

GEOLOGICAL REPORT ON  
THE HD (1 - 28) CLAIM GROUP  
BONNET PLUME RIVER, YUKON TERRITORY

for

2800

TACOMA RESOURCES LTD

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$2800.00

*[Signature]*  
Resident Geologist or  
~~Resident Mining Engineer~~

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

by

*[Signature]*  
Commissioner of Yukon Territory

EDWARD O. CHISHOLM, P.ENG.,

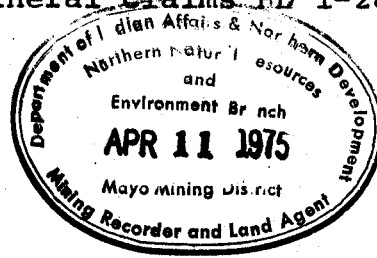
VANCOUVER, B.C.

January 23, 1975

DOMINION OF CANADA:  
PROVINCE OF BRITISH COLUMBIA.

In the Matter of mineral claims HD 1-28

To Wit:



I, **SANKAR RAMANI**

of the City of Vancouver, in the Province of British Columbia

in the Province of British Columbia, do solemnly declare that:

1. I am the President of Tacoma Resources Ltd. and as such have personal knowledge of the matters herein deposed to.
2. That the Company carried out exploration work on the HD 1-28 mineral claims situated in the Mayo Mining Division, Yukon Territory, in the amount of \$3,674.00.

3. The said \$3,674.00 was paid as follows:

Mr. Joe McPhee - \$1,594.00

Mr. Vern Paulger -\$1,500.00

Mr. E.O.Chisholm - \$500.00

Hampeter Werder  
drafting - \$55.00

Typing - \$35.00

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\$3,674.00

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4. That at present I am unable to locate Mr. Joe McPhee and Mr. Vern Paulger to obtain detailed statements.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the **City**  
of **Vancouver**, in the  
Province of British Columbia, this **4th**  
day of **April**, A.D.

A handwritten signature in black ink, appearing to read "Sankar Ramani".

A handwritten signature in black ink, appearing to be the signature of the Commissioner for taking Affidavits.

A Commissioner for taking Affidavits for British Columbia or  
XXXXXX

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SUMMARY

The 28 claim HD group of Tacoma Resources Ltd. is located 8 miles north-westerly of a new major zinc discovery in the Bonnet Plume area of the Yukon Territory, made in the summer of 1973 by Barrier Reef Resources Ltd. of Vancouver.

The property is largely covered with overburden. It is classified as an unexplored prospect underlain by sedimentary rocks favourable for the deposit of strata bond zinc, lead deposits. A program of exploration totalling expenditures of \$10,000 is recommended.

INTRODUCTION

This report is based on information gathered by the writer from available government and private reports on the discovery area and personal knowledge of the geological condition from work carried out in the area in previous years. It was prepared at the request of Tacoma Resources Ltd, the present holder of the claims. A brief examination of this property was conducted in the summer of 1974. Their location on the attached plan is approximately correct.

PROPERTY

The Tacoma Resources property comprises a rectangular block of 28 unpatented mining claims 2 miles long by 1½ miles wide. They were staked in August 1973 and recorded at Mayo, Yukon Territory on September 4, 1973. Due date is September 4, 1975.

<u>Name of Claims</u>	<u>Grant Numbers</u>	<u>Due Date</u>
HD (1 - 28)	Y85090 - Y85117	September 4, 1975

LOCATION AND ACCESS

The HD claims are located approximately <sup>110</sup>~~125~~ miles N.E. of Mayo, Y.T. on the Bonnet Plume River, approximate coordinates are as follows:

LAT.  $64^{\circ} 24' 28''$  North; LONG.  $132^{\circ} 45' 48''$  NTS sheet 106 C.

Access to the property from Mayo is by helicopter. Fixed-wing aircraft can land on a small lake or the south side of the Bonnet Plume River approximately five miles south of the property.

Barrier Reef Resources is constructing a winter airstrip in the Goz Creek Valley, about 8 miles east of the property. An all-weather strip suitable for DC-3 aircraft is being planned which will greatly improve operating cost in the area. A winter tote road is also planned to the area from Mayo.

The Mayo-Elsa, all-weather highway ends at Keno City, 80 miles south-west of the Bonnet Plume property. A winter caterpillar road, extends from the end of the Mayo Highway a distance of 40 miles to Kathleen Lake, 40 miles west of the property.

TOPOGRAPHY

The HD claim group straddles a branch of the Bonnet Plume River at elevations from 3,000 to 5,000 feet. The topography is rugged.

The water supply in the Bonnet Plume River is suitable for all purposes.

## HISTORY

The geology of the area was first mapped by Dr. J. O. Wheeler of the Geological Survey of Canada in 1952 (Preliminary Map 53 - 7), at a scale of four miles to the inch and covers the claims group. A more detailed map has recently been completed by S.L. Blusson for release this winter. As early as 1950 lead-zinc occurrences were discovered in dolomite-breccia, similar in many respects to the present finds, by the K.J. Springer interests. In recent years these were further explored by Gordon Dickson, prospector and founder of Rackla River Mines. Further exploration to the east along the belt of Palaeozoic sedimentary rocks, led to the discovery of the Hudson Bay Mining and Smelting stratiform, lead-zinc deposit known as the TOM Property located at McMillan Pass on the Canol Road 160 miles to the south east. Other large stratiform lead-zinc deposits were found by Prospector Airways Co. Ltd. under my direction at Vangorda Creek in the 1950's; and later by Kerr Addison in the 1960's at Swim Lake nearby. The most significant of these was discovered by A. Kulan. It became the ANVIL MINE of Cyprus Mining Corp. and Dynasty Exploration Ltd. and is currently in production at a rate of 7,500 tons per day from a 60 million ton ore body of 10 percent combined Pb-Zn. The Vangorda Swim and Anvil deposits are stratiform lenses in Middle-Upper Cambrian phyllite host rocks. Also discovered during this period was the FORTIN LAKE deposit of Dynasty. It is a 3 mile long zone of zinc mineralization in Silurian dolomitic argillites. Preliminary drilling was done under my direction and later my Mitsui Mining and Smelting Corporation. During the period 1965 to 1972 low metal prices discouraged exploration in this remote area. Then a major find aroused new interest in the belt when CANEX PLACER LTD. discovered a 25 mile long belt of lead-zinc mineralization in tightly folded graphitic argillites Ordovician age. A large staking rush developed in the area and intensive drilling was carried out in 1973, with indications of a possible producer.

Also in 1972 important base metal discoveries were made by Welcome North Mines Ltd. in the Godlin Lakes area in the Northwest Territories, 100 miles to the north of Summit Lake. Numerous major companies conducted work in 1973, such as COMINCO, Bethlehem Copper, Conwest and Dynasty. Dr. Clyde L. Smith, a prominent Yukon geologist, who was associated with the development of several of the Yukon deposits reports that the recognition of the GODLIN deposits as excellent examples of the world renowned, MISSISSIPPI VALLEY type deposits, has spurred activity over a 300 mile length, within a belt of open-folded and faulted Lower Palaeozoic carbonate rocks known as the MACKENZIE fold-belt. This laterly resulted in the significant finds in the Bonnet Plume region by Barrier Reef Mines Ltd.

It is believed that the Yukon and adjacent Northwest Territories is entering a period of new and highly active base metal exploration.

The significant find of Barrier Reef, near the confluence of GOZ and DUO Creek, lies 8 miles to the east of the Cardigan property. The news of this discovery precipitated a staking rush that resulted in the location of over 2,000 contiguous claims in a belt 35 miles long and up to five miles wide. Another significant find has been made by CYPRESS RESOURCES LTD. 10 miles to the west of Barrier Reef. This lies 3 miles southwest of the Tacoma Resources Ltd. claims group. Some 12 occurrences of zinc-lead mineralization have been reported in the area to date at widely separated areas within the Bonnet Plume staking belt.

## GENERAL GEOLOGY

The area of the recent staking along the Bonnet Plume River is underlain by closely folded rocks of probable Cambrian or earlier age. Recent mapping places them as Proterozoic in age. The most widespread and believed to be the oldest formation, is composed of reddish-brown weathering dolomite and sandy dolomite, with minor amounts of grey limestone, dark grey slate, and quartzite. The sandy, cherty or argillaceous facies stand out in relief over the dolomite facies, to produce a very rough surface. The rock is composed mostly of fine-grained, dolomite. The dolomite does not react to hydrochloric acid. Some bands contain considerable proportions of clay minerals and local chert nodules. There are numerous quartz veinlets 2 to 3 inches wide.

Most rocks show irregular banding. They have a rough, sandy texture. Concretions are common.

A distinctive feature is the presence of concentric, banded, circular forms 4 to 6 inches across and up to 14 inches. Some are columnar. These are believed to be algal structures, and they appear in great numbers suggesting colonies that form bioherms.

These structures are believed to be important from the standpoint of mineral deposition and sphalerite often replaces them locally.

Within the dolomitic formation are a few beds of grey limestone, bluish grey, platy, pyritic slates, and quartzites. A banded pale-green, chloritic, limestone overlies the algal bearing dolomites in places and elsewhere a grey weathering pale grey limestone occurs. Also dark grey and black slates, associated with varying amounts of grey and white quartzite, overlie the dolomite conformably at many localities.

The thickness of this sequence of dolomites, grey limestone and slates is not known. Smith (15) states the principal lead-zinc deposits of the larger sedimentary belt known as the Selwyn Basin and Mackenzie Fold Belt fall within two distinct classes: stratiform types of marine-volcanic association (ANVIL, TOM, HOWARD PASS, FORTIN); and MISSISSIPPI VALLEY TYPE (BARRIER REEF, GODLIN, NAHANNI).

Preliminary mapping of the Barrier Reef Property Bonnet Plume area, has outlined a breccia zone of high grade Zn-Pb averaging about 20% combined metal having a strike length of greater than 1,800 feet and a width of 30-40 feet. More detailed sampling, and diamond drilling is required to assign tonnage and grade to the deposit. Extensive outcrops, containing zinc sulphides in bedded carbonate rocks, have been found elsewhere on the claims by preliminary prospecting. These outcrops represent a mineralized "belt" about  $5\frac{1}{2}$  miles in length according to company reports.

#### MINERALIZATION

Mineralization on the Barrier Reef and other properties in the area generally is comprised of light buff-colored, to reddish-brown, sphalerite in porous dolostone, with aggregates and irregular patches of galena and minor quantities of possibly Jamesonite mineralization, are reported in higher grade zones.

Most of the high-grade mineralization is associated with breccia zones, but some occurs parallel to bedding planes with very little associated quartz.

Surface outcrops in mineralized areas, contain considerable secondary zinc carbonate (Smithsonite). This is readily detected by modern geochemical sprays which aids considerably in the identification of zinc bearing zones.

#### LOCAL GEOLOGY OF TACOMA RESOURCES LTD.

No detailed mapping has been done on the property since it was staked G.S.C. MAP 53-67 shows it is favourably located along the contact of zinc bearing dolostones of Proterozoic age on the west side of the property. The property is partly covered by overburden of a creek valley. The dolostones are generally flat lying.

Glacial ice-movement is from east to west, along the Bonnet Plume River Valley and any glacial debris would originate from the east.

The nearest reported occurrence is zinc mineralization lies about 3 miles to the S.W. on the Cypress Resources property. Another occurrence is reported approximately 3 miles to the south.

#### GEOCHEMICAL SURVEY

About fourteen line miles of flagging, geochemical survey for zinc and magnetometer survey were carried out and the results are plotted on the accompanying map. Geochemical samples were obtained by means of a Stainless Steel Augur from a depth of 18" below the humus layer in order to consistently sample the "B" horizon. The samples thus obtained were placed

in a Manila bag, air dried and catalogued. The samples were then analyzed by means of atomic absorption unit and the results are expressed as parts per million zinc. The values are plotted on the accompanying map and contoured.

The background values appear to be in the order of 200 ppm zinc. The values are contoured at an interval of 200 ppm. The northern part of the survey area appears to express anomalous zones of interest especially around L36 to L52 east of the base line. In this area values up to 1140 ppm zinc were recorded. Further detailed exploration is recommended around this general area.

#### MAGNETOMETER SURVEY

A magnetometer survey, using Fluxgate MF1 instrument was conducted on the property along the grid line. A negative gamma reading ranging from -1200 to -1800 was recorded during this survey.

The gamma values are rather uniform throughout the property and did not indicate any prominent anomalous zones. The gamma readings are plotted on the accompanying map and due to lack of major variations contouring has not been done.

#### CONCLUSIONS

The HD (1 - 28) claims group of Tacoma Resources Ltd. lies along a belt of significant, strata-bound, lead zinc deposits, that have recently been discovered in the Bonnet Plume River area. Insufficient exploration has been carried

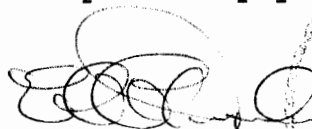
out yet to determine the economic potential of the area but results so far obtained in surface prospecting and sampling on the Barrier Reef property to the east eight miles, and the Cypress Resources property to the west 3 miles, are encouraging. The presence of extensive low-grade, zinc mineralization over strike lengths of thousand of feet with high-grade sections above 20% zinc, is an attractive feature in the area.

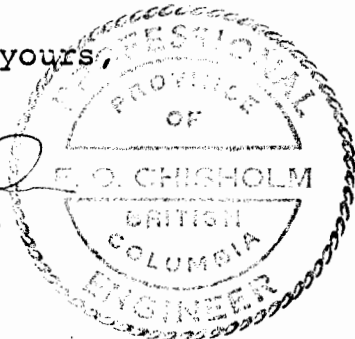
RECOMMENDATIONS AND ESTIMATED COST

Detailed surface mapping, prospecting and geochemical survey followed by trenching are recommended in a program, as follows:

1.	Geological Survey	\$ 1,500.00
2.	Prospecting and sampling one month	1,500.00
3.	Camp accommodations	500.00
4.	Cook and Groceries	750.00
5.	Transportation	
	Scheduled aircraft	500.00
	Fixed wing	1,500.00
	Helicopter - 10 hrs \$200/per hour	2,000.00
6.	Supervision	1,500.00
7.	Contingencies and overhead @20%	5,000.00
	TOTAL	\$ 9,750.00
	SAY	<u>\$10,000.00</u>

Respectively yours,

  
E.O. Chisholm



APPENDIX NO. 1

1. J.O. Wheeler - GSC Paper 53-7  
A Geological Reconnaissance of the Northern  
Selwyn Mountains.
2. GSC Report of Activities 1969-1970.
3. Mineral Industry Report 1969-1970 Vol. 1
4. S.L. Blusson GSC Paper 71-22  
Sekwi Mountain Map Area, Yukon Territory and  
District of McKenzie.
5. 1972 Composite Geological Map of the Yukon Territory.
6. Statement of Material Facts. Barrier Reef  
Resources Ltd. July 24, 1973.
7. Barrier Reef Resources Ltd. (N.P.L.) Report to  
Shareholders Nov. 23, 1973.
8. E.O. Chisholm P.Eng. Private Report Rackla River Mines  
Ltd., Yukon Territory dated March 30, 1968.
9. P.W. Sevensma P.Eng. Report Rackla River Mines Ltd.  
dated Sept. 13, 1969.
10. R.E. Chaplin P.Eng. Report on Barrier Reef Mines Ltd.  
Bonnet Plume lead-zinc property dated Aug. 15, 1973.
11. R.E. Chaplin P.Eng. Report of HELI Claims Godlin  
Lakes Area N.W.T. dated March 15, 1973.
12. John S. Brock V.P. Welcome North Mines Ltd.,  
Exploration Progress Report dated Aug. 29, 1973.
13. R.E. Chaplin P.Eng. Report on PAL (1-51)  
Mineral claims, Bonnet Plume-Goz Creek Area,  
Yukon Territory dated Aug. 15, 1973.
14. R.E. Chaplin P.Eng. Report on Ann 1-64 Mineral Claims  
Bonnet Plume - Goz Creek Area dated Aug. 15, 1973.
15. G.C. Gutrath P.Eng. Report on CYPRESS Resources property  
Bonnet Plume zinc-lead property dated Sept. 1973.
16. Clyde L. Smith Ph.D P.Eng. Report on Ogilvie Joint  
Venture dated Dec. 1973.
17. A Harman, Harman Management Ltd. Personal Communications.

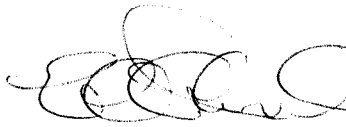
CERTIFICATE

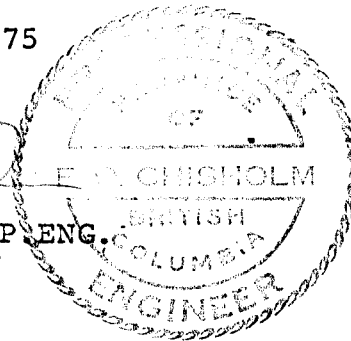
I, Edward O. Chisholm of the City of Vancouver in the Province of British Columbia, hereby certify that:

1. I am a geologist with offices at 821-602 West Hastings Street, Vancouver, B.C.
2. I am a graduate of the University of Toronto, Ontario, Master of Arts, 1945.
3. I am a member of the Professional Engineers of Ontario and British Columbia.
4. I have no direct or indirect interest in either the property or securities of TACOMA RESOURCES, LTD, Ltd. or its affiliates, nor do I expect to receive any such interest.

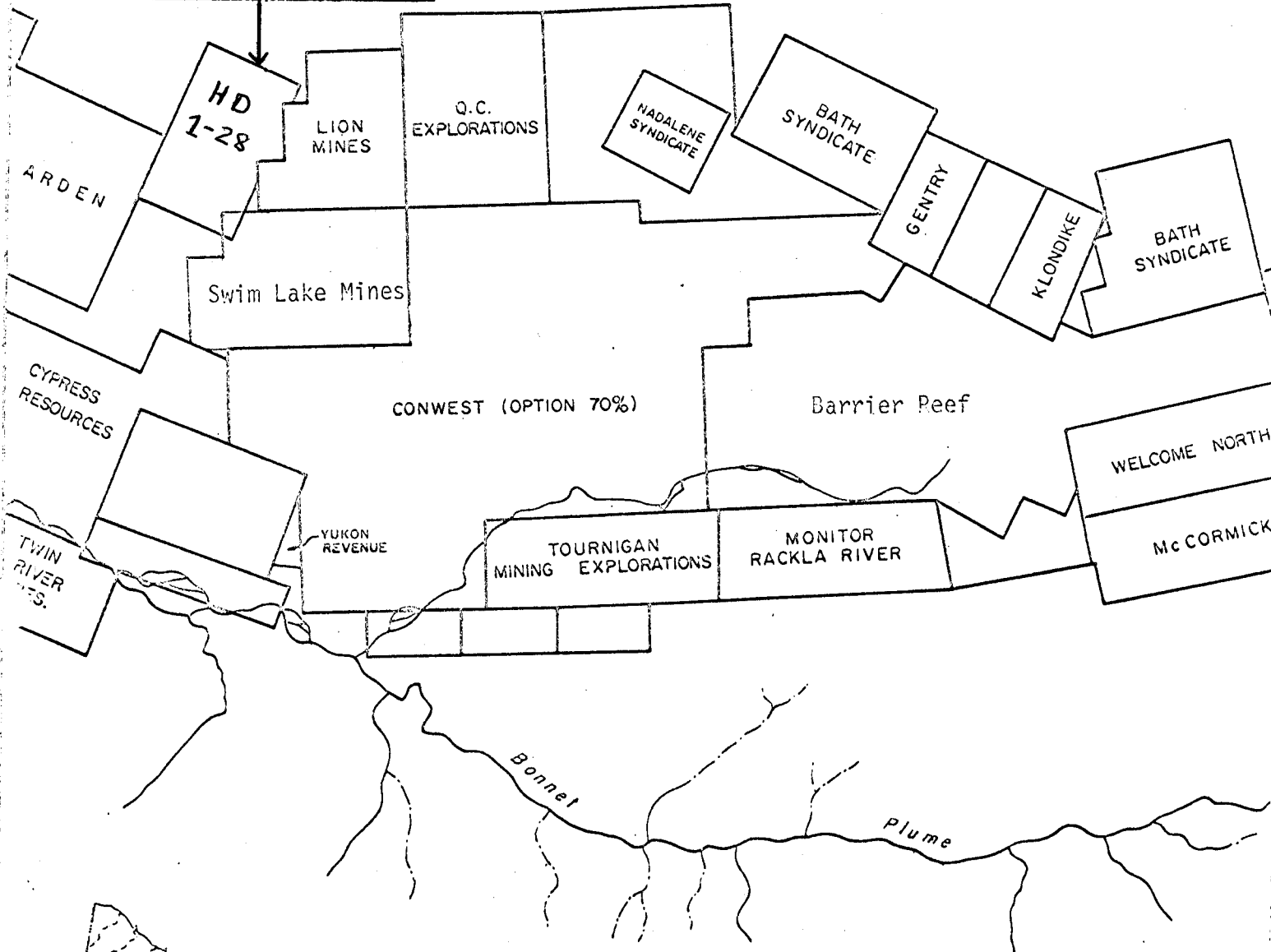
DATED AT VANCOUVER, BRITISH COLUMBIA

January 23, 1975

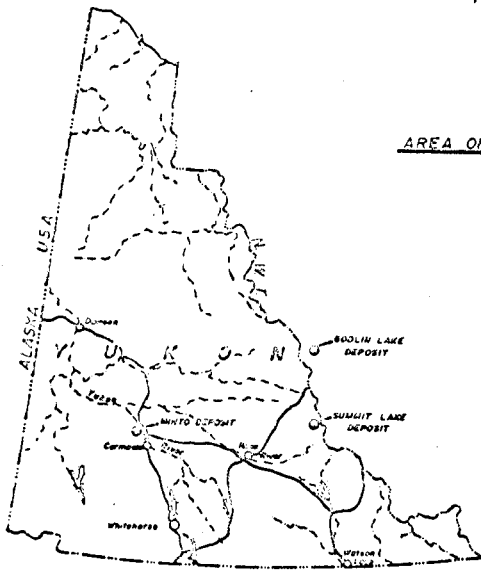
  
EDWARD O. CHISHOLM, P. ENG.



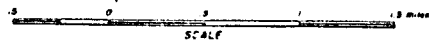
TACOMA RESOURCES LTD.



AREA OF INTEREST



**CLAIM MAP**  
**BONNET PLUME RIVER AREA**  
**YUKON TERRITORY**

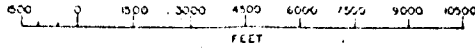


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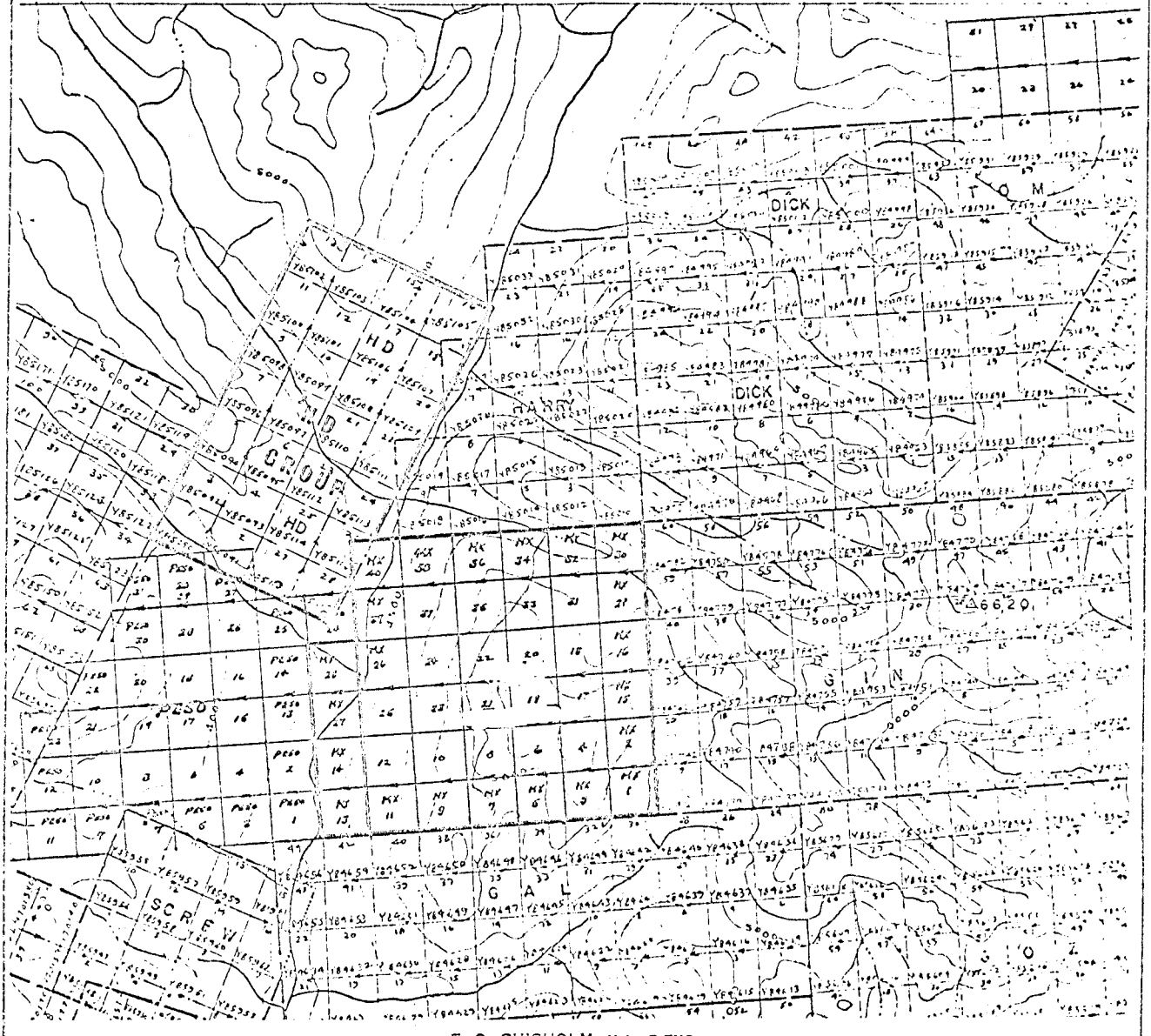
LATITUDE 64°15' To 64°30'  
LONGITUDE 132°30' To 133°00'

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

SCALE 1 MILE TO 1 INCH



ISSUED BY AUTHORITY OF THE MINISTER



E. O. CHISHOLM, M.A., P. ENG.  
CONSULTING GEOLOGIST

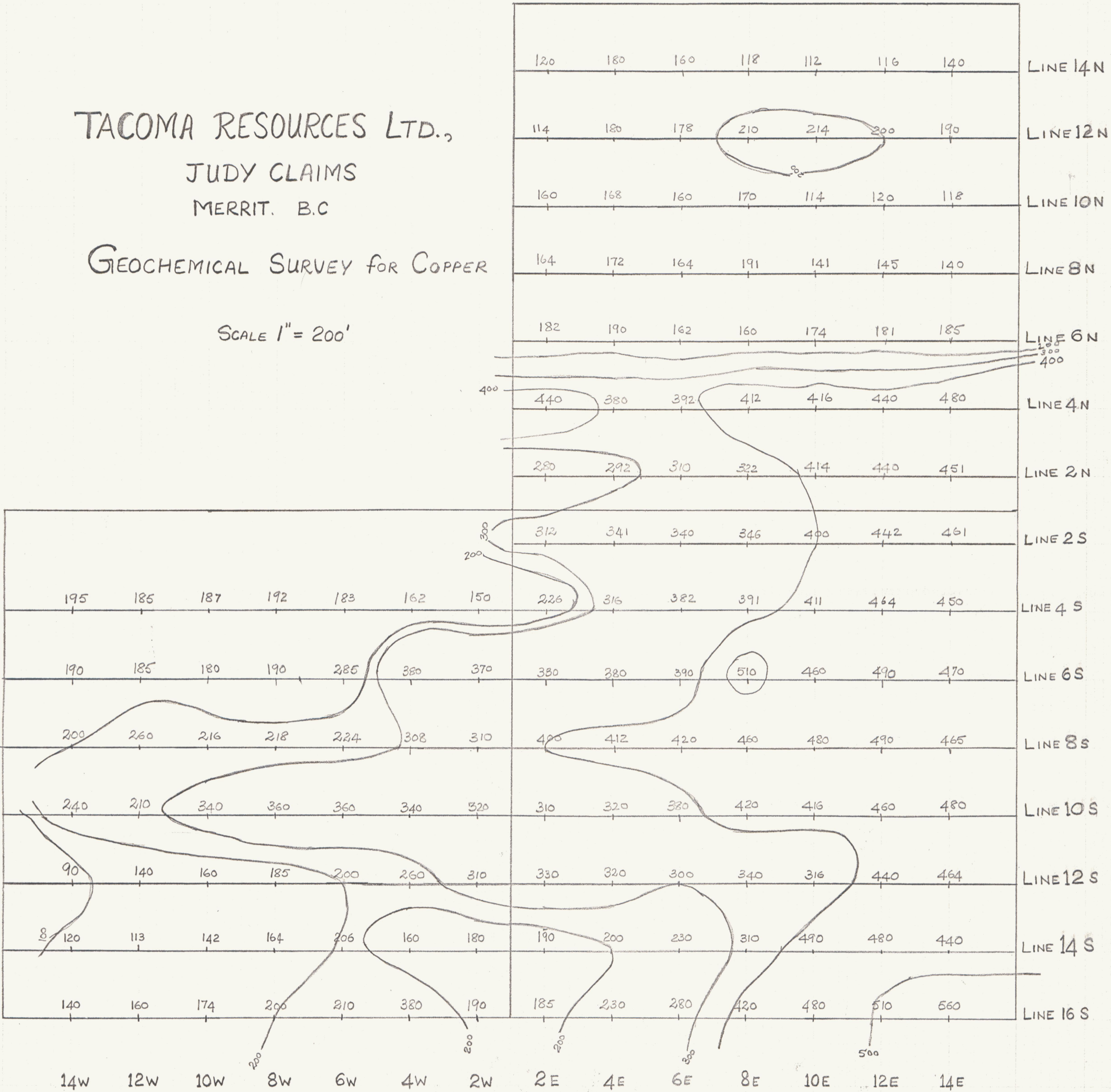
TACOMA RESOURCES LTD.,

JUDY CLAIMS

MERRIT. B.C

GEOCHEMICAL SURVEY FOR COPPER

SCALE 1" = 200'

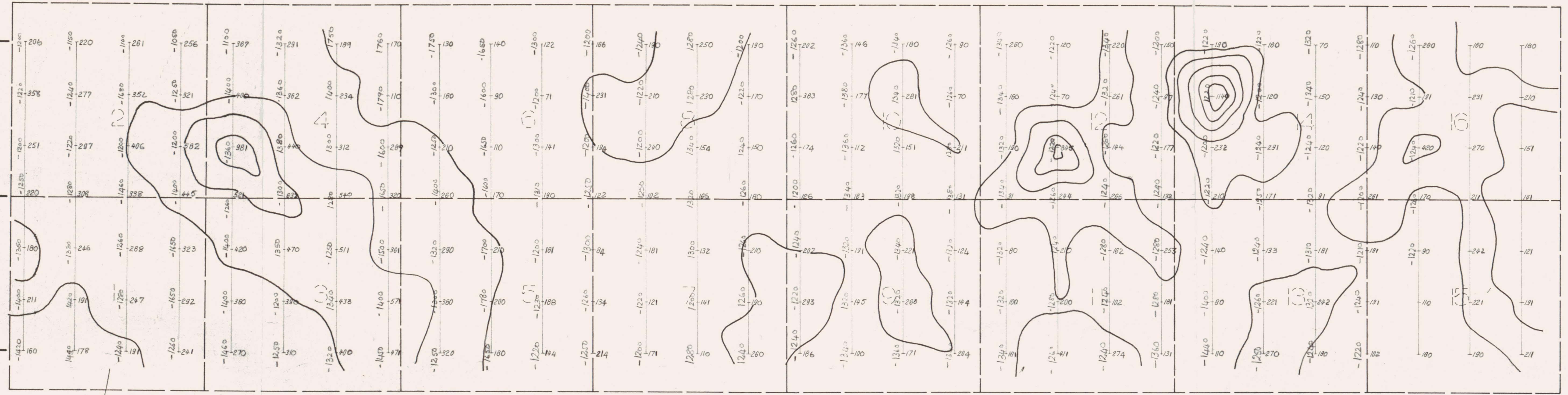


L44 W L40 L36 L32 L28 L24 L20 L16 L12 L 8 L 4 W L00 L 4 E L 8 L12 L16 L20 L24 L28 L32 L36 L40 L44 L48 L52 L56 L60 L64 L68 L72 E

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BASELINE

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HD CLAIM GROUP

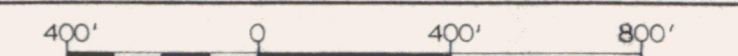


VALUES IN PARTS PER MILLION ZINC.

HD CLAIM GROUP  
GOZ CREEK AREA, MAYO, YUKON TERR.

TACOMA RESOURCES LTD.

MAG AND  
GEOCHEM SURVEY



DRAWN: DATE: PLATE: