

# 4917

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92G/10W

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#1 Diamond Drill Hole Location Map is in rear pocket.

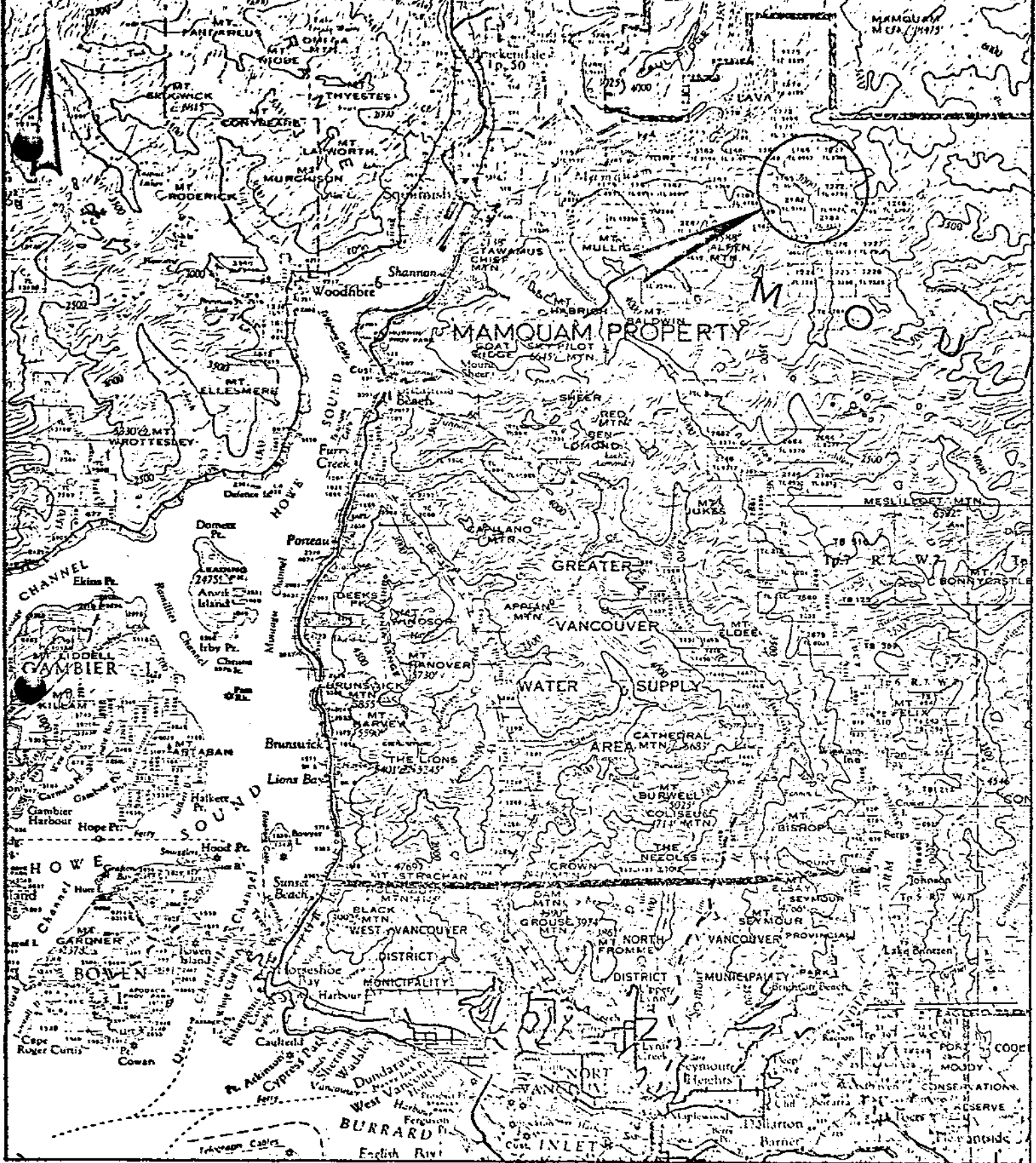
#2 Location map

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. **4917** In 2

## Introduction

From late November to mid-December, Noranda Exploration Company, Limited (NPL) conducted a drilling programme on the Mamquam Property, which is located on the Mamquam River, ten miles east of Squamish, B.C. (See Location Map p.2). Three diamond drill holes were drilled for a total of 920 feet. The location of these holes are plotted on the Diamond Drill Hole Location Map, in the rear pocket of the report. The logs of these holes are included in the report. The core is at present being stored in a garage at the Eric B. Petersen residence, 1150 Nelson, Vancouver, B.C. (Phone: 681-1804).

Briefly, the geology of the area consists of dykes and irregular intrusives of granite (granodiorite and quartz monzonite) rock intruded into an andesite - diorite - quartz diorite complex. The area of intrusion is surrounded by a propylitic halo which has a smaller zone within it of quartz and K.feldspar alteration. Pyrite, chalcopyrite, malachite, and minor molybdenite and bornite occur mainly along fractures and in some quartz veins with the inner alteration zone. Pyrite is in the propylitic zone.



LOCATION MAP OF MAMQUAM PROPERTY

SCALE: 1" = Miles

ASSESSMENT REPORT

NO. 4917 MAP #2

NORANDA EXPLORATION CO. LTD.

Property Mamquam

Sheet No. 1

Hole No. N M 1

Project No. 1055

N.T.S. 92G/10W

Core Size: BQ

Lat. 11443 N

Elev. 2495

Dip -50°

Collared Nov 30, 1973

Logged by: W. Osborne

Dep. 11070 E

Depth 500'

Bearing 0°

Completed Dec 5, 1973

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	ASSAYS	
								Cu	Mo
0-4		Overburden							
4-10	72	Granodiorite. Chl and ser alteration of mafics. Qtz-ser fractures. Some K feld along fractures.		Lim, mal, cc, cpy and py in fractures with qtz and ser. Rock highly fractured. Evidence of considerable leaching	0.5	P4001		0.15	0.005
10-20	72	Same as above		Same as above	0.4	P4002		0.04	0.001
20-30	78	Same as above (23 - 25 is dark grey andesite).		Same as above	0.3	P4003		0.19	0.002
30-40	88	Same as above to 38. 38-40 is dark grey and.		Same as above	0.3	P4004		0.30	0.002
40-50	92	40 to 44.5 and 48 to 50 is and w/a few dikelets of gd. the rest is gd similar to that above		Same as above	0.3	P4005		0.13	0.001
50-60	87	And w/small dikelets of gd. Same sil near Dks. Frr qtz vns.		Blebs and stringers of cpy along Dks and vns. Lim and minor mal along frs. Well fractured. Leaching decreases along section	0.2	P4006		0.09	0.001
60-70	84	Same as above to 67. Aph black rk (Prob. and.) to 70 Ep-chl and carb. vns.		Lim in a few fractures. mal seen in few fractures. core is well broken.	0.4	P4007		0.19	0.003

NORANDA EXPLORATION CO. LTD.

Property MAMQUAM

Sheet No. 2

Hole No. N M 1

Project No.

N.T.S.

Core Size:

Lat. Elev. Dip Collared

Logged by:

Dep. Depth Bearing Completed

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	ASSAYS	
								Cu	Mo
70-80	86	Aph black rk. prob and		Same as above	0.1	P4008		0.03	0.001
80-90	93	Mixed and. and gd. a few ep-chl vns.		Few sulfides to 85; then cpy and Py along fractures and in a few blebs near a qtz vn. Some mal. & lim. along fractures. moderately well broken	0.3	P4009		0.09	0.002
90-100	90	Same as above		same as above	0.2	P4010		0.09	0.001
100-110	90	Same as above to 102; then aph black rk-prob and. Some sil. A few ep-chl carb fractures		Same as above to 102. Altered rk has some mal & lim along frs.	0.1	P4011		0.07	0.001
110-120	68	Aph black and to 113; then gd to 117; then and w/small zones of alteration and a few gd dikes.		Fractures w/mal, lim, py and cpy. Well broken rock.	0.2	P4012		0.10	0.001
120-130	87	And w/small zones of alt and a few small granitic dikelets Some chl and ep alt along fractures.		Fractures with mal, lim, cpy and py. Well broken rock	0.4	P4013		0.15	0.002
130-140	86	Same as above to 136. The rest is and w/ep vns. One fracture w/k feld.		Same as above to 136. Only a few fractures w/min past 136. Little fracuring in core past 136.	0.3	P4014		0.14	0.004
140-150	83	And w/ ep vns. to 142. The rest is and w/a few small vns of qtz and k. feld		Fractures w/cpy,py,mal and lim	0.3	P4015		0.10	0.001

VORANDA EXPLORATION CO. LTD.

Property Mamquam

Sheet No. 3

Hole No. N M 1

Project No. N.T.S.

Core Size:

Lat.	Elev.	Dip	Coiltared	Logged by:
Dep.	Depth	Bearing	Completed	

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	ASSAYS			
								Cu	Mo		
3-160	80	And w/a few small vns of qtz and K. feld to 151. The rest aph grey rk. (prob. and). A few zones of sil.		A marked increase in pyrite over cpy starts here. Lim along many fractures; mal is along only a few. Well broken	0.4	P4016		0.22	0.008		
3-170	85	Aph grey rk. A few zones of sil Ep-chl and carb vns		Lim and py w/minor mal and cpy along fractures w/qtz Gouge 167-168. Well broken	0.4	P4017		0.17	0.001		
3-180	58	Same as above		Same as above	0.3	P4018		0.08	0.001		
3-190	88	Same as above		Mainly py along fracutures some cpy. Lim and mal along fractures. Mos <sub>2</sub> is w/qtz over 182-185. Not well broken	1.1	P4019		0.11	0.001		
3-200	74	Same as above		Same as above. Little Cu past 198	0.7	P4020		0.07	0.001		
3-210	96	Same as above		Same as above	0.6	P4021		0.03	0.001		
3-220	96	Same as above		Same as above	0.8	P4022		0.05	0.001		
3-230	74	Same as above to 223. Than And w/carb-qtz vns. Some small gd sections		Lim, py, minor, mal, cpy, along frs. Well broken local bx.	0.4						

NORANDA EXPLORATION CO. LTD.

Property Mamquam

Sheet No. 3 Hole No. N M1

Project No. N.T.S.

Core Size:

Lat. \_\_\_\_\_ Elev. \_\_\_\_\_ Dip \_\_\_\_\_ Collared \_\_\_\_\_

Logged by:

Dep. \_\_\_\_\_ Depth \_\_\_\_\_ Bearing \_\_\_\_\_ Completed \_\_\_\_\_

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.				
230-240	81	Same as above to 235; then well broken gd w/some qtz carb vns. A few K-feld frs ser alt.		Py is mainly in frs.	0.2						
240-250	79	Well broken gd w/some qtz carb vns. A few K-feld frs. ser alt.		Py is mainly in frs.	0.2						
250-260	91	Same as above		Same as above	0.4						
260-271	96	Same as above		Same as above. Mal at 270.5	0.3						
271-298	95	Gd-qm. A few ep-chl frs. ser alt.		Py mainly along frs.	0.4						
298-302	95	And w/gd dikelets		Py mainly along frs.	0.5						
302-374	92	Gd-qm w/ep-chl along fractures Some K feld along fractures. Chl & Ser of mafics		Same as above	0.3						
374-401	93	Gd-qm. Intense ser Alteration over much of section A few fractures w/k feld.		Same as above	0.3						

NORANDA EXPLORATION CO. LTD.

Property Mamquam

Sheet No. 4

Hole No. N M 1

Project No.

N.T.S.

Core Size:

Lat.

Elev.

Dip

Collared

Logged by:

Dep.

Depth

Bearing

Completed

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.				
401-411	98	Por and w/carb vns.		Same as above	0.2						
411-415	98	Gd-qm w/ep & carb along frs. Intense ser alt.		Same as above	0.3						
415-500	96	Gd-qm w/ep & carb vns. some k feld along frs.		Same as above	0.4						
		END OF HOLE									
		<i>Willis W. Osborn</i>									



*Magnum 92 B/10W*

## BONDAR-CLEGG &amp; COMPANY LTD.

## CERTIFICATE OF ASSAY

Project: MQ - 55J

Samples submitted: Dec. 7, 1973

Results completed: Dec. 13, 1973

1050 Davie Street  
Vancouver, B. C.

Y6E 1M4

I hereby certify that the following are the results of assays made by us upon the herein described core samples.

MARKED	GOLD		SILVER	Cu	Mó						TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent		
P 4001	-		-	0.15	0.005						
4002	trace		trace	0.04	0.001						
4003	-		-	0.19	0.002						
4004	-		-	0.30	0.002						
4005	-		-	0.13	0.001						
4006	-		-	0.09	0.001						
4007	0.03		trace	0.19	0.003						
4008	-		-	0.03	0.001						
4009	-		-	0.09	0.002						
4010	-		-	0.09	0.001						
4011	-		-	0.07	0.001						
4012	-		-	0.10	0.001						
4013	-		-	0.15	0.002						
4014	-		-	0.14	0.004						
4015	-		-	0.10	0.001						
4016	-		-	0.22	0.008						
4017	-		-	0.17	0.001						
4018	-		-	0.08	0.001						
4019	-		-	0.11	0.001						
4020	-		-	0.07	0.001						
4021	-		-	0.03	0.001						
P 4022	-		-	0.05	0.001						

NORANDA EXPLORATION CO. LTD.

Property Mamquam

Sheet No. 1 Hole No. N M 2

Project No. 55 J N.T.S.

Core Size: BQ

Lat. 102 41 N Elev. 2770

Dip -50°

Collared Dec 7/73

Logged by: W. Osborne

Dep. 117 OOE Depth 238'

Bearing 0°

Completed Dec 10/73

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	ASSAYS					
								Cu	Mo	Au	Ag		
0-10		Overburden											
10-35	87	Intensely Silicified qm. Some qtz vns. Ser along fractures		Py along Discont. fractures Tiny speck of mal at 19.5 and 32. Cpy seen at 24.5. Fault zone (gouge) between 27 & 28	0.2								
35-38	87	Por and dike			0.1								
38-40.5	87	Silicified qm.		A few specks of mal. Py along fractures	0.3								
40.5-41.5	92	Por and dike		Py mainly along frs.	0.8								
41.5-47	92	Sil. qm.		Same as above	0.8								
47-48	92	Por and		Same as above	0.8								
48-82.5	93	Silicified qm. A few qtz vns. Some ser along vns.		A few specks of mal. Mal & cpy between 77 and 78. Py along fractures	0.3								
70-80		Sample				P4023	10	0.05	0.002	tr.	tr.		

Lat.	Elev.	Dip	Collared	Logged by:							
Dep.	Depth	Bearing	Completed	ASSAYS							
Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.				
								Cu.	Mo.	Au.	Ag.
2.5-84	96	And.		Py along fractures	0.4						
4-97	97	Silicified qm. Qtz. vns.		Same as above	0.3						
7-103.5	86	And. A few Qtz-carb vns			0.2						
03.5-104	87	Weakly to moderately silicified qm to 112 (Ep & chl along fractures) Intensely silicified with Qtz vns. to end		Mal and cpy between 139 and 140	0.1						
40-142	93	And.		Some mal, cpy, py in this	0.3						
42-170	92	Weak to moderately silicified qm. some Qtz. vns. Ep and K-feld along fractures		)	0.2						
70-180	100	Same as above to 176.5. Por rhyodacite to end. Qtz vns. and ep along fractures		Py & cpy & Mos <sub>2</sub> along Qtz vns. cpy and Mos <sub>2</sub> mainly in rhyodac. diss. py. Some brass on outside of core inside 171	0.5	P4024	10'	0.03	0.002	-	-
80-190	99	Porphyritic rhyodacite Qtz vns and ep along fractures		Py & cpy & Mos <sub>2</sub> along Qtz vns.	1.2	P4025	10'	0.04	0.005	-	-

Lat. Elev. Dip Collared Logged by:

Dep. Depth Bearing Completed

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	ASSAYS			
								Cu.	Mo.	Au.	Ag.
190-200	88	Same as above		Same as above but with less sulfides	0.6	P4026	10'	0.05	0.004	-	-
200-210	98	Same as above		Same as above but with less sulfides	0.4	P4027	10'	0.04	0.007	-	-
210-218.5	98	Same as above		Same as above	0.4						
218.5-231.5	88	Aph dark grey rock- prob and. A few fractures with carb.			0.1						
231.5-235	92	Weak & moderately silicified qm One qtz vns. at 134.5		Mos <sub>2</sub> in qtz vns.	0.2						
235-238	92	Aph dk grey and.		Small gouge zones.	0.2						
END OF HOLE											
<i>Willis W. Osborn</i>											

To: Noranda Exploration Company Limited (N.P.L.)

REPORT No A23-1

PAGE No. 1

**BONDAR-CLEGG & COMPANY LTD.**

DATE: December 20, 1973

1050 Davie Street  
Vancouver, B.C. V6E 1M4

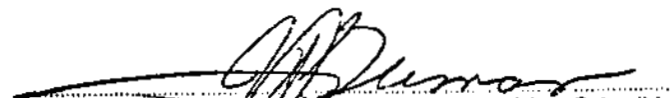
**CERTIFICATE OF ASSAY**

Samples Submitted: Dec. 18/73  
Results Completed: Dec. 20/73

W.O. #SBC-56 (M.Q.)

I hereby certify that the following are the results of assays made by us upon the herein described core samples.

MARKED	GOLD		SILVER	Cu	Mo						TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent		
P4023	trace		trace	0.05	0.002						
4024	-		-	0.03	0.002						
4025	-		-	0.04	0.005						
4026	-		-	0.05	0.004						
P4027	-		-	0.04	0.007						

  
Registered Assayer, Province of British Columbia

NORANDA EXPLORATION CO. LTD.

Property MAMQUAM

Sheet No. 1 Hole No. NM 3

Project No. 1055

N.T.S.

Core Size: BQ

Lat. 11443N

Elev. 2495

Dip -20°

Collared Dec. 11/73

Logged by: W. Osborne

Dep. 11070

Depth 182'

Bearing 0°

Completed Dec. 13/73

ASSAYS

Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	ASSAYS				
								Cu	Mo			
0-5		Overburden										
5-10	61	Qm. Sericitic, silicic and Propylitic alteration. Qtz vns. A few zones of andisite.		Mal, lim, cpy and py mainly with Qtz vns. Leaching evident. Well known	0.5	4028		0.16	0.013			
10-20	90	Same as above to 14. Then and u/a few dikelets of gd. Seat Qtz vns.		Mal, lim, Cpy and py mainly w/ Qtz vns. Some MoS <sub>2</sub> vns. from 14-20. Leaching evident. Well broken	0.4	4029		0.19	0.004			
20-30	53	Same as from 14-20 for first 5 feet. Rest is and w/carb vns.		Same as above. Little sulfides Past 25.	0.3	4030		0.14	0.004			
30-40	85	Same as last 5 feet. Por rhyodacite to end. Ep along fractures. A few Qtz vns.		Cpy and py w/Qtz vns. 37 to 40' Some lim and leaching	0.3	4031		0.10	0.004			
40-50	83	Aph dk grey and w/seat. Qtz vns. A few, small rhyodac dks.		Mal, lim, cpy and py along fractures as rhyodac w/Qtz and ser.	0.3	4032		0.05	0.003			
50-60	80	Por rhyodac.		Minor mal, cpy, lim along frs.	0.2	4033		0.04	0.002			
60-70	77	Same as above from 60 to 62 The rest is aph Dk grey and w/ a few small rhyodac dks. Ep along frs. and Qtz-carb vns.		Py w/vns. cpy along frs.	0.5	4034		0.007	0.005			

Lat.	Elev.	Dip	Collared	Logged by:					
Dep.	Depth	Bearing	Completed	ASSAYS					
Footage	Rec'y	Rock Type/Alteration	Graphic Log	Mineralization/Structure	% Sulfides	Sample No.	Lt.	Cu	Mo
70-80	99	Aph dk grey and continues to 75.5. Rest is por rhyodacite.		Py and cpy along frs w/qtz. MoS <sub>2</sub> seen at 76.	1.1	4035		0.05	0.004
80-90	99	Por.rhyodacite continues to 82 Rest is mixed aph grey and rhyodacite. Qtz vns.		Py and cpy along frs. and qtz vns. Properting py to cpy increases.	0.8	4036		0.04	0.003
90-100	93	Mixed aph grey and rhyodacite. Qtz vns.		Py and cpy along frs and qtz vns	0.6	4037		0.05	0.003
100-110	96	Same as above		Same as above	0.7	4038		0.06	0.002
110-120	88	Same as above to 117. Aph dk grey and to end. Qtz vns. Ep along frs.		Same as above to 117	0.7	4039		0.06	0.003
120-130	90	Aph dk grey and. Ep along frs. Qtz.vns. Qtz vns decrease down section. Qtz-carb vns.		Py with minor cpy along frs.	1.4	4040		0.12	0.006
130-140	89	Same as above. Few Qtz vns. Ep along frs.		Lim and py with every minor mal and cpy along frs. Moderately well broken from 130-135	0.7	4041		0.07	0.003
140-150	76	Same as above		Same as above. Moderately well broken. Much leaching	0.3	4042		0.05	0.003

Lat.

Elev.

Dip

Collared

Logged by:

Dep.

Depth

Bearing

Completed

ASSAYS

Footage

Rec'y

Rock Type/Alteration

Graphic Log

Mineralization/Structure

% Sulfides

Sample No.

Lt.

Cu

Mo

150-160

42

Same as above

Same as above. Core well broken

0.3

4043

0.06

0.002

160-170

47

Same as above

Same as above

0.3

4044

0.08

0.002

170-182

76

Same as above to 174. Rest is Rhyodacite.

Lim along frs. Minor mal along frs in rhyodac.

0.3

4045

0.07

0.002

END OF HOLE

(This hole was stopped prematurely because of caving)

*Willis W. Orlovant*



1050 Davie Street  
Vancouver, B. C.  
V6E 1M4

DDH #3

Proj. 55

## CERTIFICATE OF ASSAY

Samples submitted: Jan. 4, 1974  
Results completed: Jan. 8, 1974I hereby certify that the following are the results of assays made by us upon the herein described core samples.

MARKED	GOLD		SILVER	Cu	Mo						TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent		
P 4028				0.16	0.013						
4029				0.19	0.004						
4030				0.14	0.004						
4031				0.10	0.004						
4032				0.05	0.003						
4033				0.04	0.002						
4034				0.07	0.005						
4035				0.05	0.004						
4036				0.04	0.003						
4037				0.05	0.003						
4038				0.06	0.002						
4039				0.06	0.003						
4040				0.12	0.006						
4041				0.07	0.003						
4042				0.05	0.003						
4043				0.06	0.002						
4044				0.08	0.002						
P 4045				0.07	0.002						


  
 Registered Assayer, Province of British Columbia

STATEMENT OF QUALIFICATIONS

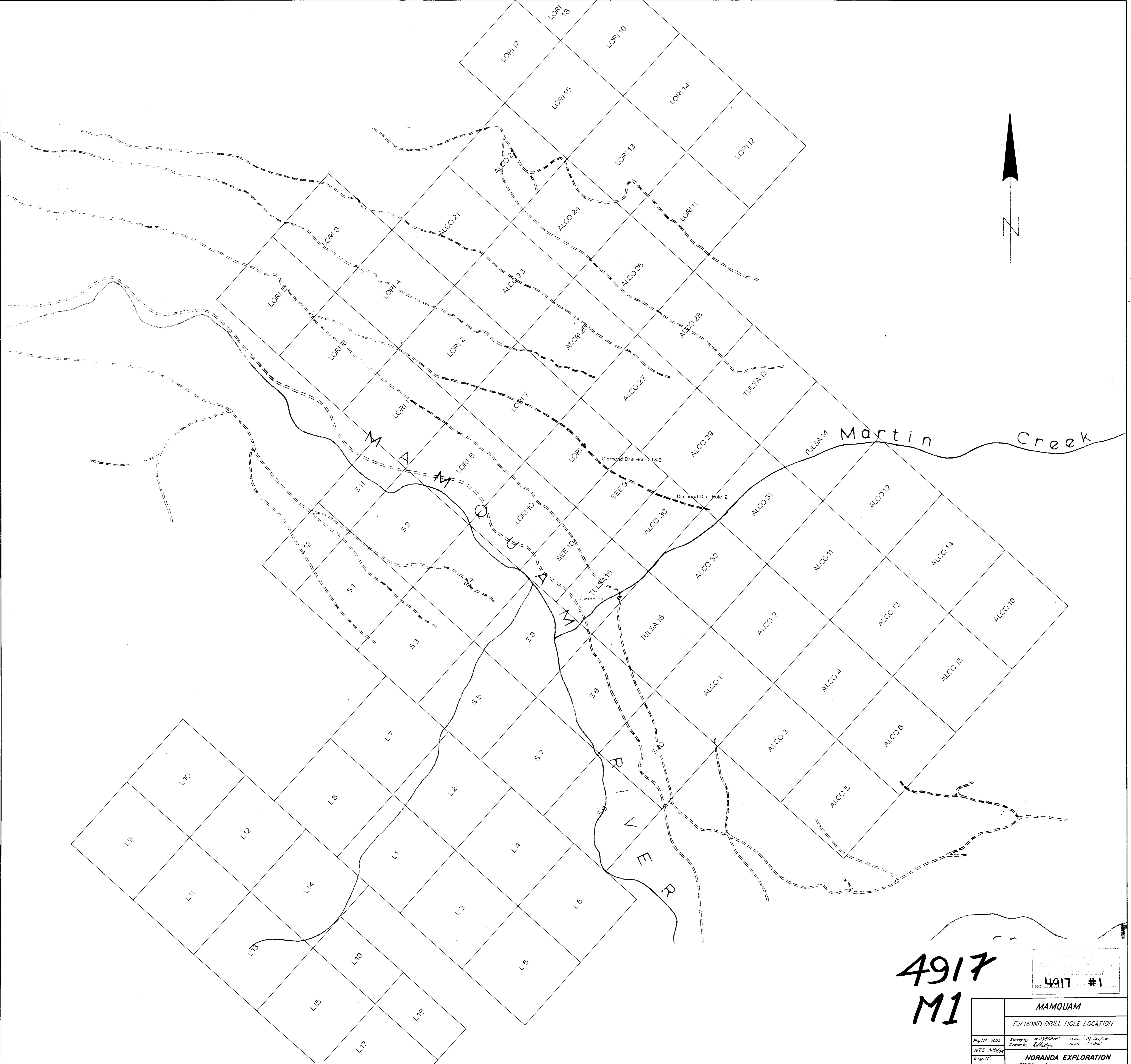
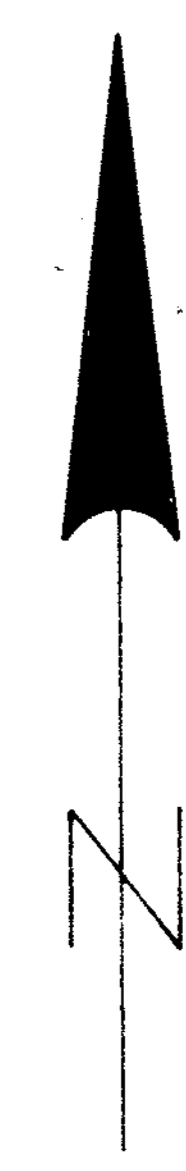
I, Willis W. Osborne, of the City of Vancouver, Province of British Columbia, Do certify that:

1. I have been employed as a geologist by Noranda Exploration Company, Limited, continuously since May, 1966.
2. I am a graduate of the University of Minnesota, with a Bachelor of Science degree in Geology (1960) and of the University of British Columbia with a Master of Science degree in Geology (1966).
3. I am a member of the Canadian Institute of Mining and Metallurgy and a Fellow of the Geological Association of Canada.

Dated at Vancouver  
this 17th day of January, 1974

*Willis W. Osborne*

Willis W. Osborne,  
Geologist,  
Noranda Exploration Company, Ltd.,  
(No Personal Liability)



4917  
M1

4917 #1

<b>MAMQUAM</b>	
DIAMOND DRILL HOLE LOCATION	
Proj. N° 1055	Survey by: H. OSBORNE Date: 22 Jan 74
NTS 925/64	Drawn by: J. Kelly Scale: 1" = 200'
Draw. N°	<b>NORANDA EXPLORATION</b>
	OFFICE: Vancouver