each type of survey)

Accuracy \_\_\_\_\_

(specify for each type of survey)

Aircraft used \_\_\_\_\_

Sensor altitude \_\_\_\_\_

Navigation and flight path recovery method \_\_\_\_\_

Aircraft altitude \_\_\_\_\_ Line Spacing \_\_\_\_\_

Miles flown over total area \_\_\_\_\_ Over claims only \_\_\_\_\_

# GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken 1

Total Number of Samples 88

Type of Sample SPLIT DIAMOND DRILL CORE  
(Nature of Material)

Average Sample Weight \_\_\_\_\_

Method of Collection BR DIAMOND DRILLING

Soil Horizon Sampled N/A

Horizon Development N/A

Sample Depth N/A

Terrain N/A

Drainage Development N/A

Estimated Range of Overburden Thickness N/A

## SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis \_\_\_\_\_

CRUSHING, GRINDING

General \_\_\_\_\_

## ANALYTICAL METHODS

Values expressed in: per cent ☐  
p. p. m. ☒  
p. p. b. ☒

(Cu) Pb, Zn, (Ni) Co, Ag, Mo, As, (circle)

Others Au

Field Analysis (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Field Laboratory Analysis

No. (\_\_\_\_\_ tests)

Extraction Method FIRE ASSAY/AAS, AAS

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Commercial Laboratory (\_\_\_\_\_ tests)

Name of Laboratory SHASTIKA LABORATORIES LIMITED

Extraction Method \_\_\_\_\_

Analytical Method FIRE ASSAY/AAS, AAS

Reagents Used \_\_\_\_\_

General \_\_\_\_\_

NEIL D.S. WESTOLL & ASSOCIATES LTD.  
82 CHARTWELL RD.,  
OAKVILLE, ONT. L6J 3Z5

767

PAY TO THE  
ORDER OF

CHEMEX LABS LTD

June 13 1989  
\$ 127.50

ONE HUNDRED AND TWENTY SEVEN DOLLARS & 50¢ ONLY

DOLLARS

NEIL D.S. WESTOLL & ASSOCIATES LTD.

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PER

[Signature]

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119⑆124⑆6⑆

⑆0000012750⑆

⑆ CUSTOM CHEQUES OF CANADA / C

31 1989 AB

SECTION



THE CREDIT OF  
LABS LTD.

JA 89 27 JAN 89  
ROYAL BANK  
BRITISH  
COLUMBIA  
PC

300-09760-003  
THE ROYAL BANK  
OF CANADA  
LOVER OUSDALE  
VICTORIA  
300-09760-003

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# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,  
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: WESTILL, D. S. & ASSOCIATES

207 - 8 KING ST. E.,

TORONTO, ON

M5C 1B5

RECEIVED  
Jan. 24/89

\* INVOICE NUMBER 18910373 \*

## BILLING INFORMATION

Date : 18-JAN-89

Project :

P.O. # :

Account : GYX

Comments :

Billing : For analysis performed on  
Certificate A8910371

Terms : Net payment in 30 Days  
1.5% per month (18% per annum)  
charged on overdue accounts.

Please remit payments to:

CHEMEX LABS LTD.  
212 Brooksbank Ave.,  
North Vancouver, B.C.  
Canada V7J-2C1

We are pleased to announce that  
CHEMEX now accepts payment by  
\*\* VISA \*\*

CHEMEX CODE	ANALYSIS DESCRIPTION	SAMPLES ANALYZED	UNIT PRICE	AMOUNT
398 -	Au oz/T	10	8.75	87.50
Sample preparation and other charges :				
207 -	Assay - PULVERIZE	8	5.00	40.00
214 -	Received as pulp	2	0.00	0.00
Total Cost \$				127.50
TOTAL PAYABLE \$				127.50



TO : WESTILL, D. S. & ASSOCIATES

Project :  
Comments: ATTN: N. GOW

\*\*Page No. : 1  
Tot. Pages: 1  
Date : 17-JAN-89  
Invoice # : I-8910373  
P.O. # :

[illegible]

**CERTIFICATION :**

W. Stenroos



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TOTAL PAYABLE \$				127.50

82 CHARTWELL RD.,  
OAKVILLE, ONT. L6J 3Z5

765

January 6 1984

\$ 1914.00

**PAY TO THE ORDER OF**

SWASTIKA LABORATORIES LIMITED

ORDER OF  
ONE THOUSAND NINE HUNDRED AND FORTY DOLLARS ONLY

DOLLARS

NEIL D.S. WESTOLL & ASSOCIATES LTD.

Invoice 1932 - last

THE ROYAL BANK OF CANADA  
MAIN BRANCH  
279 LAKESHORE RD. E.  
OAKVILLE, ONT.

**PER**

1:0350 2:0031:

119... 124... 6#

0000191400

④ CUSTOM CHEQUES OF CANADA / C

RECEIVED

31 1989 AB

MINING LANDS SECTION

DEPOSIT TO THE CREDIT OF  
**SWASTIKA LABORATORIES**  
 TR. #19282-004 ACC. #0813-0876808

*Jan 12, 1989*  
*# 19232*

27442 001  
 --- THE ---  
 --- TORONTO-DOMINION ---  
 --- BANK ---  
 --- 12 GOVERNMENT ---  
 --- KIRKLAND ---  
 --- ONTARIO ---  
 --- 27442 001 ---

JA '89' 23  
 TORONTO DOMINION BANK  
 TORONTO DATA CENTRE  
 TORONTO, ONTARIO

7 6 4  
 0 1 1 7 0 8 2 7 4 4  
 27442 001



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

JOUR 28 DAY | DATE MOIS Dec MONTH | ANNEE 1988 YEAR

TRANSPORTEUR  
SHIPPED VIA

**VENDU À  
SOLD TO**

**1.5% LATE CHARGE OVER 30  
DAYS (ANNUAL RATE 18%)**

TAN 6/89

NO. D'EXEMPT. DE TAXE FÉD.		NO. D'EXEMPT. DE TAXE PROV.		VOTRE NO. DE COMMANDE		NOTRE NO. DE COMMANDE		CONDITIONS NET 30 DAYS		REP. DES VENTES	
FED. LICENCE NO.		PROV. LICENCE NO.		YOUR ORDER NO.		OUR ORDER NO.		TERMS		SALES TAX	
QUANTITÉ QUANTITY		DESCRIPTION						PRICE UNIT PRICE		TOTAL AMOUNT	
88		Au assays using 1 A.T. fusions						\$ 9.75		\$ 858.00	
88		Cu Ni PPM						9.00		792.00	
88		Sample Handling						3.00		264.00	
		Cert.#74070 Dec. 27, 1988									

FACTURE/INVOICE ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS  
ESTABLISHED 1928





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

JOUR 28 DAY | DATE MOIS Dec MONTH | ANNEE 1988 YEAR

TRANSPORTEUR  
SHIPPED VIA

**VENDU A  
BOLD TO**

**1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)**

RECORDED  
JAN 6/89

[illegible]

FACTURE/INVOICE ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS  
ESTABLISHED 1928





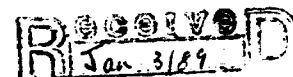


Established 1928

# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation



## Certificate of Analysis

Certificate No. 74070

Date December 27, 1988

Received December 18, 1988

88

Samples of Split Core

Submitted by Westoll & Associates Limited, Toronto, Ontario

SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM	SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM
1401	Nil	125	71	1423	Nil	7	16
1402	5	76	139	1424	5	87	81
1403	5	62	132	1425	30/35	564	275
1404	Nil	66	33	1426	Nil	59	190
1405	Nil	38	36	1427	Nil	72	83
1406	Nil	35	31	1428	Nil	43	77
1407	Nil	37	33	1429	Nil	77	76
1408	10	20	46	1430	5	108	73
1409	Nil	29	54	1431	5	63	71
1410	140/ 145	360	118	1432	Nil	29	23
1411	15	417	41	1433	Nil	27	33
1412	Nil	26	24	1434	Nil	89	45
1413	Nil	26	27	1435	Nil	6	105
1414	Nil	592	44	1436	10	767	94
1415	Nil	357	165	1437	Nil	294	158
1416	Nil	27	819	1438	40	769	75
1417	Nil	32	1180	1439	30/40	1010	69
1418	Nil	126	591	1440	Nil	554	84
1419	Nil	96	136	1441	10	213	43
1420	Nil	32	178	1442	40/25	51	28
1421	Nil	70	98	1443	Nil	36	30
1422	Nil	62	100				

Per

  
G. Lebel-Manager/rl



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



Swastika Laboratories

Certificate No. 74070

Page 2

SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM	SAMPLE NO.	GOLD PPB	COPPER PPM	NICKEL PPM
1444	10	98	39	1474	10	140	22
1445	5	166	32	1475	Nil	50	16
1446	Nil	124	29	1476	Nil	53	19
1447	5	297	41	1477	10/40	36	20
1448	Nil	129	34	1478	Nil	40	22
1449	20	1050	155	1479	Nil	61	24
1450	5	175	37	1480	5	54	26
1451	Nil	120	66	1481	10	1050	135
1452	10	39	57	1482	10	884	107
1453	5	351	79	1483	5	319	22
1454	5	144	143	1484	Nil	24	27
1455	10	393	247	1485	Nil	10	18
1456	Nil	41	139	1486	5	8	25
1457	Nil	26	42	1487	Nil	43	25
1458	Nil	14	42	1488	Nil	70	92
1459	10/15	202	59				
1460	5	209	246				
1461	5	82	161				
1462	5	23	403				
1463	Nil	12	46				
1464	5	604	53				
1465	Nil	62	17				
1466	Nil	49	85				
1467	Nil	57	77				
1468	5	675	57				
1469	Nil	99	88				
1470	10	820	82				
1471	5	307	72				
1472	Nil	41	110				
1473	20/50	655	106				

NOTE: Samples were assayed using  
1 A.T. fusions

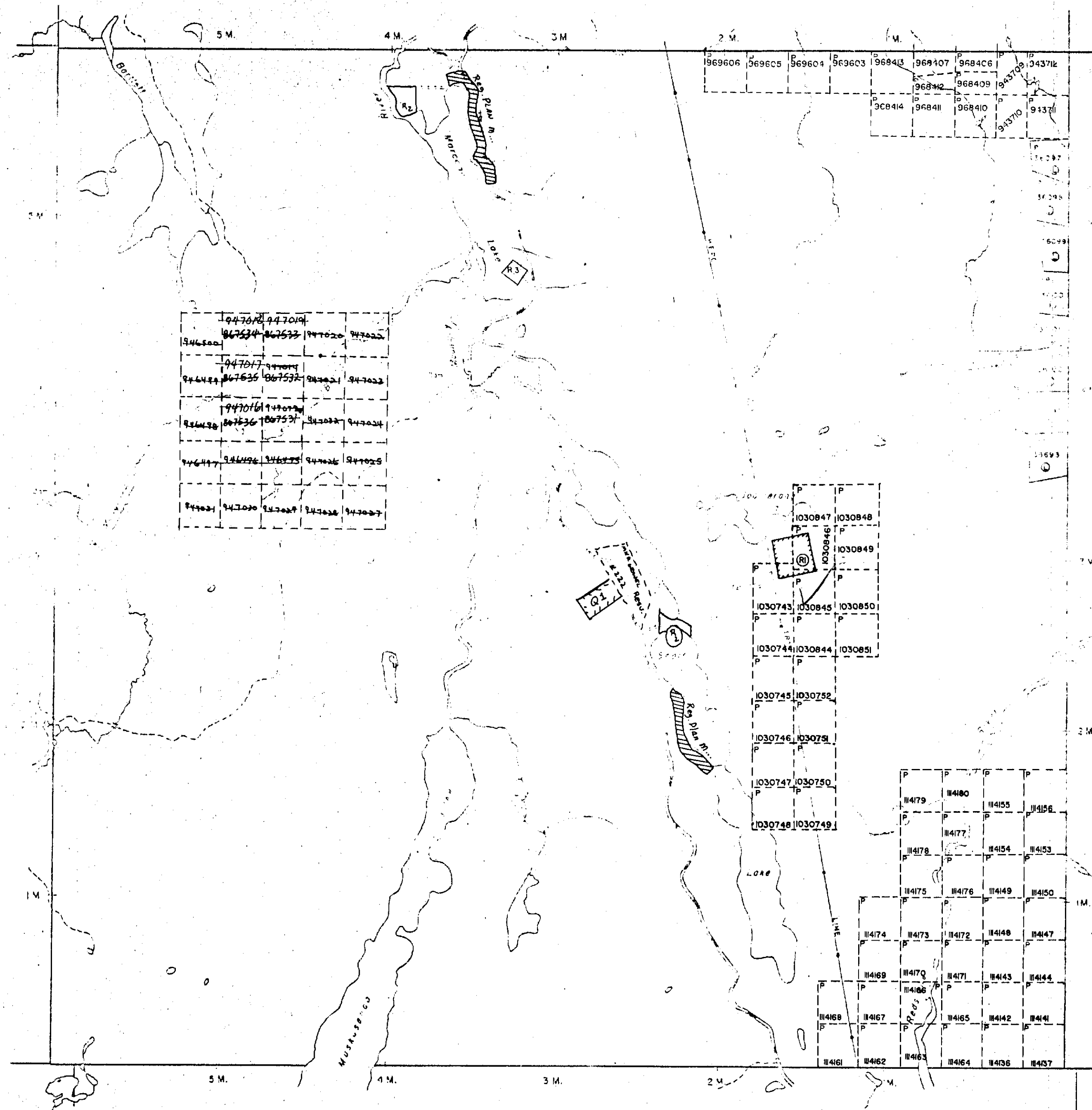
Per

G. Lebel-Manager/rl



Established 1928

McArthur Tp. - M. 298



English Tp. - M. 787

# THE TOWNSHIP OF BARTLEY

DISTRICT OF  
TIMISKAMING

PORCUPINE  
MINING DIVISION

SCALE: 1 INCH = 40 CHAINS

## LEGEND

PATENTED LAND	or P
CROWN LAND SALE	C.S.
LEASES	L
LOCATED LAND	L.C.
LICENSE OF OCCUPATION	L.O.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKOGEE	
MINES	
UNDEVELOPED	
PATENTED S.R.O.	

NOT RECEIVED  
MAY 20 1981

Surface Rights Reservation along  
shores of all lakes and rivers

## AREAS WITHDRAWN FROM DISPOSITION

DESCRIPTION	ORDER NO.	DATE	DISPOSITION	FILE
(R2)	W 1977	10/4/78	S.R.O.	188543
(R3)	W 1977	1/3/77	S.R.O.	174108
(R1)			GRAVEL RESERVE, MNR.	
(Q1)			PROPOSED GRAVEL PERMIT AREA	JUNE 25/86

Received July 2/86  
Checked July 2/86 L.P. HB

PLAN NO. M-202

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

