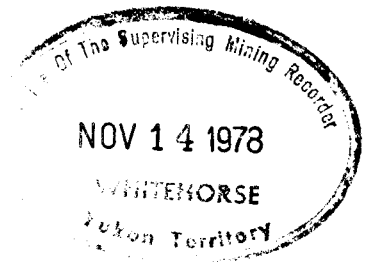
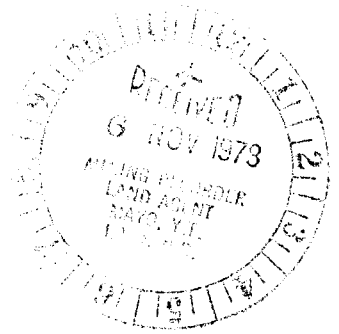


REPORT ON THE HEART-1 MINERAL CLAIM
KENO LADUE RIVER, MAYO MINING DISTRICT
LAT. 63° 59' NORTH; LONG. 134° 50' WEST
N.T.S. MAP-SHEET 105-M-15

based on work done on September 16, 1978

for

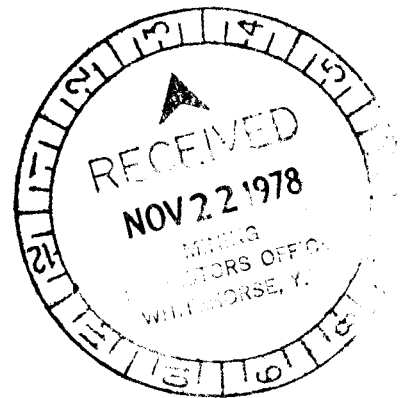
Welcome North Mines Ltd. (N.P.L.)



by

R.R. Culbert, PhD., P.Eng.

10 October, 1978



090392

D.G. Leighton & Associates Ltd.

This report has been examined by the
Geological Examination Board and is recom-
mended to the Board as a report of value.
ed as a report of value.

100.00

D. B. Craig

Under
Act.

[Signature]

E. R. BAXTER
Supervising Mining Recorder

[Signature]

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D. G. LEIGHTON & ASSOCIATES LTD.
GEOLOGICAL CONSULTANTS

• 3155 WEST 12TH AVENUE
VANCOUVER, B.C.
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REPORT ON THE HEART-1 MINERAL CLAIM
KENO LADUE RIVER, MAYO MINING DISTRICT

INTRODUCTION

At the request of Mr. John S. Brock, president of Welcome North Mines Ltd. (N.P.L.), an examination of the HEART-1 mineral claim was made. The property is a uranium prospect owned by Mr. G. McLeod and is located about 40 kilometers northeast of Mayo in the Yukon Territory.

The claim was visited on September 16, 1978, at which time the geology was examined and a number of geochemical samples collected. Two bulk stream sediment samples were subsequently tested for heavy mineral concentrates. The writer was accompanied by Mr. McLeod during the examination.

Conclusions set forth here are based on the work cited above.

SUMMARY AND CONCLUSIONS

- 1) The HEART property is now comprised of one unsurveyed mineral claim which is owned by Mr. G. McLeod.
- 2) The claim, a uranium prospect, is situated 40 kilometers northeast of Mayo, Y.T.
- 3) The closest road is at Keno Hill, about 20 kilometers to the east. At present, access is most convenient by way of helicopter based in Mayo.
- 4) The HEART claim is underlain by Yukon Group metamorphic rocks, including amphibolites, schists and sandstone.
- 5) Work summarized in this report is based on a one-day geological examination and on the results of stream sediment heavy mineral studies of samples collected.
- 6) No indications of uranium mineralization were observed on the property, nor does the geology appear especially favourable for significant deposits.
- 7) Indications of post-metamorphic hydrothermal activity are weak and not associated with radioactivity.
- 8) Heavy mineral separates from the two streams draining the area showed no unusual concentrations of radioactive minerals. Rutile was the only mineral present in unusual quantities.
- 9) It seems unlikely that a vein system of economic proportions could be hidden on this property, except under the overburden of

3.

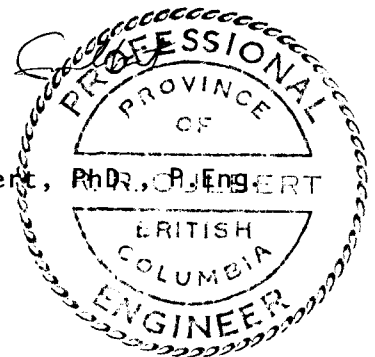
the lowermost slopes. This area is sufficiently confined that it could be tested with soil sampling by a three or four man crew in one day.

- 10) Interest in this property must lie in judgment of its history, rather than its geology, and no recommendations regarding further work are made.

Respectfully submitted,

R.R. Culbert

R.R. Culbert, Ph.D., P.Eng.



10 October, 1978

GENERAL DESCRIPTIONSBackground

The property was originally staked in 1973 as the JACK claim and later, in 1975, as the HEART. The claims were tested by DINA with a gamma ray spectrometer; however, no uranium mineralization was found.

Location and Access

The HEART-1 mineral claim is located 40 kilometers northeast of Mayo and 20 kilometers east of Keno Hill. The property is immediately east of the Keno Ladue River at approximately 2,500 feet above sea level.

Claims

The HEART property consists of the following claim held in the name of Mr. Gordon McLeod:

<u>Claim</u>	<u>Grant No.</u>	<u>Expiry Date</u>
HEART-1	YA 1417	10 October, 1978

GENERAL GEOLOGY

The HEART property is underlain by metamorphic rocks assigned to the Yukon Group. These include interbedded amphibolite, biotite-hornblende schists, pyllitic staurolite-sericite schist and thinly micaceous sandstone, according to the description provided in the 1977 revision of the Northern Cordillera Mineral Inventory - 1972 (Archer, Cathro & Associates Ltd.).

Interest in this property is based on a reported vein whose location is presently known only approximately. Outcrop tends to be in bands, but is generally good except for the lowermost slopes. Radioactivity as measured by SPP2 scintillometer ranges from 60 cps for amphibolite layers to roughly 150 cps (excluding effects of enclosure by overhangs) in bands of biotite or muscovite-staurolite schists. This variation is about what would be expected from the differences in potassium content between rock types and does not suggest any unusual concentrations of uranium or thorium.

Some quartz veining and one fairly large carbonate vein were observed in this area, but no unusual minerals (or radioactivity) appear to be involved. Local hematitization (with minor pyrite and specular hematite) was the only other sign of hydrothermal activity observed.

HEAVY MINERAL SURVEY

Large sand and gravel samples were collected from two creeks draining the area where the radioactive vein was reported to occur (G. McLeod, personal communication). It was hoped that if any veins containing heavy minerals occur as reported, mineral fragments would be present in these creeks - the steep topography ensuring transport of detritus.

A heavy mineral separation was made for the two samples by Mr. C.F. Fipke in Kelowna, B.C., using heavy liquid techniques. Further splitting into magnetic, paramagnetic and non-magnetic fractions followed.

Uranium minerals were sought in the heavy - non-magnetic fraction using a low energy gamma radiometric spectrometer. None were present.

The coarse portion (035 mesh) of this fraction was essentially non-radioactive and the fine portion (080 mesh) recorded 40 - 45 ppm uranium daughter product equivalents. A thorium level of approximately six times this level suggests that this minor radioactivity is due to the usual small component of resistant heavy minerals such as zircons, xenotime and allanite. The only other heavy mineral observed in unusual quantities that might have produced the "heavy brown" vein filling reported was rutile, although this is not considered likely.

BREAKDOWN OF COSTS - for assessment purposes
(approximate only)

Wages and salaries - 2 days @ \$175.00 per day	\$ 350.00
Benefits @ 12%	40.00
Transport - mainly helicopter	550.00
Geochemical costs - mainly study of heavy mineral components of bulk stream-sediment samples	250.00
Miscellaneous; includes report preparation, meals and accommodation	110.00
	<hr/>
Total	<u><u>\$1,300.00</u></u>