

2381

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- #2 Geochemical Survey - Copper in envelope attached
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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2381 MAP

FORM NO. L4-811.P REPORT PAPER GRAND & TOY LIMITED

REPORT ON
GEOCHEMICAL AND MAGNETOMETER SURVEYS
ON THE PORT HARDY OPTION
FOR
YELLOWKNIFE BEAR MINES LTD.

Between November 1969 and March 1970 the writer supervised geochemical and magnetometer surveys on a group of 22 claims in the Port Hardy area of British Columbia. The following is a resumé of work done and observations:

PROPERTY

The property consists of 21 contiguous full claims and one fraction, as follows:

Little Joe # 1 and 2	Record No. 15473 & 15474
Little Joe # 3 to 10 incl.	16327 to 16334
Little Joe # 13 to 18 incl.	16337 to 16342
Little Joe # 34	16454
Alice # 1 to 4 incl.	16495 to 16498
Ann # 1 Fraction	16880.

The claims are recorded in the names of Barclay Resources Ltd., and Port Hardy Copper Mines Ltd. Yellowknife Bear Mines Ltd. holds an option to acquire an interest in the claims.

The property is located about midway between Port Hardy and Coal Harbour, on northern Vancouver Island, approximately at 50°-40' N, 127° -28'W. The road between these towns passes about a mile to the west of the claim group, and two good logging roads extend across the property.

WORK DONE

A picketed and flagged grid system was laid out covering the entire property, with an east-west base line, and north-south picket lines run at 300 foot interval. All lines were

chained, and stations established at 100 foot interval. Tie lines were run along the two roads for directional control. Total length of base, picket, and tie lines was 162,800 feet or 31 miles.

A magnetometer survey was carried out over this line grid using a Sharpe MF1 Fluxgate magnetometer with 20 gamma per scale division sensitivity. Readings were taken at all stations on the line grid and at intervening points where warranted. Results, corrected for diurnal variation, and contoured are shown on the accompanying 200 foot to the inch plan.

A geochemical survey was carried out over the same line grid. At each station a sample of the B horizon was taken, at a depth of approximately twelve inches. The minus 80 mesh fraction of these samples was analysed by hot extraction and atomic absorption methods for its copper, zinc and molybdenum content. Analyses were done by Bondar-Clegg and Company. The copper and zinc content, shown as parts per million, are plotted and contoured on accompanying 200 feet to the inch plans. The molybdenum content proved to be very low with a few exceptions, and was not plotted as a separate plan.

Appendix A lists the men employed in these surveys, working dates, and salaries.

GEOLOGY

Geology of the property is now in the course of being mapped. The bulk of the property is underlain by volcanics of intermediate composition - andesites with some basalt and dacite variants. Interbedded with the volcanics are two or more limestone beds a few tens of feet thick. All have a general east-west strike and southerly dip. Intrusive into these rocks are andesite and quartz diorite dikes. A large quartz diorite mass is known to exist at depth in the southwesterly part of the property.

Skarn mineralization, consisting of copper, zinc, and iron sulfides and oxides, and various lime-silicate minerals, is known at several locations in the limestones. Chalcopyrite, pyrite, and malachite, so far in small quantities only, have been observed in shears fractures and breccias in the volcanics.

MAGNETIC RESULTS

Magnetite in skarn zones has caused a number of extreme magnetic highs and lows. These dominate the magnetometer results to such an extent that subtleties associated with other changes in rock type are obscured. A general east-west trend is evident, and the geological mapping, when combined with the magnetics, should enable a more detailed interpretation to be made. Meanwhile, the four skarn zones known in the westerly part of the group are outlined, and their extensions both along strike and down dip indicated. Also a new and large skarn zone that does not outcrop has been outlined in the area 800 N, 3300 E. Other, lesser, linear highs,

suspected of being skarn, traverse the easterly part of the property circa 2100 N and 1000 S.

GEOCHEMICAL RESULTS

The geochemical results also are dominated by the skarn zones. Known skarns in the westerly part of the property stand out as both copper and zinc highs, while the new zone indicated by magnetics circa 800 N, 3300 E is one of the better copper and zinc highs.

Of significance is the fact that where the skarn location is known, the geochemical highs coincide very closely with the outcropping source, indicating there has been little or no downhill migration of the soils. Hence the bedrock source of any anomalous high can be expected to be located in the immediate vicinity of the high.

Some less intense geochemical highs of perhaps greater economic importance, are outlined in the easterly claims. A linear area of copper and zinc highs centred at 700 N, 6900 E coincides with a magnetic low. A second such area centred at 600 S, 7200 E transgresses magnetic trends; some sparse copper mineralization in sheared volcanics has been found in the immediate vicinity. A smaller copper high, with no associated zinc, follows a magnetic low trend and is centred at 1400 N, 4800 E.

Molybdenum results were consistently low to not detected. A total of 45 samples carried better than three parts Mo per

million; these are shown in brackets on the copper plot, rather than on a separate plan. Without exception they correspond to areas of high copper and high zinc values, though in a few cases the individual samples do not correspond. The bulk, and probably all, can be related to known or suspected skarn.

CONCLUSIONS AND RECOMMENDATIONS

The skarn zones, though as far as is known quite limited in volume, are so magnetic and contribute so much copper and zinc to the soils that they tend to obscure other magnetic or metalliferous features that may exist.

While the prime target of the program is disseminated chalcopyrite of the type found at the nearby Utah Construction Company deposit, such skarn zones can be quite profitably mined, given the requisite tonnage and grade. Those previously known on the property appear to have been investigated thoroughly, though results are not available to the writer. However, the newly outlined zone at 800 N, 3300 E is not known to have been tested, and should receive attention.

Once geological mapping is completed the various other magnetic and geochemical features in the easterly claims can be better evaluated. Further examination appears warranted in the form of stripping and/or induced polarization surveys.

Respectfully Submitted,

L. G. Phelan, B.A.Sc. P. Eng.
Consulting Geologist.

Toronto, Ontario
30 April 1970

APPENDIX A

Men employed, dates, salaries and wages:

LINECUTTING

		1969.		
J.L. Menard - Rouyn, Que. - Foreman	8	Nov.-20	Dec.	\$ 1,000.00
W. Maude - Port Hardy, B.C.	11	Nov.-20	Dec.	35.00
J. Bell - Port Hardy, B.C.	11	Nov.-20	Dec.	35.00
W. Jacobson " "	11	Nov.-20	Dec.	401.00
R. Walsus " "	11	Nov.-20	Dec.	149.00
L. Walsus " "	11	Nov.-20	Dec.	75.00
P. Walsus " "	11	Nov.-20	Dec.	75.00
J. Walsus " "	11	Nov.-20	Dec.	35.00
D. Walsus " "	11	Nov.-20	Dec.	35.00
A. Walsus " "	11	Nov.-20	Dec.	360.00
T. Walsus " "	11	Nov.-20	Dec.	306.00
W. Walsus " "	11	Nov.-20	Dec.	252.00
B. Nelson " "	11	Nov.-20	Dec.	252.00
H. Walsus " "	11	Nov.-20	Dec.	126.00
				<hr/>
				\$ 3,136.00

GEOCHEMICAL SURVEY

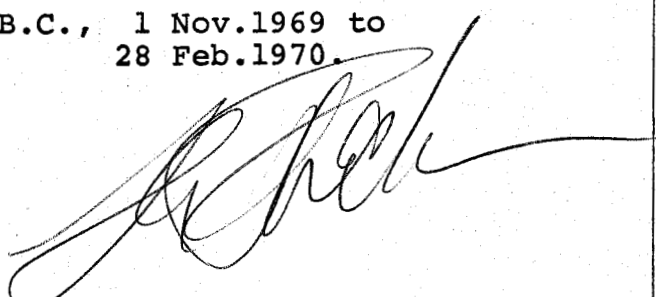
		1970.		
J. Fletcher - Sault Ste. Marie, Ont.	6	Jan.-28	Feb.	600.00
J.L. Menard, Rouyn, Que.	6	Jan.-28	Feb.	500.00
R. Stapley, Port Hardy, B.C.	6	Jan.-28	Feb.	648.00
P. Morgan, " "	6	Jan.-28	Feb.	630.00
C. McHugh, " "	6	Jan.-28	Feb.	450.00
T. Priest " "	6	Jan.-28	Feb.	54.00
				<hr/>
				\$ 2,882.00

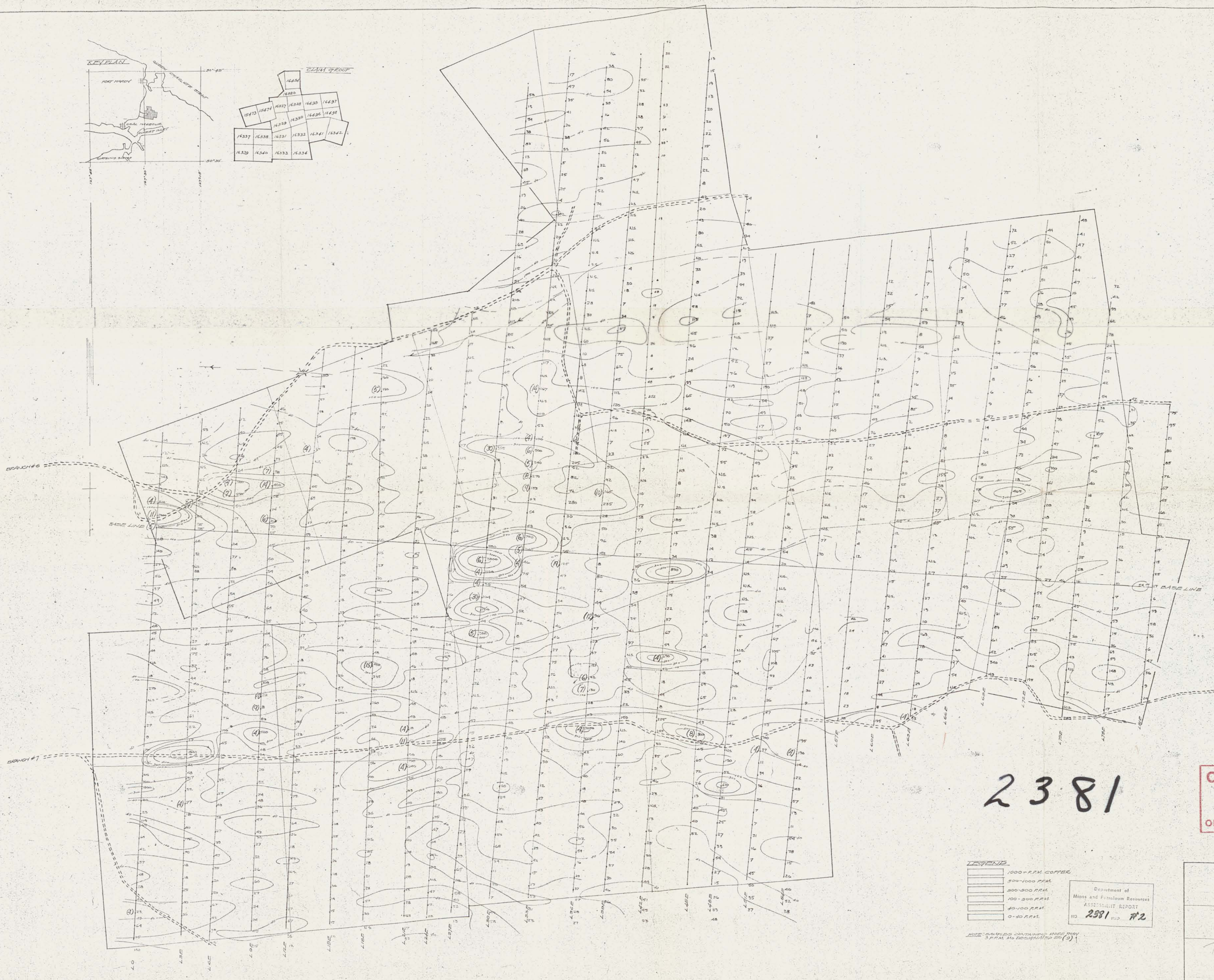
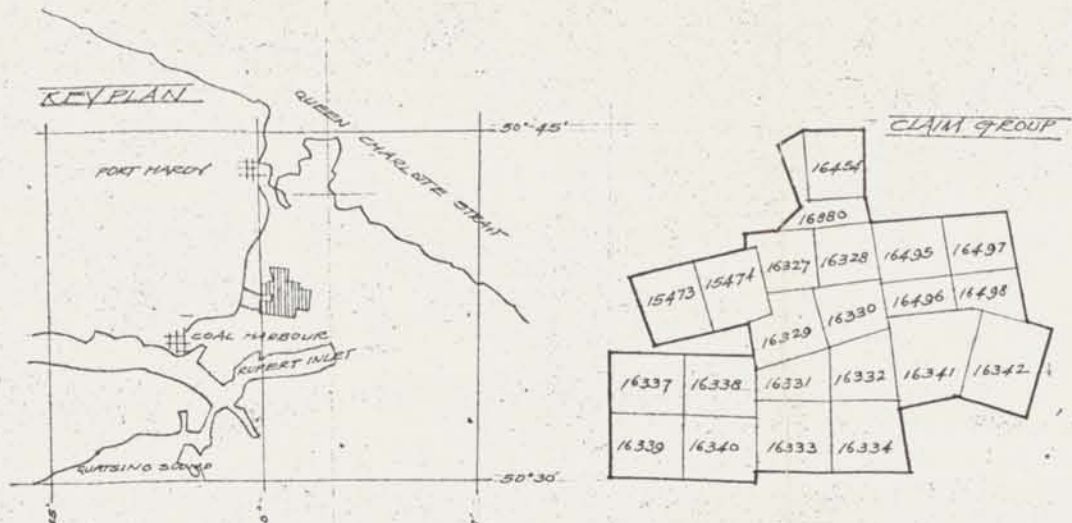
MAGNETOMETER SURVEY

		1970.		
J. Fletcher - Sault Ste. Marie, Ont.	6	Jan.-28	Feb.	600.00
- Qualifications: - Graduate in geology from Cambrian College, experienced geophysical instrument instrument operator.				
Total				<hr/>
				\$ 6,618.00

CONSULTANT & SUPERVISION

L. G. Phelan M.A.Sc. P.Eng. B.C., 1 Nov.1969 to
360 Bay St., Toronto, Ont. 28 Feb.1970.





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CAUTION
50%
 OF ORIGINAL SIZE

TRENDS

1000+ P.P.M. COPPER
500-1000 P.P.M.
300-500 P.P.M.
100-300 P.P.M.
50-100 P.P.M.
0-50 P.P.M.

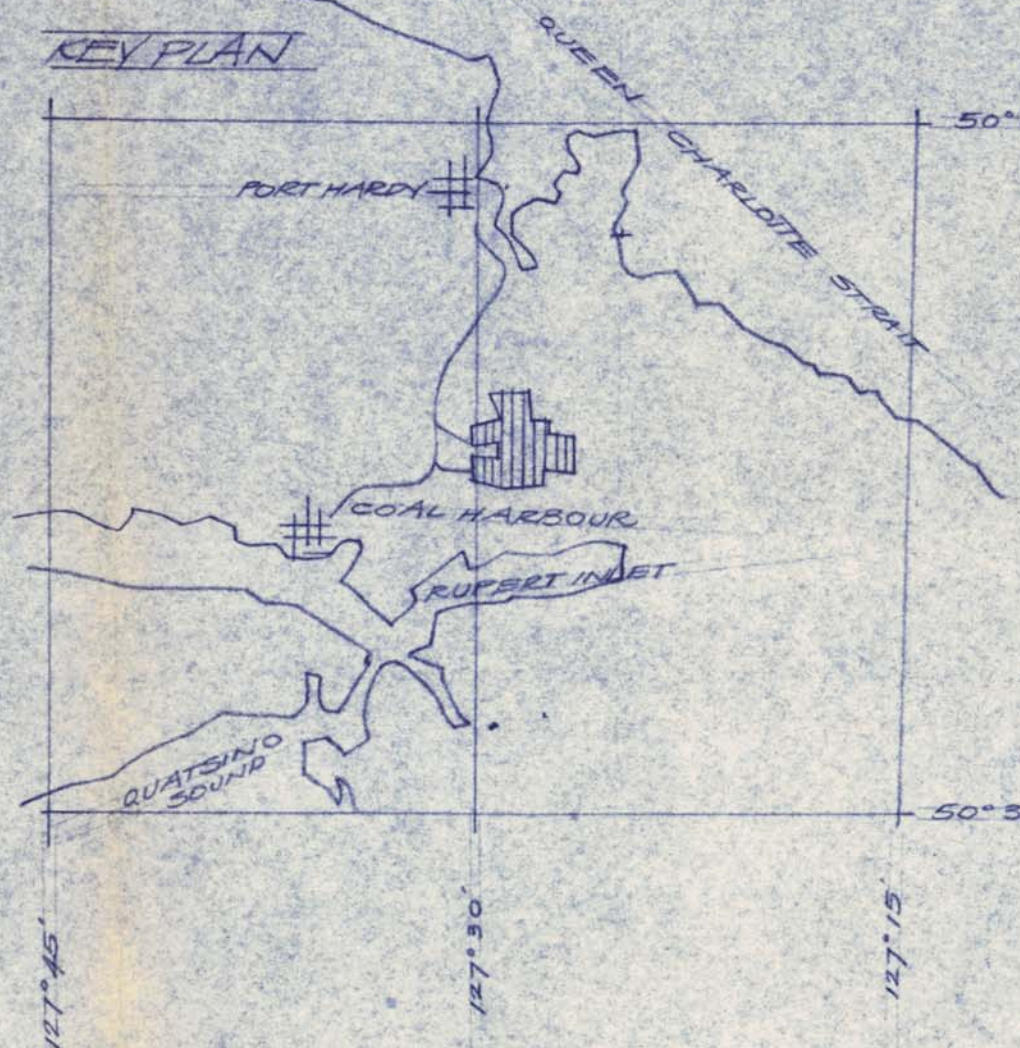
Department of
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 ASSESSMENT REPORT
 NO. 2381 IND. #2

YELLOWKNIFE BEAR MINES LTD.
 PORT HARDY OPTION

GEOCHEMICAL SURVEY - COPPER

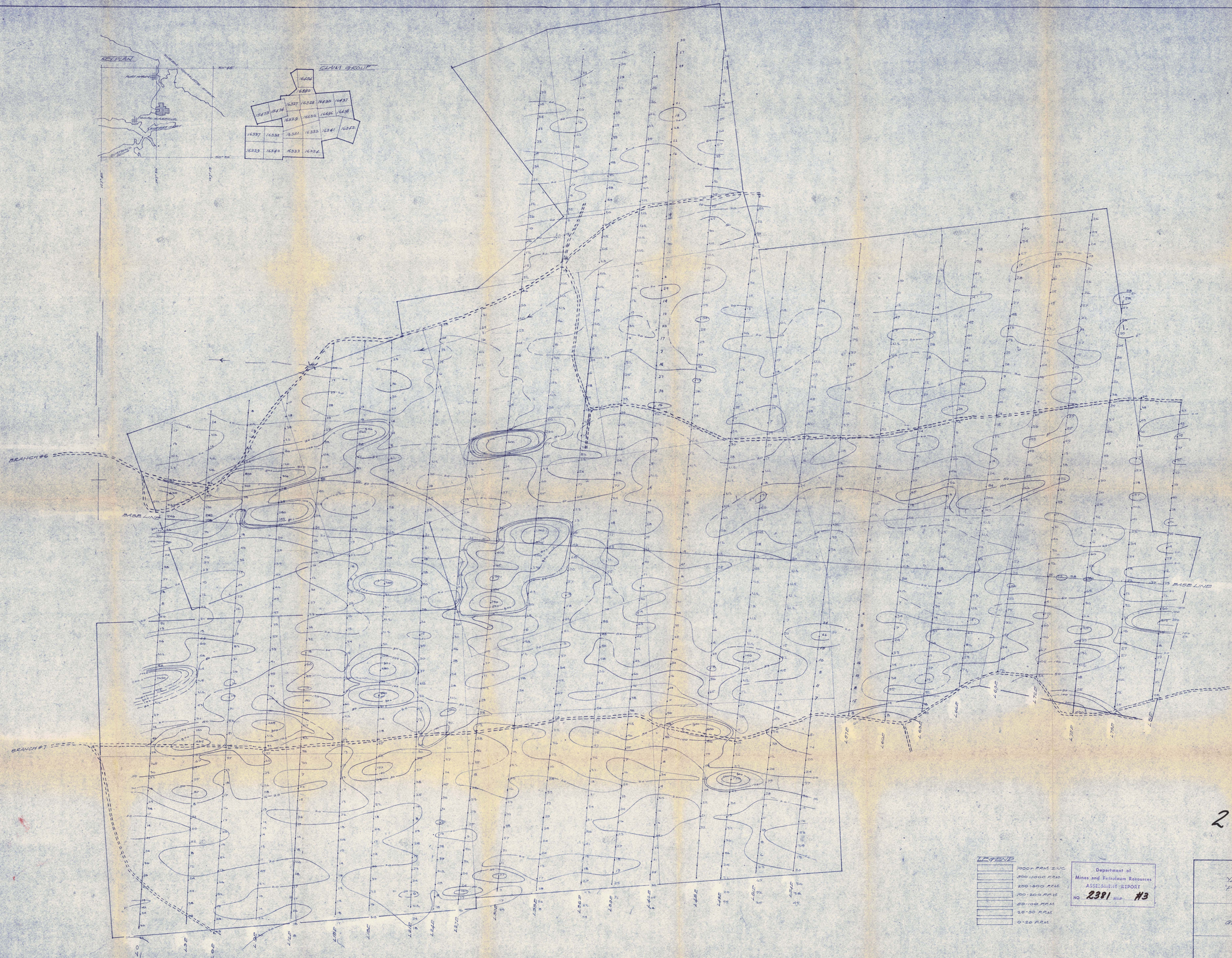
NOTE: SAMPLES CONTAINING MORE THAN
 5 P.P.M. ARE DESIGNATED AS (A)

To accompany Report on the Mill for Group
 at Hardy, BC, with
 by [Signature]
 [Stamp]



CLAIM GROUP

1654	1655	1656	1657	1658	1659
1660	1661	1662	1663	1664	1665
1666	1667	1668	1669	1670	1671
1672	1673	1674	1675	1676	1677
1678	1679	1680	1681	1682	1683
1684	1685	1686	1687	1688	1689
1690	1691	1692	1693	1694	1695



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LEGEND

[Symbol]	2000-3000 PPM ZINC
[Symbol]	1500-2000 PPM
[Symbol]	1000-1500 PPM
[Symbol]	500-1000 PPM
[Symbol]	200-500 PPM
[Symbol]	50-200 PPM
[Symbol]	10-50 PPM
[Symbol]	0-10 PPM

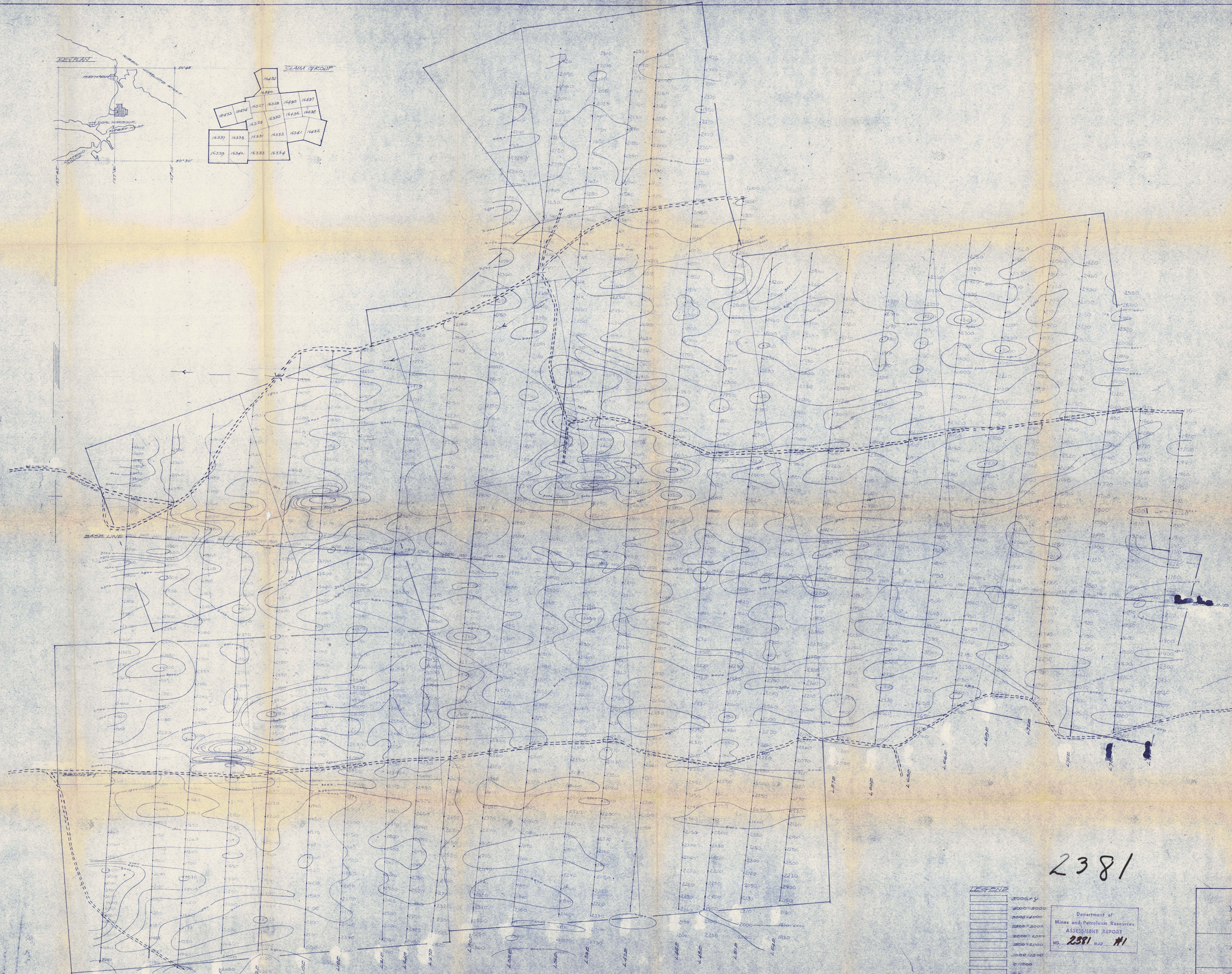
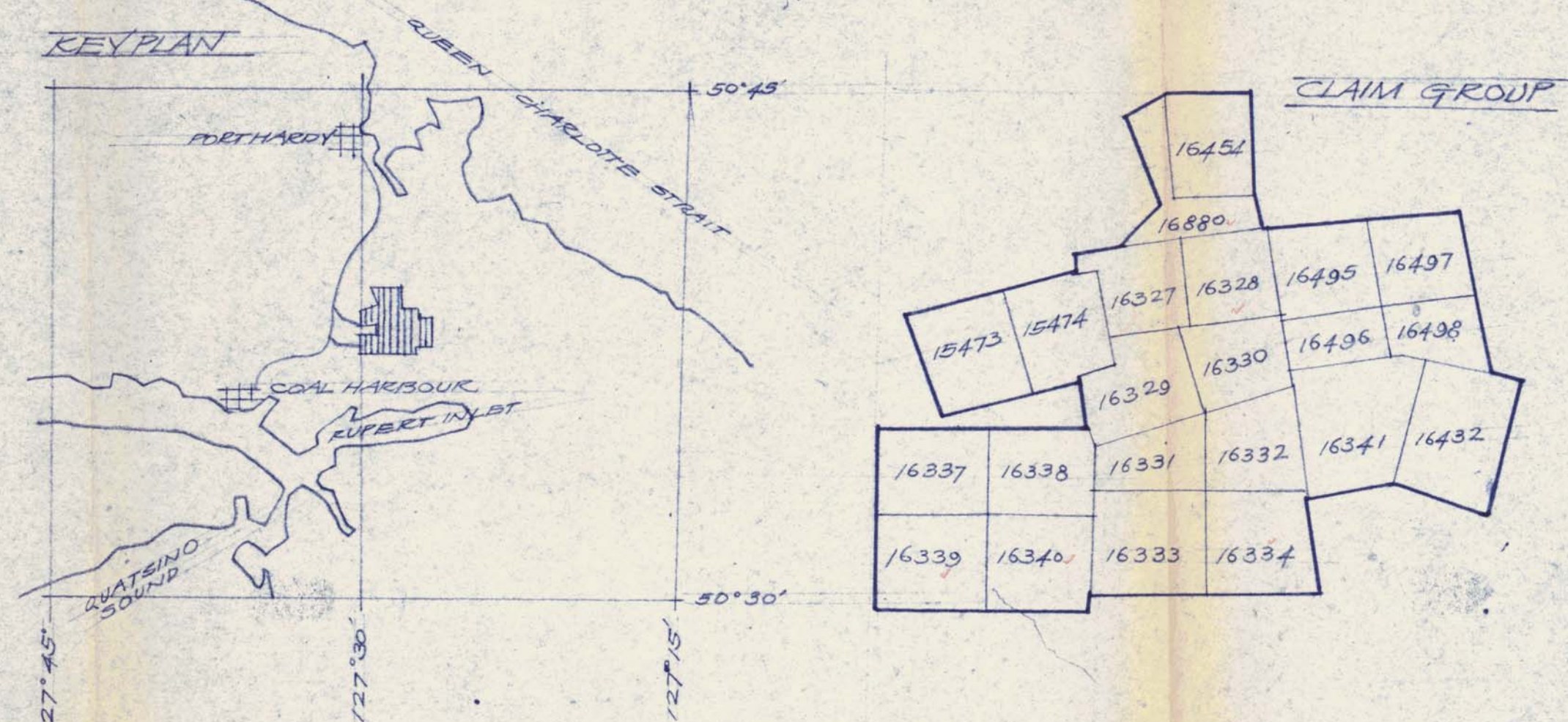
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2381 MAP #3

YELLOWKNIFE BEAR MINES LTD.
FOOT HARDY OPTION

GEOCHEMICAL SURVEY - ZINC

To view your report on the Internet
visit www.mpr.gov.on.ca
dated 30/07/03

sheet 7



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LEGEND

[Symbol]	3000 ± 5'
[Symbol]	4000 ± 5000'
[Symbol]	5000 ± 1000'
[Symbol]	6000 ± 1000'
[Symbol]	7000 ± 1000'
[Symbol]	8000 ± 1000'
[Symbol]	9000 ± 1000'
[Symbol]	10000 ± 1000'
[Symbol]	11000 ± 1000'
[Symbol]	12000 ± 1000'
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[Symbol]	25000 ± 1000'
[Symbol]	26000 ± 1000'
[Symbol]	27000 ± 1000'
[Symbol]	28000 ± 1000'
[Symbol]	29000 ± 1000'
[Symbol]	30000 ± 1000'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2381 SUB #1

YELLOWKNIFE BEAR MINES LTD.
FORT HARDY OPTION

MAGNETOMETER SURVEY

To accompany report with the Group
Fort Hardy B.C. dated 1967