



Diamond Drilling

Township of Mallard

Report No: 10

Work performed by: Anaconda American Brass Limited

Claim NO	Hole No	Footage	Date	Note
S 118285	F-7	396.01	June/63	
S 118287	F-5	204.0'	*11	
	F-9	351.6'	Tf	
S 118291	F-4	548.31	11	
	F-2	405.81	11	
	F-3	240.0'	Ħ	
	F-6	495.91	11	
	F-8 _.	403.5'	rr	
	F-10	352.41	n	
-	F-1I	354.0'	11	
	F-1	349.0'	FT .	

Notes:

Diamond Drill Hole Log

D.D.H. F-7

Line:	14SE	(a)	9+771	Æ	
Inclina				lar:	<u>-</u> 45°
Acid	test	@	451	:	- ¹+7°
Acid	test	(a)	3451	:	-11140
Bearing	7 N4	5°E	E		
Total d	lepth	3	396.0	feet	

Location: Claim 118285
Mallard Township
Ontario

From	Feet To	<u>Description</u>
0 36.0	36.0 266.3	Overburden Dicrite. As in surface mapping with less than 1/4% sulphides. There are bands and veins of quartz carbonate and/or chlorite feldspar every few feet throughout the diorite. 241.4-242.8 Fine-grained andesite dyke with slightly sheared contacts at 80° to core axis.
266.3	268.2	Rock type 1V3 (?). This material is granular and could be a clastic sediment but there is no foliation and the grains are poorly defined. Very "ittle sulphide.
268.2	273.6	Rock type 1S ₁ . 268.2-270.0 Finely bedded with 1% <u>po</u> py disseminated throughout. 270.0-273.6 50% graphite with bedding varying from 50° to 60° to core axis. The lower contact cuts sharply across the bedding. About 1% podisseminated and 1/2% py as threads parallel to the bedding.
273.6	290.6	Rock type $1\dot{v}_3$ with very little sulphide.
290.6	302.7	Rock type 1V ₂ with occasional band quartz carbonate epidote alteration and about 1/4% sulphides. One 1/2" bleb py at 301.0.
302.7	308.7	Rock type $1\sqrt[8]{3}$ with occasional bleb and thread of po py trace cp and $1/2\%$ disseminated po.
308.7	320.7	Rock type 15_1 with bedding varying from 70° to 5 to 60° to core axis. About $3/4\%$ po_ py trace cp as stringers parallel to the bedding associated with granular quartz and 1 to 2% finely disseminated po. Graphite content about 50% with only 10% from 312.0 to 314.6 .

D.D.H. From	F-7 Continued: To	- 2 - <u>Description</u>
Feet 320.7	327.7	Rock type $1V_2$ (?). This rock could be a massive sediment. There are numerous quartz veins throughout and about $1/2\%$ disseminate <u>po</u> py.
327.7	338.2	Rock type IS ₁ with an occasional band coarser clastic material. Varying from 50 - 30%. graphite 327.7 to 338.2. One per cent fine disseminated po and about 1% po py trace cp as blebs and threads. 337.4 Five per cent po py trace cp over 3".
338.2	3 ¹ +2.0	Feldspar porphyry somewhat finer grained. Upper contact parallels bedding at 338.2. Very little sulphides.
342.0	351.8	Rock type IV3 with banded feldspar epidote alteration. Banding at 60° to core axis. Upper contact sheared. Less than 1/4% po py disseminated throughout.
351.8	373.5	Rock type IS ₁ with bands of coarser clastic sediment in the following locations: 364.3-365.2, 369.2-369.8, 370.5-371.1 and 372.3-373.5 351.8-360.9 Thirty per cent graphite, three per cent fine grain disseminated sulphide and 1/2% po py threads parallel to the bedding. 360.9-367.0 Sixty per cent graphite, three per cent fine grained disseminated and 1/2% po py threads. 367.0-373.5 Twenty per cent graphite with 3% fine grained disseminated po and 1/2% po threads.
373•5	396.0	Rock type 1 \mathring{V}_3 with less than 1/4% sulphide throughout. 373.5-378.0 Slightly foliated area with unsheared lenses giving brecciated effect. 378.0-383.0 Development of clear feldspar phenocrysts. 383.0-396.0 Pervasive quartz carbonate feldspar epidote chlorite alteration with banding at 55° to core axis.
396.0		End of Hole.

Drilling performed by Morissette Diamond Drilling Company,

Haileybury, Ontario, March 1963.

Hugh Jones, Goologist.

Noranda, Quebec June 4th, 1963

Diamond Drill Hole Log

D.D.H. F-5

Line 18NW @ 2+65NE Inclination at collar: -45° acid test @40' -42° acid test @200 -43°

Bearing: N¹+5°E
Total Depth: 20¹+.0 feet

Location: Claim S-118287 Mallard Township Ontario

100001	201.0 10	
<u>From</u>	<u>To</u> Teet	<u>Description</u>
0 32.0	32•0 85•8	Overburden Rock type IV ₃ with a mild pervasive feldspar epidote alteration and occasional bands of intense quartz carbonate chlorite epidote. 1/2 to 2% irregularly disseminated po, py. Few grains cp observed. 72.8 Four per cent po py over 4" associated with chlorite alteration. 83.9 Three lenses po -2%/6". 85.0 Four lenses po giving 3%/6".
85.8	98.8	Metasediment 85.8-96.7 Rock type $1S_1$ altered to sericite and chlorite with quartz. Bedding at 45° to core axis. 85.8-89.4 Three per cert po in $1/8$ " long hair-like threads, mainly with the darker, more siliceous layers. One per cent as stringers and blebs all roughly parallel to the bedding. 89.4-96.4 One per cent fine disseminated po. 96.4-96.7 Eighty per cent graphite with 1% visible po. $96.7-98.8$ Rock type $1S_2$ with $1/2\%$ disseminated po py.
9 8.8	127.9	Feldspar Porphyry with occasional quartz carbonate veinlets throughout. Some po py and occasional grain cp with quartz veinlets. About 1/2% disseminated sulphides throughout. 126.5-127.9 Few threads graphite.

From To 160.9 127.9

Description

Metasediment.

127.9-130.0 Predominantly 1S₁ with 80% graphite. Bedding at 40° to core axis. One 1/8" bleb py with fleck cp and 1% fine disseminated po were observed, but up to 15% of the material was attracted by a hand magnet and there is probably considerable po.

considerable po. 130.0-133.2 Predominantly 152. There are four 1/2" graphite blebs (not veins) and some po throughout.

132.0-133.2 Ten per cent po py associated with secondary quartz. Some cp along edges of po but in quartz.

133.2-136.0 Predominantly 1S1. Bedding at 50° to core axis. Some graphite throughout with a 30% concentration from 134.2-135.0. One per cent disseminated po py and 1% as stringers and blebs po py trace cp associated with granular quartz.

136.0-139.8 Predominantly sediment 1S₂ with bedding at 60° to core axis. Two 1" graphite veins (?) and one 1/2" long thread <u>po</u> py trace cp. One per cent <u>po</u> py as 1/8" blebs. 139.8-142.3 Predominantly sediment 1S₁ with 4" graphitic bed. 1/2% py associated with quartz threads.

142.3-147.7 Predominantly IS2 with bedding at 60° to core axis. Few 1/2" lenses po py trace cp and 1% ultra fine disseminated po. 147.7-149.2 Predominantly IS1 with three 1/8" by 1/4" stringers po and 2% ultra fine disseminated po.

149.2-151.4 Predominantly 152 with bedding at 50° to core axis and occasional quartz threads parallel to the core axis. Six 1/8" x 1/4" stringers po py trace cp parallel to the bedding and 1% ultra fine disseminated po.

151.4-152.6 Predominantly 1S1 with bedding at 45° to core axis. some quartz threads with the more granular beds and about 3/4% disseminated po py.

152.6-154.9 Predominantly 1S2 with only 1/2%

154.9-157.5 Predominantly IS1 with bedding at 45° to core axis. Less than 1/4% visible sulphides.

157.5-160.9 Predominantly 1S2 with less than 1/4% visible sulphides.

<u>From</u> Feet	To	<u>Description</u>
160.9	164.5	Foldspar Porphyry. Both contacts are sheared and altered but both are roughly parallel to the bedding in the adjacent sediments. About 1/2% sulphide throughout.
164.5	172.1	Metasediment. 164.5-169.3 Predominantly $1S_1$ with bedding varying from 55° to 48° to coe axis. 166.2 Six $1/2$ " x $1/4$ " po lenses with trace cp giving 10% sulphides over 4 ". 169.3-170.4 Predominantly $1S_2$ with less than $1/4\%$ sulphides. 170.4-172.1 Predominantly $1S_1$ with less than $1/4\%$ sulphides.
172.1	176.4	Rock type $1V_3$ with the development of actinolite needles. Less than $1/4\%$ sulphides. $17^0+.0$ Five inches quartz carbonate.
175.4	191.5	Dicrite (?). Medium grey equigranular with 30% altered feldspar. Could be an altered andesite. About 1/2% po. 177.0 Three inches quartz carbonate, at 60° to core axis. 181.4 Five inches quartz carbonate at 70° to core axis.
191.5	204.0	Rock type 183 with pervasive feldspar chlorite epidote alteration throughout and bands of intense alteration at 194.8 and 201. There is about 1% disseminated po throughout generally associated with the quartz in the alteration.
204.0		End of Hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, March 1963.

Hugh

Noranda, Quebec

June 4th, 1963

H. Jones, Geologist

Diamond Drill Hole Log D.D.H. F-9

Line: 8NW @ 1+95NE

Inclination at collar: -1+3°

at 300' : -1+3° N'+5°E

Bearing: N45°E

Total Depth: 351.6'

Location: Claim S-118287

Mallard Township

Ontario

Continued.....

Description <u>From</u> Feet Overburden 0 10 159.1 10.0 Dacite pillowed lava, epidotized and feldspathized, very hard, grey-green colored with occasionally very small amygdules filled with calcite from 10.0 to 12.7 and with chlorite clots very likely filled amygdules; cut by numerous quartz-feldspar stringers with occasional chalcopyrite associated with pyrrhotite and pyrite. 124.9-159.1 10% pyrite and pyrrhotite with occasional grains of questionable chalcopyrite occurs generally disseminated through rock. 159.1 181.0 Metasediments. 159.1-162.3 Rock type IS₁ slightly dragfolded with development of sericite and some coarse phase with yellow-green epidote alteration. FeS2-FeSx. 162.3-181.0 Rock type 1S₁ well schistose, abundant sericite and some chlorite with epidote alteration. 3% FeS2 cubes in disseminations, 7% FeSx as films along foliated planes, banding at 55° to core axis. 181.0-193.4 Rock type 1V3 with irregular epidote stringers and bands. 193.4-201.0 Basic sill, fine even grained, fresh rock with yellow-green epidote alteration. 201.0-203.5 Rock type 1V3 epidotized and chloritized. 203.5-207.0 Feldspar porphyry altered with development

of sericite, almost a cataclasite.

From Feet	To	<u>Description</u>
207.0	264.8	Rock type $1V_3$ pillowed and chloritized.
264.8	299.0	Sericite-chlorite schist with sections of calcite-filled amygdules and other porphyritized with development of white feldspar, other sections standard metasediments with poor bedding or banding at 50° to 70° to core axis.
299.0	351.6	Andesite and altered andesite. 299.0-306.1 Rock type 1V ₃ 306.1-329.5 Rock type 2V ₃ pillowed, highly chloritized and epidotized with specks of iron sulfides, lineation 50-60° to core axis. 329.5-351.6 Rock type 1V ₃ chloritized and epidotized with calcite-filled amygdules from 345.5 to 351.6.
351.6		End of hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, April 1963.

Noranda, Quebec June 4th, 1963 G. M. Dionne, Geologist

Diamond Drill Hole Log

D.D.H. F-4

Inclination Bearing:	E @ 8+27NE on at collar: at 360': at 520': S+45°W th: 548.3	_45° _43° _43°	Location: Claim S-11 % 291 Mallard Township Ontario
<u>From</u> Feet	<u>To</u> t		<u>Description</u>
0	10.0 54.9		Overburden Diorite green colored, fine grained with abundant white plagioclase, cut by numer- ous quartz-calcite stringers.
54.9	55 . 6	[[Feldspar porphyry with needles of amphibole (hornblende). Pea-sized feldspar phenocrysts and amphibole phenocrysts up to 3/10" long are set in a dacitic matrix.
55.6	56.3]	Diorite as above.
56.3	59.8	ı	Amphibole feldspar porphyry as above.
59 . 8	154.0	5 <i>T</i> [Diorite as above with shearing beginning at 136.7 and increasing towards bottom with chlorite increasing from 107.0 to bottom. 146.8-154.0 schistose at 30° core axis.
154.0	169.5	1	Metasediments - banding at 40° core axis. 154.0-155.0 Argillite brecciated broken core. 155.0-163.3 Thinly banded argillite. 163.3-164.0 Siliceous sediments without bedding. 164.0-165.4 As above, but brecciated. 165.4-169.5 As 163.3 to 164.0, shearing
169.5	30 ₇ +•3	ř	at 20° core axis. Schistose diorite as 146.8 to 154.0 at 45° core axis.
204.2	216.7	Ţ	Standard feldspar porphyry, fairly sheared with specks of galena and a few grains of chalcopyrite.

Diamond Drill Hole F-4 Continued: - 2 -

From Feet	<u>To</u>	<u>Description</u>
216.7	217.4	Schistose diorite as 146.8 to 154.0.
217.4	220.7	Metasediments banding at 45-50° core axis. 217.4-218.5 Thinly banded argillite. 218.5-220.7 Fairly massive graphite without good banding.
220.7	223.3	Chlorite schist with development of little pink feldspar.
223.3	293 .7	Altered green pillow andesite, rock type IV2 fine grained, fairly hard, bleached with epidote and chlorite alteration. 2 to 4% iron sulfides with scattered flakes of sphalerite-galena-chalcopyrite mineralization 223.3-231.2 Semi-schist with alignment of chlorite clots as 2V3 - 45° core axis 231.2-293.7 Light green pillow lavas with light green chlorite clots and abundant irregular calcite-filled amygdules? Sulfide mineralizations are generally replacing chloritic material of pillow rims.
293.7	297.2	Basic sill, fine evengrained with yellow-green epidote alteration.
297.2	336.7	Rock type IV2, very likely as 231.2-293.7 breccipted from 297.2 to 326.5 and fairly shattered from 326.5 to 336.7. Specks of iron sulfides.
336.7	357.0	Rock type 1V3, medium grained, fairly schistose and fairly chloritic. 10% iron sulfides with occasional blobs of chalcopyrite and specks of sphalerite.
357.0	371.3	Rock type lV_l fairly shattered to brecciated with quartz-epidote stringers.
371.3	378.4	Rock type V ₃ , fairly chloritic. 371.3-376.1 rock type 1V ₃ . 376.1-378.4 rock type 2V ₃ .
378.4	433.0	Rock type 1V ₁ vaguely pitted with irregular patches of quartz-feldspar mineralization from 382 to 397

Diamond Drill Hole F-4 Continued: - 3 -

		J
From	To	<u>Description</u>
		402.0-408.5 Mottled with epidote. 409.5-416.3 Highly brecciated with chloritic and gougey matrix mineralized with disseminated Cu-Zn-Pb sulfides. 420.0-425.9 Mottled with epidote. 427.4-428.2 Worm-like epidote alteration. 429.4-431.8 Shattering with little chalcopyrite and sphalerite.
433.0	459.4	Rock type 1V3 feldspathized. 439.6-440.4 4% iron sulfides with specks of chalcopyrite-sphalerite.
459.4	471.7	Feldspar porphyry with vague feldspar phenocrysts often replaced by chloritic material, grey to grey blue colored, fairly sheared with specks of iron sulfides and films of pyrrhotite.
1+71.7	499.2	Andesite with interbedded metasediments (bedding at 60° core axis) with very erratic iron sulfides and occasional threads and grains of galena, sphalerite and chalcopyrite. 471.7-474.9 Rock type 2V3, lineation at 55° core axis. 474.9-476.9 Rock type 1V1, with some banding 476.9-478.0 Phyllite. 481.2-483.2 Phyllite. 483.2-487.3 Rock type 1V1. 487.3-488.3 Rock type 1V1. 488.3-491.9 Rock type 1V1. 491.9-496.6 Banded feldspathized sediments. 496.6-494.2 Rock type 1V1 feldspathized.
499.2	516.5	Argillite and graphite thinly and well banded. 8% iron sulfides. 508.8-516.5 mainly graphitic, banding at 65° core axis.
516.5	525.1	Altered fedspar porphyry with development of cataclasite texture and sericite minerals.
525.1	548.3	Metasediments with very little iron sulfides erratically scattered threads of Pb-Zn sulfide mineralization. Banding at 60° C.A. 525.1-534.0 Thinly banded argillite and graphite. 534.0-539.6 Thinly banded graphite, brecciated.

D.D.H. F-4 Continued:

- 4 -

From feet

Description

53).6-540.6 Thinly banded argillite. 540.6-546.1 Graphite faulted & folded. 546.1-548.3 Phillite with development of abundant sericite.

548.3

End of Hole.

Drilling performed by Morissette Diamond Drilling Company, Halleybury, Ontario, March 1963.

Noranda, Quebec June 4th, 1963 G. M. Dionne, Geologist.

Dismond Drill Hole Log

D.D.H. F-2

Line 10SE @ 5+65NE
Inclination @ collar: -45°
acid test @ 60' : -48°
acid test @ 310' : -47°
Bearing: N+5°E
Total Depth: 405.8 feet

Location: Claim S-118291 Mallard Township Ontario

Total Depth	1: 405.8 Feet	
From FEET	<u>To</u>	<u>Description</u>
0	J+O	Overburden.
40	3.9	Rock type 1V ₃ 54.1-73.1 Banded epidote quartz feldspar alteration @ 40-70° to core axis. 73.1-76.4 1/32" chlorite lenses and one crenulated granular quartz thread every inch all at 70° to core axis. 76.4-79.2 Mild pervassive epidote albite chlorite alteration. Foliation at 45° to core axis. 90.1-93.9 Mild siliceous epidote albite alteration.
93.9	126.6	Dark Intermediate Volcanic "IV1" Deep even grey colour, ultra fine grained, very siliceous. Contacts sharp or gradational against IV3. This could be a particular alteration of IV3. This rock type is frequently mottled with vague 1/2" epidote spots. 107.3-113.8 Mottled with 1/2" epidote spots which form up to 50% of the rock. 118.2-123.5 Mottled as at 107.3.
126.6	291.9	Rock type 1V ₃ . Mild pervasive epidote feldspar quartz alteration throughout, with random quartz knots to 1/2" throughout, although these do not show a preferred orientation they are granular quartz and probably fill tensional openings. They are spaced at about 4" intervals. Minor pyrite pyrrhotite throughout about 1/2% finely

disseminated.

From To

Description

127.6-140.9 Quartz feldspar epidote chlorite alteration bands with elliptical patches and angular fragments of less altered rocks forming a breccia. This could reflect an original texture (pyroclastic or small pillows) or could be a result of some movement in the alteration zone.

140.9-237.6 Occasional bands of epidote quartz feldspar alteration and occasional quartz veins.

237.6-239.4 Alteration breccia as at 127.6.

250.0-254.5 Alteration breccia as at 127.6 with slight increase in sulphides in the form of 1/2% long threads (up to 3" long less than 1/16" wide) of pyrrhotite Age relationship - alteration bands cut, by granular quartz veins cut by pyrrhotite threads. The sulfide threads could represent a late fracturing or non-directional crackling.

261.5-265.6 Lost Core. No indication that this was a mineralized, fractured or in any way unusual zone.

265.6-272.0 Only a few alteration bands, 1% pyrite in fine threads as at 250.0, one 1/4" long thread of chalcopyrite identified.

281.6-289.4 12% pyrrhotite pyrite with a few fleck chalcopyrite as at 265.6. 284.4-289.4 Best portion of above mentioned zone assayed Cu .05%, Ni--, Au nil.

291.9 324.7

Diorite(?). Even-grained intrusive texture light colored altered feldspars in a mafic matte, light to dark grey, no foliation. Slight dissemination of pyrite throughout with two pyrrhotite threads at 295.6 and 297.1. Toward the end of the section the so-called diorite is lighter with some epidote (?) with larger salic masses. At this point it begins to resemble the material at 330.3. Thus, the sedimentary contact is not definitely defined.

324.7 330.3

Rock type 1V3, with 1% well disseminated pyrrhotite, contact with former obscured by alteration band.

<u>From</u> Feet	<u>To</u>	<u>Description</u>
330.3	346.4	Metasediment (?). Light colored fragments (1/4" - 3") of material resembling andesite altered to feldspar and epidote. Matrix is darker siliceous material with 1/4" salic grains as in the first 2 feet of the following clastite, minor disseminated pyrrhotite. 330.3-330.8 3% pyrrhotite pyrite with possible grains chalcopyrite, associated with quartz threads. One possible explanation is that this is a sediment derived from and therefore similar to the underlying diorite (?).
346.4	370.5	Rock type 1S2. This material varies from an unfoliated granular sediment (?) as in the former rock type to a well bedded clastic sediment at 351.4 The clastite is a medium grained sediment similar to the siliceous andesites in composition. Within this medium-grained material there are beds of very fine-grained graphitic argillite. 351.4-352.8 Few very thin beds graphite. 1% pyrite as 1/4" knots of crystals. 352.8-356.9 5% graphite at 35° to core axis. 1/2% pyrite threads conformable to bedding, 3% very finely disseminated pyrrhotite pyrite in bedding. 15% of the material is attracted by a hand magnet when finely ground. Therefore there may be considerable pyrrhotite which could not be seen with a hand lense or binocular microscope. 356.3-361.4 25% graphite 1/2% pyrite threads, 8% finely disseminated pyrrhotite pyrite, 20% magnetic material. 361.4-370.5 80% graphite at 60°-80° to core axis. 1% pyrite pyrrhotite threads with a trace of chalcopyrite. 8% finely disseminated pyrrhotite pyrite, 20% magnetic material. The best mineralization is in stringers. 368.0-368.6 3% pyrrhotite and trace cp.
370.5	405.8	Diorite. More basic than diorite above medium-grained even texture, foliated in part due to lineation in light minerals, tending toward talc chlorite schist, very soft. 375.0-384.0 Strongest foliation at 25° to core axis. 385.6-38).2 Quartz carbonate vein.

D.D. Hole F-2

From Feet

Description

391.0-394.0 Two quartz carbonate veins form most of this section. 395.0-395.6 Quartz carbonate vein. 396.2-396.6 Inclusion of altered fine green andesite ($1V_2$)

405.8

End of Hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, March, 1963.

Heigh Jones

Noranda, Quebec June 4th, 1963

Hugh Jones.

Diamond Drill Hole Log

D.D.H. F-3

Line 6SE @ 5+01.5NE
Inclination at collar -1+5°
Acid test @ 200' -1+8°
Bearing N1+5°E
Total Depth 2+0.0 feet

Location: Claim S-118291
Mallard Township
Ontario

From	Feet	To	<u>Description</u>
0	reet	16	Overburden
16		19.3	Rock type 1S1. Possible cross-bedding was noted. Very little sulphide. Core angles vary from 33° to 50°.
19.3		20.2	Metasediment (?). Coarse clastic texture of quartz and feldspar grains in a dark chloritic matrix. Only a slight suggestion of bedding. Very little sulphide.
20.2		40.3	Rock type 1V ₃ . 38.0 20% po:py: <u>cp</u> over 5".
1+0.3		148.8	Rock type IV_1 . Few grains po and py throughout.
48.8		60.5	Rocktype IV3. Few threads and slight dissemination po py throughout. 57.6-58.7 20% po trace cp as an irregular vein.
60.5		62.4	Rock type 1V1. With two 1/4" veins po py trace cp.
62.1+		65.7	Diorite with one quartz carbonate stringer and very little sulphide.
65.7		85.4	Rock type 1V3. Few blebs and dissemination sulphide but not over 1/4%. Slight foliation @ 60°-65° to core axis.
85.4		93.2	Rock type 1V1. Slight foliation @ 60° to core axis. Very little sulphide.
93.2		128.8	Rock type 1V3 with 1/2% sulphides. 96.1 5% po cp ZmS over 1" associated

with a fracture.

<u>From</u> Feet	<u>To</u>	<u>Description</u>
reec		111.0 Few quartz carbonate stringers with minor po trace cp. 112.3 Six inches quartz carbonate with chloritic slips. 120.2-128.8 Feldspar epidote chlorite alteration, first part banded at 45-60° to core axis last part brecciated.
128.8	167.0	Rock type 1V1. Few grains po py and lesser cp mostly with quartz carbonate stringers. 135.0-137.0 mottled with epidote spots. 139.5-150.2 " " " " " 152.7-155.5 " " " " "
167.0	225.0	Rock type 1V ₃ pervasive albite. Well mineralized throughout with about 3% disseminated po py trace cp and 4% po py trace cp as stringers and blebs, evenly distributed throughout. These stringers are mainly associated with quartz threads or grains and not with the mafic portions of the alteration. 167.0-192.5 Banded albite epidote alteration. Last 1.5' brecciated. 218.2-219.9 Banded feldspar epidote alteration. 221.7-225.0 Banded feldspar epidote alteration.
225.0	240.0	Fine Green Andesite IV2. This andesite is finer grained than IV3. It is light grey green in colour and quite massive. It is more brittle than IV3. 225.0-227.4 2% disseminated po py and 2% as stringers. This is the end of the long zone of mineralization described in 167.0-225.0 227.4-234.5 chlorite epidote alteration zone with fragments of bleached IV2 in bands of darker more chloritic alteration products. 1% po py disseminated throughout. 234.4-240.0 Some banded quartz feldspar alteration at 45° to core axis. About 1½% po py as disseminations and threads.

240.0 End of Hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, March, 1963.

Hugh Jones

Noranda, Quebec June 4th, 1963

Diamond Drill Hole Log

D.D.H. F-6

Line:	6SE @ 3+37.5 NE	
	nation at collar:	
	at 60' :	
	at 450! :	-34 2 0

Location: claim S-118291 Mallard Township Ontario

Bearing: N45°E Total Depth: 495.9'

From F	eet	<u>Description</u>
o 50.0	50.0 52.0	Overburden Graphite - broken core - banding at 50° core
52.0	53.0	axis. Feldspar porphyry altered and almost a cata- clasite, possibly a porphyritized meta-
53.0	54.3	sediment. Graphite - broken core - banding at 50° core axis.
54.3	57.6	As 52.0 to 53.0.
57.6	68.0	Thin banded graphitic and siliceous, argil- laceous sediments cut by 2" feldspar por- phyry dyke.
68.0	73.0	Feldspar porphyry intrusive with feldspar phenocrysts up to 0.2". Matrix is acid and somewhat sericitic. Shattered at bottom with cracks filled with graphite.
73.0	75•3	Metasediments, vaguely banded argillaceous and graphitic sediments. Banding at 65° core exis.
75.3	l ¹ +7•2	Light grey acid volcanic, fine grained, with development of abundant sericite, feldspar and some irregular chloritic areas. Often brecciated and shattered. 2 to 7% iron sulfides as disseminations, blebs, streaks and a few stringers with very occasional chalcopyrite. 137.5-174.2 Well schistose with very good development of sericite with fairly abundant sugary quartz. 7 to 9% iron sulfides generally associated with greyish quartz.
11+7.2	1.62.0	Metasediments.

147.2-150.0 Graphite, contorted & faulted from 147.8 to 148.3. 2% pyrrhotite stringers.

From	<u>To</u> Feet	Description
		150.0-162.0 Thinly bedded argillite with specks of iron sulfides - banding at 450-500 core axis.
162.0	165.5	Rock type $1V_1$ with light clots of chloritic material.
165.5	237.2	Metasediments (banding 55°-60° core axis) with intercatated andesite and one small dyke of feldspar porphyry with specks of iron sulfides. 165.5-171.2 Grey thinly bedded argillite. 171.2-174.4 Green thinly bedded argillite. 174.4-188.4 As 165.5 to 171.2. 188.4-189.3 Rock type 1V3 or 2S1. 189.3-190.4 as 165.5 to 171.2. 190.4-193.2 as 188.4 to 189.3. 193.2-198.1 as 165.5 to 171.2. 198.1-199.5 as 188.4 to 189.3. 199.5-226.2 as 165.5 to 171.2. 226.2-27.2 Standard feldspar porphyry with coarse feldspar phenocrysts set in a dacitic matrix. 227.2-237.2 as 165.5 to 171.2.
237•2	239.7	Feldspar porphyry grey-blue colored with vague feldspar phenocrysts often replaced by greenish chloritic material.
239.7	252.6	Rock type 3V3 with specks of pyrite cubes all through rock.
252.6	309.5	Altered andesite, rock type 1V3, with occasional pillow structure, with irregular sections, bands and patches of quartz-feldspar-epidote-chlorite mineralization, cut by some quartz stringers mineralized by specks of pyrite-pyrrhotite-chalcopyrite from 257.9 to 276.0 280.7-284.3 Rock type 2V3, lineation at 45° core axis.
309.5	321.5	Rock type IV1 with numerous quartz feldspar epidote bands or irregular stringers, often pitted.
321.5	322.5	Rock type 2V3.
322.5	324.1	Rock type $1V_1$ with irregular stringered quartz and quartz-calcite.

D.D.H.	F-6	Continued:
--------	-----	------------

	``	
_	- 3	-

<u>From</u> Feet	<u>To</u>	<u>Description</u>
324.1	416.4	Altered andesite. 324.1-333.9 Rock type 1V3 slightly epidotized and feldspathized with a section (331.3-332.6) of 20% sulfides of which 50% is chalcopyrite.
		333.9-342.6 Rock type 2V, with irregular section bands lineation at 45°. Stringers of chlorite alteration alternative with light green brittle sections, bands and stringers, of ten appearance of a breccia. The most highly altered sections are favored by light pyrite-pyrrhotite-chalco-pyrite mineralization. 342.6-416.4 Rock type 1V3 with occasional pillow structure, even rained feldspar-epidote alteration and fairly brittly. 14% iron sulfides with specks of chalcopyrite indisseminations, blebs, stringers and patches. 369.6-372.6 Brecciated.
416.4	464.2	Rock type 1V ₂ bleached and hard, often frag- mental. With patches of chlorite-epidote alteration and 5% iron sulfides with a few questionable grains of chalcopyrite.
464.2	481.9	Thin banded graphite and argillite with films of pyrrhotite and abundant quartz, fairly contorted.
481.9	486.0	Graphitic metadiorite fairly schistose with development of sericite near bottom, lineation at 60° C.A.
490.1	495.9	Diorite green to grey-green colored with a remarkable amount of chlorite and a little iron sulfides.
495.9		End of Hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, March-April 1963.

G. M. Dionne, Geologist.

Noranda, Quebec

June 4th, 1963

Dismond Drill Hole Log

D.D.H. F-8

Line: 8SE @ 8+50NE Inclination at collar: -45° at 360': -41°

Bearing: S45°W

Total Depth: 403.5 feet

Location: Claim S-118291 Mallard Township Ontario

From Fe	<u>To</u> et	<u>Description</u>
014.0	14.0 135.6	Overburden Diorite fine-grained green to grey to bluish colored cut by numerous quartz-calcite stringers with disseminated grains of chalcopyrite, sphalerite and iron sulfides. Increasing schistosity and chlorite from 50.0 to 134.3 with lineation at 40 to 50° core axis. 134.3-135.6 metadiorite schistose and shattered with cracks filled with graphite, 10% films, blebs, lenses of pyrrhotite.
135.6	1149.5	Graphite, jet black to grey black colored, brecciated with minor faulted. 12% FeSx as films blebs and lenses. Specks of sphalerite between 136.0 to 11+0.3 with occasional flakes of chalcopyrite.
149.5	152.6	Section as 134.3 to 135.6
152.6	152.9	Section as 135.6 to 149.5
152.9	155.0	Section as $13^4.3$ to 135.6
155.0	161.5	Rock type 1V3 with sections of breccia or inclusions of acid fragments. Fairly felds-pathized with some sericite. Cut by felds-par porphyry at 156.6-157.2.
161.5	154.7	Basic sill, fine even rained rock with yellow-green epidote alteration.
164.7	195.8	Rock type 1V3 cut be numerous quartz-calcite stringers & masses. 167.6-169.0 brecciated with fairly rounded fragments of fairly bleached andesite with chlorite and calcite-filled amygdules.

From feet	<u>To</u>	<u>Description</u>
195.8	196.1	Basic sill, fine even grained rock with yellow-green epidote alteration.
196.1	202.6	As 164.7 to 195.8
202.6	212.4	As 161.5-164.7 with maximum of epidote alteration near contacts and decreasing towards the centre to no megascopic epidote alteration.
2.12.4	293.5	Rock type 1V ₂ consists of light green pillow andesite fine grained, fairly epidotzed with erratically abundant calcite-filled amygdules. 212.4-213.6 brecciated section 242.2-250.9 brecciated section 289.9-293.5 brecciated section From 263.0 to 277.7, 5% stringered and disseminated FeS ₂ -FeSx with specks of chalcopyrite and sphalierite.
293.5	294.1	Basic sill, fine even grained rock with yellow-green epidote alteration.
294.1	303.7	Rock type 1V2 as 212.4-293.5 without breccia.
303.7	304.1	Basic sill, fine even grained rock with yellow-green epidote alteration.
304.1	307.6	As 299.1 to 303.7
307.6	317.8	Grey acid to intermediate volcanic, aphanitic, siliceous with development of good pyrite cubes (3/10") disseminated through rock - up to 6% sulfides, shearing at 60° core axis.
315.8	1+03.5	Andesite and altered andesite. 315.8-325.7 Rock type 1V ₃ pillowed with calcitefilled amygdu'es and chlorite clots. 325.7-333.4 Rock type 2V ₃ pillowed with bleached sections and chlorite clots. Lineation at 50° core axis. 333.4-349.2 As 315.8 to 325.7 349.2-351.9 As 325.7 to 333.7. Lineation at 45° to core axis. 351.9-379.0 Rock type 1V ₃ highly feldspathized cut by numerous quartz-calcite stringers. 379.0-403.5 Rock type 1V ₃ feldspathized and epidotized with development of actinolite, silicified zones and bleached bands. 10% iron sulfides with specks of chalcopyrite and questionable sphalerite.

From feet

Description

403.5

End of Hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, April 1963.

Norando, Quebec June 4th, 1963 S. In Morror
G. M. Dionne, Geologist

Diamond Drill Hole Log

D.D.H. F-10

Line: 2SE @ 5+73NE
Inclination at collar: -43°
at 300': -41°
Bearing: S45°W

Location: Claim S118291 Mallard Township

Ontario

Continued.....

Total depth: 352.4 feet

From Fee	et <u>To</u>	<u>Description</u>
0	56.0	Overburden
56.0	73• ¹ +	Rock type 1V3, epidotized and feldspathized.
73.4	77.0	Rock type 3V ₃ .
77.0	193.2	Altered andesite. 77.0-113.7 Rock type IV ₃ epidotized and felds-pathized. 113.7-123.2 Rock type 2V ₃ .
123.2	1.36.8	Feldspar porphyry grey-green to bluish to brownish acid intrusive with subrounded feldspar phenocrysts. 123.2-125.1 Feldspar phenocrysts are replaced by chloritic material. 125.1-135.6 No chloritic replacement of feldspar. 135.6-136.8 As 123.2 to 125.1.
136.8	139.1	Altered andesite with development of chlorite and salic spots.
139.1	146.8	Metasediments. 139.1-141.0 Rock type 251 banding at 50° to core axis. 141.0-142.0 Rock type 151 well to fairly shattered with cracks filled with dark to black material. 142.0-144.0 Porphyritized sediments with a cataclasite texture and development of sericite. 144.0-146.8 Rock type 17 beige to grey to brownish. 2 pyrite stringers, banding at 40°
146.8	149.3	to core axis. Rock type 1V _l with development of very little dark mica.
1 ¹ -3•3	173.5	Metasediments banding at 50-55° to core axis.

From

Description

Rock type 151.
Rock type 151 with poor bedding 149.3-150.5 150.5-155.2 and occasionally some possible calcite-filled amygdules? 155.2-160.5 Altered rock type 1S1 with rock type 2S₁. 160.5-161.4 Porphyritized sediments with cataclasite texture and rounded feldspar phenocrysts. 161.4-173.5 Rock type 1S1 and altered 1S1 peppered with derk dots and tiny lines. 1-2% FeSo-FeSx in heavy stringers and threads.

173.5-181.5

Altered andesite, somewhat similar to 2V3, but highly sericitic and soft. 2% FeS, in threads and stringers.

181.5 225.0

Metasediments. Banding at 45° to core axis. 2.3% iron sulfides with trace of zinc and lead 181.5-185.0 Graphite Rock type 18_1 and some

Rock type 2S₁. 185.0-197.0 Graphitic Rock type 1S₁.

197.0-203.5 Graphite, highly contorted light black and black graphite bands.

203.5-211.4 Very likely a sediment with abundant sericite, no good bedding, but a somewhat irregular banding.

211.4-223.0 Rock type 1S1 with siliceous bands highly sericitic and argillaceous bands chloritic and/or graphitic.

223.0-225.0 Transitional contact between metasediments and volcanics, sericitic and sheared.

225.0 352.4

Greenish granular, slightly altered IV, with development of little white feldspar at places, with very little epidote alteration and light chlorite clots as 2V3. Well shattered up to 268.0. Occasional quartz-calcite stringers with grains of sphalerite and chalcopyrite. 297.6-305.0 altered 1V3, darker green w/salic patches or spots.

323.3-326.0 As above.

326.0-345.7 As 225.0 to 297.6 with epidotization. 345.7-352.4 As 297.6-305.0 with well wider spots of salic material often sericitic.

352.4

End of hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, May 1963.

Noranda, Quebec June 4th, 1963

G. M. Dionne, Geologist

Dismond Drill Hole Log

D.D.H. F-11

Line:	8se @	6+05N	Ξ	
Inclin	ation a	t col	lar:	-)+j+o
	_	4 200		1.00

Location: Claim S-118291 Mallard Township

Ontario

at 300' : -1+0° Bearing: S1+5°W Total Depth: 354.0'

TO USE D	ehcu: 234	-• U ·
From Fee	t <u>To</u>	<u>Description</u>
0	14.0	0verburden
14.0	19.2	Dark green andesite, fine grained, massive, no foliation probably pillowed lava. Rock
19.2	⁾ +7.4	type 1V3. Altered and site very fine grained and fairly hard with alignments of chlorite clots. A semi-schist Rock type 2V3, lineation at 35° to core axis.
) ₊ 7• ^½ +	53.6	Rock type 1V3. 50.0-53.6 Slightly schistose.
53.6	71.9	Grey acid to intermediate volcanic fine grained, massive, devoid of structure with very occasional feldspar phenocrysts. Rock type IV1. 4% FeS2 in disseminations.
71.9	74.4	Amphibole feldspar porphyry, fine to medium grained $^{1+}$ % FeS $_{2}$ in disseminations and threads.
74.4	81.9	Medium green andesite, medium grained, massive, devoid of structure, epidotized. Rock type 2V3.
81.9	100.2	Dark rey intermediate to basic volcanic, very fine grained, massive with light green clots, worm-like, a chlorite mineral. Rock type 3V3. 3% FeS, cubes in disseminations. 89.3-100.2 as above but often the light green clots are replaced by a yellow-green epidote mineral.
100.2	109.8	Rock type $1\sqrt[4]{3}$, 3% FeS ₂ -FeSx in blobs, stringers and disseminations.
109.8	116.6	Metasediments, banded argillite IS ₁ with unfoliated granular sediment 2S ₂ . Light colored siliceous and sericitic bands and dark argillaceous and chloritic more or less bands. 2%

FeS2 in blobs, stringers & disseminations. Banding at 50° to core axis. Continued......

i D	П	F - 1.1	Continued:
200	п.	$\Gamma - 1.1$	Continued:

	2	
_	2	~

<u>From</u> Fee	t <u>To</u>	<u>Description</u>
116.6	127.3	Feldspar porphyry, fairly altered sericitic dacite porphyry with feldspar phenocrysts up to 1/8". Somewhat schistose.
127.3	132.4	Banded argillite. Light colored siliceous and sericitic bands and dark argillaceous and often chloritic bands. Rock type 1S1. 2% FeS2 in threads of disseminations. A few threads of sphalerite. Banding at 35-50° to core axis.
132. ¹ +	136.4	Rock type 2V3, lineation at 30° to core axis.
136.4	173.1	Metasediments. Banding at 40 to 50° core axis. 136.4-143.6 Rock type 1S1 with 50% quartz mineralization. 1% FeS2. 143.6-151.2 Rock type 2S1. 151.2-166.0 Graphite and graphitic banded argillite. 40% is graphite. 5% FeS2-FeSx. 166.0-173.1 Argillite and banded argillite.
173.1	175.2	Rock type 2V3 with abundant irregular calcite.
175.2-	179.0	Rock type 1S ₁ . 3% FeS ₂ in threads.
179.0	181.8	Rock type 2V3 with less chlorite clots.
181.8	199.1	Metasediments with occasional pyrite in threads, stringers and disseminations, banding at 45° and lineation at 35-40° to core axis. 181.8-184.8 2S1. 184.8-194.8 Sericite chlorite schist. 194.8-199.1 Graphite and graphitic 1S1 and 2S1
199.1	201.7	Feldspar porphyry, altered with development of abundant sericite minerals.
201.7-27	2.5	Metasediments with very little FeS2-FeSx as films, threads and stringers, banding at 60° to core axis 201.7-203.6 Graphite and graphitic 1S1, and 2S1. 203.6-204.8 Rock type 2S1. 204.8-209.8 Graphitic 1S1 and 2S1. 209.8-249.7 Graphite with very little 1S1. 249.7-253.5 Porphyritized 2S1 with development of sericite. 253.5-272.5 Graphite with very little 1S1.
272.5	354.0	Altered and esite with little $F_{c}S_{c}$ near sediment contact.

$\begin{array}{ccc} \underline{\text{From}} & & \underline{\text{To}} \\ & & \text{Feet} \end{array}$

Description

272.5-277.7 Rock type 2V₃ with grey-blue to grey-black siliceous inclusions.
277.7-308.6 Rock type 2V₃, fairly to highly bleached brecciated and fractured. 2-3% iron sulfide.
308.6-345.6 Rock type 1V₃ feldspathized and epidotized.
345.6-34.0 Altered andesite with development of irregular chloritic and salic spots.

354.0

End of hole F-11.

Drilling performed by Marissette Diamond Drilling Company, Haileybury, Ontario, May 1963.

Noranda, Quebec June 4th, 1963 G. M. Dionne, Geologist

Son Vionne

Diamond Drill Hole Log

D.D.H. F-1

Location: Claim S-118291
Mallard Township
Ontario

From	TO feet	<u>Description</u>
0	7 ¹ +	Overburden.
7 ¹ +	134.5	Andesite, light green, fine granular texture, salic material (mostly feld-spar alteration products) with ill-defined foggy margins, surrounded by fine-grained alteration products. This is rock type "1V3"
		There are veins and masses of albite (?) epidote chlorite and closely associated quartz chlorite stringers. 105.1-134.5 1% finely disseminated Py, Po associated with the more intense alteration
134.5	161.2	Metasediment. Bedding varies 40-60° to core axis. Mostly fine-grained argillite rock type "IS1", few narrow bands clastite "IS2". 134.5-136.5 estimated 50% graphite 136.5-144.8 " 80% " 144.8-148.8 " 10% " 134.5-158.0 " 90% " 134.5-158.0 1-2% fine-grained Po, Py and 1-2% Py, Po trace Cp as threads parallel to the bedding. There are numberous tight fractures perpendicular to the bedding with very little displacement. 156.5-157.6 Breccia of broken graphite fragments in a quartz carbonate vein. 158.0-159.3 Rock type 1S2 with 5% very finely disseminated Po, Py and 1½% Py, Po in stringers and blebs.

From feet	<u>To</u>	<u>Description</u>
161.2	183.8	Rock type 1V3 with occasional quartz carbonate stringers and 1% irregularly disseminated Po, Py.
183.8	187.9	Rock type 1S ₁ with 40% graphite, 1% fine disseminated Po and 3% Po Py trace Cp trace ZnS in two veins parallel to bedding. Bedding at 45-50° to core axis.
187.9	189.7	Rock type 1V3 with 1% disseminated Po and 2% Po, Py trace Cp in blebs and facings.
189.7	193.3	Rock type 1S ₁ , with 30% graphite 1% disseminated Po, 3% Po Py trace Cp in blebs and stringers. Bedding at 45-50° to core axis.
193.3	200.0	Rock type $1V_3$ numerous quartz veins and $1/2-1\%$ Po disseminated.
200.0	213.7	Rock type $1S_1$ with 20% graphite, only 1% visible Po but there is 5% magnetic material which is probably all pyrrhotite. Bedding at 45-50° to core axis.
213.7	223.4	Feldspar porphyry with sharp intrusive contacts at 45° to core axis. There are a few threads of graphite in fractures adjacent to the upper contact. Very little sulphide.
223.4	224.9	Rock type 1S ₁ with 50% graphite. Two 1/8" stringers Po Py with minor cp and 1% disseminated Po. Bedding at 45° to core axis.
224.9	228.0	Feldspar porphyry contacts at 45° to core axis. Very little sulphide.
228.0	240.1	Rock type 1S1 with 20% graphite, with bedding at 45° to core axis. 3% disseminated Po and a few threads Po and Py trace cp.

D.D.H. F-1 Continued:

<u>From</u> feet	<u>To</u>	<u>Description</u>
240.1	242.2	Altered Feldspar Porphyry. Upper contact at 50° lower contact at 40°. Very little sulphide.
242.2	252.6	Rock type 1S ₁ 15% graphite. Bedding at 45°-50° to core axis. 1% fine disseminate Po Py. 251.6 2% disseminated Py Po over 2" with quartz.
2 52 . 6	257.5	Feldspar Porphyry sharp contacts at about 50° to core axis. About 1/4% disseminated Py and one Py on a fracture at 256.4.
257.5	302.5	Metasediments. 257.5-267.8 Predominantly IS1 with 10% graphite. Bedding at 45°-50° to core axis. 2% disseminated Po, 3% Po Py minor Cp in blebs and stringers parallel to the bedding. 267.8-275.3 Predominantly IS2 with 5% graphite. 4% disseminated Po, 1% lenses and threads Po, Py some Cp. 275.3-285.2 Predominantly IS1 with 5% graphite. Bedding at 45° to core axis. 3% disseminated Po, 1% Po Py lesser Cp as stringers. Stringers at 278.7 and 281.6. 285.2-288.5 Predominantly IS2 more siliceous than most of the metasediment with 1% fine Po. 288.5-296.6 Rock type IS1 light coloured with 2% fine Po Py trace Cp. 295.5 One foot of quartz carbonate veins with graphite slips. 296.6-302.5 Rock type IS2 with 1% disseminated Po Py and 1% Py in 1/4" clumps of crystals.
302.5	349.0	Rock type 1V ₃ 315.2-322.6 Quartz carbonate epidote alteration in bands at 45° to core axis, with 1% Po Py disseminated. 344.5-347.3 Epidote chlorite alteration producing foliation at 45° to core axis. 1% Po:Py disseminated throughout.

- 14 -

From To

Description

349.0

End of hole.

Drilling performed by Morissette Diamond Drilling Company, Haileybury, Ontario, March, 1963.

Hugh Jones

Noranda, Quebec June 4th, 1963.

Hugh Jones.

