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X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET, DON MILLS, ONTARIO

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524232
Northern Gem
92J/15
JUL 31 1985

CERTIFICATE OF ANALYSIS

TO: NORANCA EXPLORATION COMPANY LIMITED
ATTN: J. ELIZABETH CLEMSON
55 YONGE STREET, SUITE 400
TORONTO, ONTARIO
M5E 1J4

CUSTOMER NO. 444

DATE SUBMITTED
26-JUN-85

GM 1+2 copy 1

REPORT 24816

REF. FILE 20308-04

2 ROCKS

WERE ANALYSED AS FOLLOWS:

	METHOD	DETECTION LIMIT
AU PPM	NA	10.000
NA PPM	NA	100.000
SC PPM	NA	0.100
CR PPM	NA	2.000
MA PPM	DCP	2.000
FE %	NA	0.010
CC PPM	NA	1.000
NI PPM	DCP	1.000
CL PPM	DCP	0.500
ZA PPM	DCP	0.500
AS PPM	NA	2.000
SE PPM	NA	3.000
BR PPM	NA	1.000
RB PPM	NA	20.000
SR PPM	NA	20.000
MC PPM	NA	5.000
AG PPM	DCP	0.500
CO PPM	DCP	0.200
SB PPM	NA	0.200
CS PPM	NA	0.500
BA PPM	NA	20.000
LA PPM	NA	0.500
CE PPM	NA	3.000
ND PPM	NA	5.000
SM PPM	NA	0.100
EU PPM	NA	0.200
YB PPM	NA	0.200
LU PPM	NA	0.050
HF PPM	NA	1.000
TA PPM	NA	1.000

Report 2

	METHOD	DETECTION LIMIT
W PPM	NA	3.000
PB PPM	DCP	2.000
BI PPM	DCP	0.500
TH PPM	NA	0.500
U PPM	NA	0.500

DATE 30-JUL-85

X-RAY ASSAY LABORATORIES LIMITED
CERTIFIED BY 

NOTE: DETECTION LIMIT IS VARIABLE DUE
TO THE NATURE OF SAMPLE.

SAMPLE	AU PPB ¹	NA PPM	SC PPM	CR PPM	MN PPM	FE %
GM-1	1700	INF	24.0	180	1100	21.3
GM-2	15000	INF	55.0	380	370	15.5

$$\begin{aligned} &= 0.435 \\ &\quad \text{oz/short ton} \\ &= 0.0493 \\ &\quad \text{oz/short ton} \end{aligned}$$

1) Au determined only on a 1g sample
 \therefore could be a nugget effect. Ore
 microscopy reveals most gold to be
 very fine grained and evenly
 distributed \therefore the nugget effect
 may be minimal

SAMPLE	CC PPM	NI PPM	CU PPM	ZN PPM	AS PPM ²	SE PPM
GM-1	2500	110	2.0	190.	23000	<3
GM-2	48000	1500	2.0	25.0	>10000	<50

2. Neutron Activation is not suitable for samples rich in As \therefore cannot determine As content of sample GM-2

SAMPLE	BR PPM	RB PPM	SR PPM	MC PPM	AG PPM	CD PPM
GM-1	<30	<150	<1300	INF	<0.5	<0.2
GM-2	<400	<1200	<9000	INF	<0.5	<0.2

INF - COMPCSION OF THIS SAMPLE MAKES DETECTION IMPOSSIBLE BY THIS METHC

SAMPLE	SB PPM	CS PPM	BA PPM	LA PPM	CE PPM	ND PPM
GM-1	8.2	7.7	<1000	>10000	>10000	>4000
GM-2	48.0	<40.0	<5000	>10000	>10000	>4000

3) Neutron activation is suitable for samples containing $< 5,000$ ppm REE. An assay is recommended. This is done by XRF on a fused pellet. The sample is diluted. Ce is best analyzed by DCP.

SAMPLE	SM PPM	EU PPM	YB PPM	LU PPM	HF PPM	TA PPM
GM-1	>400.	18.7	34.0	4.34	3	<6
GM-2	>400.	50.7	16.4	4.44	<15	<25

> - CONCENTRATION TOO HIGH FOR TREATMENT BY GEOCHEMICAL METHOD

SAMPLE	W PPM	PB PPM	BI PPM	TH PPM	U PPM
GM-1	<500	18	7.0	3.0	139.
GM-2	<2500	18	57.0	43.0	630.