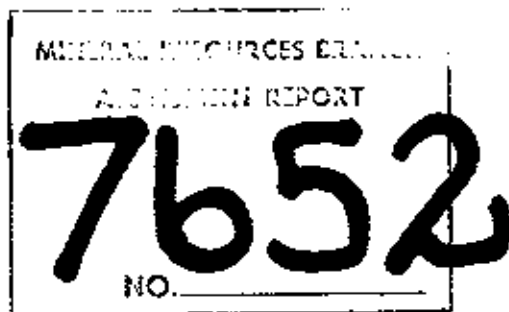


GEOLOGICAL REPORT
ON THE
BIG JOE CLAIM (10 UNITS);
NANAIMO MINING DIVISION, B.C.
FOR
CYCLONE DEVELOPMENTS LTD.



Vancouver, B.C.
August 9, 1979

R.H.D. Philp, P. Eng.

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INTRODUCTION:

The Big Joe Claim consists of 10 units situated along the south side of Nahwitti Lake, approximately 26 kilometers west of Port Hardy on Northern Vancouver Island, British Columbia.

Staked to cover known zinc-lead-copper-silver mineralization the claim is underlain by volcanic and sedimentary units of the Vancouver Group intruded by granodiorite and diorite.

An exploration program of gridding followed by geological mapping under the direction of the writer was initiated in June, 1979 to locate any known mineral occurrences and provide guidelines and control for future exploration.

GENERAL:

The property lies south of Nahwitti Lake, straddling and mainly south of the Port Hardy-Holberg Road. Co-

ordinates are 50° 42' North latitude, 127° 51' West longitude.

Access is by the Port Hardy-Holberg Road and several logging roads which traverse the property.

Relief is moderate with elevations ranging from approximately 660 at the lake to 1900 feet above sea level.

Approximately two-thirds of the area has been logged, the remainder covered mainly by cedar, fir, balsam and hemlock. Dense second growth and debris covers much of the logged area, seriously hampering exploration.

Considerable exploration has been conducted on base-precious metal prospects in the Nahwitti Lake area since discovery of the HPH lead-zinc-silver deposits in 1930. The most recent systematic exploration of the mineralized belt was conducted by Giant Explorations Ltd. during the period 1966 - 1973.

PROPERTY:

The property consists of the following recorded mineral claim located in the Nanaimo Mining Division of British Columbia:

Big Joe, tag number 34011 - 10 units

The claim was located on July 7, 1978 and recorded on July 10, 1978.

WORK COMPLETED:

An east-west base-line was established along the Port Hardy-Holberg road and north-south cross-lines run

at 100 meter intervals, with stations marked every 40 meters. An east-west tie line was run at the south limit of the cross-lines. Lines were established by chain and compass and marked with colored flagging.

A total of 4,000 meters of base and tie lines and 16,000 meters of cross-lines were established in this manner.

Geological mapping was carried out over most of the property at a scale of 1:2,500, traverses being run along lines, roads, etc. and outcrop between lines tied into stations by pace and compass.

GEOLOGY:

GENERAL:

Regional mapping by the B.C. Department of Mines - "Preliminary Geological Map, Rupert Inlet-Cape Scott Area, by K.E. Northcote, scale 1 inch = 2 miles; Geology, Exploration and Mining in British Columbia, 1970, pages 254-258" - indicates that the property is underlain by volcanic and sedimentary units of the Vancouver Group of Triassic-Jurassic Age intruded by granitic rocks in the south. The main structural feature is block faulting.

The stratigraphic section after Northcote is as follows:

Jurassic and/or Cretaceous - Intrusive Rocks

Varied composition from diorite to granite and includes porphyritic phases.

Lower Cretaceous Sedimentary Rocks

Conglomerate, sandstone, siltstone, shale, carbonaceous horizons.

Upper Triassic-Jurassic - Vancouver Group

Bonanza Subgroup

Upper volcanic unit, largely pyroclastic tuff, lapilli tuff and tuff breccia of andesite and basalt composition with some basalt and rhyodacite flows at the top of the unit. Lower sedimentary unit, thin bedded argillaceous and carbonaceous limestone, calcareous shale and siltstone and greywacke.

Quatsino Formation

Limestone, medium to thick bedded.

Karmutsen Formation

Basaltic amygdaloidal and massive flows, interbedded tuff, some pillow breccia and poorly developed pillows thin limestone beds near top of formation.

Numerous contact metamorphic and replacement deposits are found in and along the contacts of the Quatsino Limestone and limestone units within the Karmutsen Formation in association with granitic intrusives throughout the Nahwitti Lake region. Deposits contain variable lead-zinc-copper-iron and precious metal values.

LOCAL GEOLOGY:

Within the claim area, andesites and tuffaceous andesites occur along the Port Hardy-Holberg road immediately south of Nahwitti Lake. Northerly and northeasterly shearing is common accompanied by extensive chlorite, and in places, epidote alteration.

Fine to medium grained diorite outcrops between lines 9E and 10E and to the southwest along the creek between lines 8E and 9E, and in small dike-like bodies along the logging road to the south. Pyrite is common throughout the diorite.

Andesite and cherty sediments outcrop along the logging road in the southcentral portion of the claim. The chert strikes west to west-northwest, dipping moderately to the south. Pyrrhotite and pyrite are abundant in both the sediments and volcanics, the latter silicified in part.

Medium to coarse grained, pink granodiorite outcrops in many areas in the central and western portions of the property. In most places this intrusive is very strongly sheared and altered.

Limestone outcrops for about 200 meters along the creek between lines 8E and 9E. A garnet-epidote skarn zone 30 meters wide is formed along the contact of the limestone with the underlying granodiorite near 8S.

Scattered limestone outcrops to the west of this in the vicinity of 5E-6E and is believed to continue through the creek near 3E, although this section was not mapped.

Garnet-epidote skarn occurs along the creek between 8E and 9E at approximately 8S, along the logging road between 8E and 9E at approximately 12S and in the creek between 2E and 3E. Pyrite is common in the skarn zones together with variable chalcopyrite and sphalerite.

Where bedding attitudes were observed in the sedimentary units, these generally strike west to northwesterly with gentle to moderate dips to the south. Most frequent shearing-jointing directions are east-west, dipping steeply north; northeast and northwest, dipping moderately to steeply north.

Zinc, copper and to a lesser extent lead-silver mineralization occurs at several points on the property. These were not mapped at this time as they require detailed mapping following establishment of a more detailed grid.

The first is exposed in the westernmost creek on the property from approximately 9S to 11S. Magnetite, pyrite, sphalerite and chalcopyrite occur in skarn near a limestone-intrusive contact. Extent of the zone has not been fully outlined.

The second occurrence is exposed south of the main logging road in the vicinity of the creek 550 meters east of the first. Sphalerite and chalcopyrite mineralization together with pyrite are present in a skarn zone which is exposed for about 400 feet. Mineralization occurs in patches and discontinuous lenses.

The third occurrence is exposed in the creek between 13E and 14E in the central part of the claim. Zinc-lead and minor copper mineralization occur at several points in skarn within the limestone and near the limestone - Bonanza Group contact.

Drilling has been carried out in all 3 areas but complete results are not available.

CONCLUSIONS AND RECOMMENDATIONS:

A number of base-precious metal prospects occur within the limits of the Big Joe Claim as well as in the surrounding region.

On the property, these occur within the Quatsino Limestone and near the limestone - Bonanza Group contact. This favorable horizon crosses the property in a westerly direction and should be explored in detail.

Additional work should take the form of detailed soil geochemical and geological surveys in the vicinity of the known mineral occurrences and along the favorable belt between them, followed by trenching and/or drilling as warranted.

Respectfully submitted,



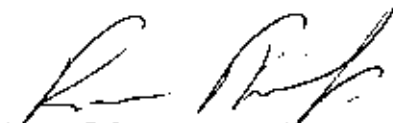
R.H.D. Philp,
P. Eng.

August 9, 1979
Vancouver, B.C.

CERTIFICATE

I, RONALD H.D. PHILP, of Waspam, Rio Coco, Depto de Zelaya, Nicaragua, do hereby certify that:

1. I am a graduate of the University of British Columbia (B.A. Sc. 1961).
2. Since graduation I have been engaged in mining exploration in North America, Central America, Australia and Fiji.
3. I am a registered member in good standing of the Association of Professional Engineers of British Columbia.
4. I supervised the work described in this report during June and July, 1979.


Ronald H.D. Philp,
P. Eng.

Vancouver, B.C.
August 9, 1979

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA:
To Wit:

In the Matter of the gridding and geological survey on the Big Joe Claim, Nanaimo M.D.

I, Ron Philp

of c/o 107 - 325 Howe St., Vancouver, B.C.

in the Province of British Columbia, do solemnly declare that the following persons were employed and costs incurred in conducting the work during the period June 5 - July 22, 1979. At least \$2,000.00 of this work was completed prior to July 10, 1979, and in excess of \$1,000.00 was spent since July 10, 1979.

Personnel:

Matt McGarry - Party chief	- 12 days @ \$81.25	= \$975.00
Paul Bustin - Helper	- 7 days @ \$65.00	= 455.00
Don Moore - Helper	- 8½ days @ \$54.10	= 459.85
Jeff Dobi - Helper	- 6½ days @ \$47.27	= 307.26
R. Philp - Geologist	- field - 3½ days @ \$200.00	= 700.00
	- office- 3 days @ \$200.00	= 600.00
		<u>3,597.11</u>

Disbursements:

Groceries, supplies	649.16	
Transportation - car, ferries, gas	292.66	
Prints	26.28	
Airfares	121.36	
Camper	116.67	
Camp rental	58.37	
Truck @ \$25/day	<u>400.00</u>	
		1,664.50
Plus 15% overhead on disbursements		<u>249.60</u>
		<u>\$5,511.21</u>

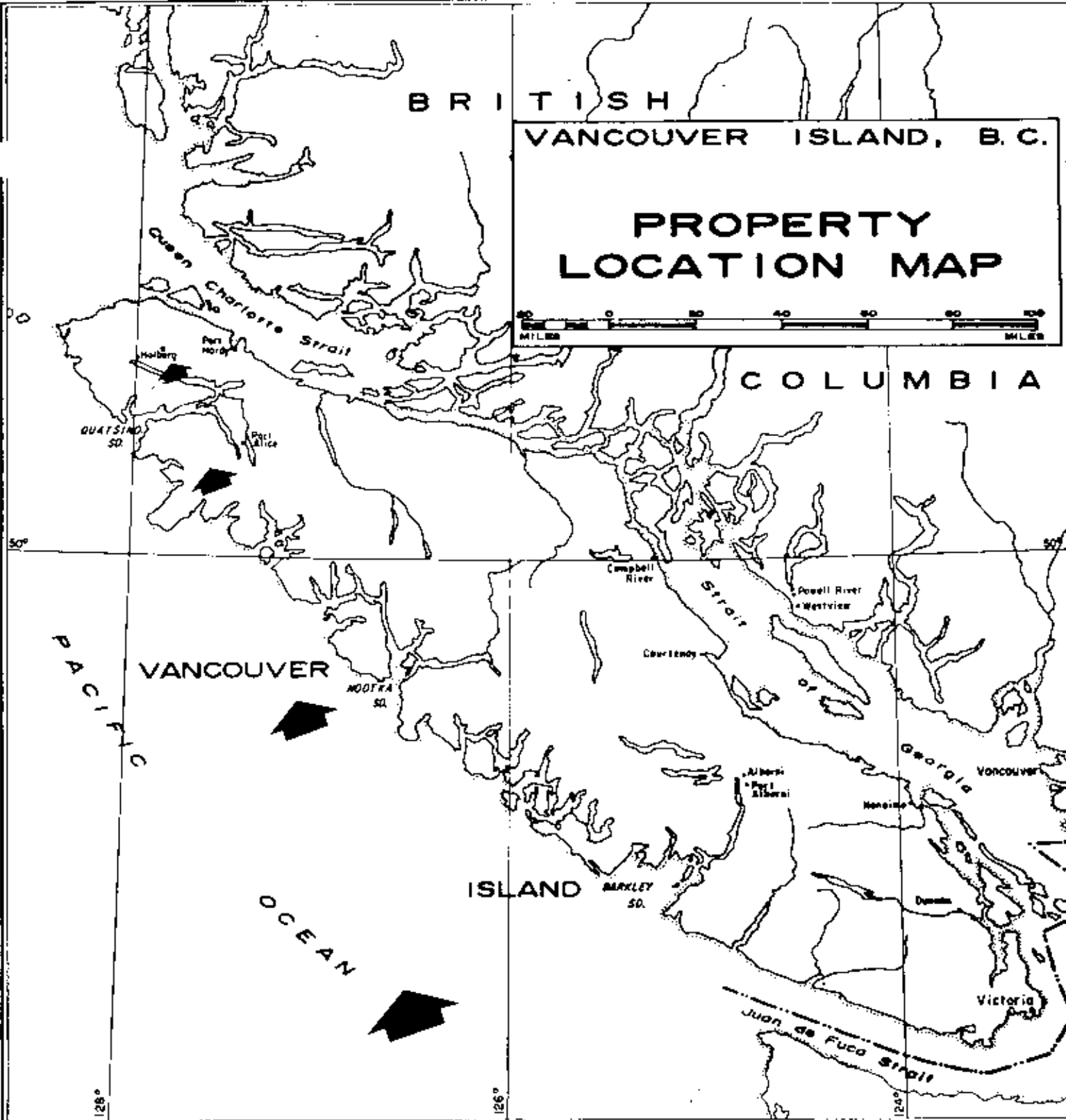
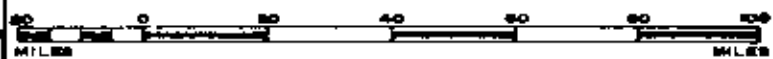
And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the
of _____, in the
Province of British Columbia, this
day of _____, A.D.

BRITISH

VANCOUVER ISLAND, B.C.

PROPERTY LOCATION MAP

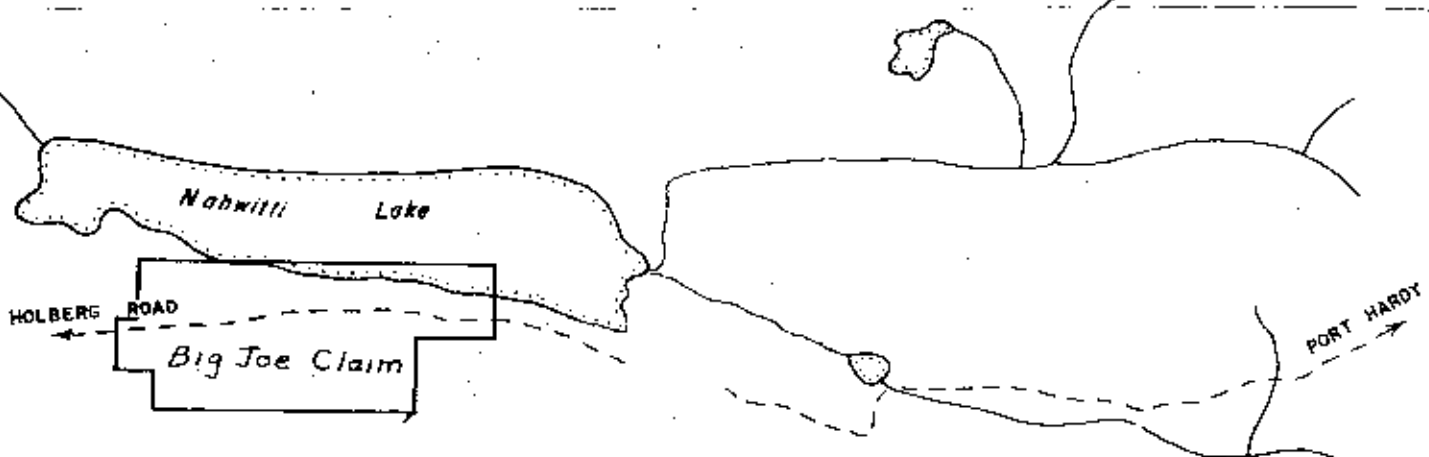


VANCOUVER

ISLAND

PACIFIC OCEAN

OCEAN

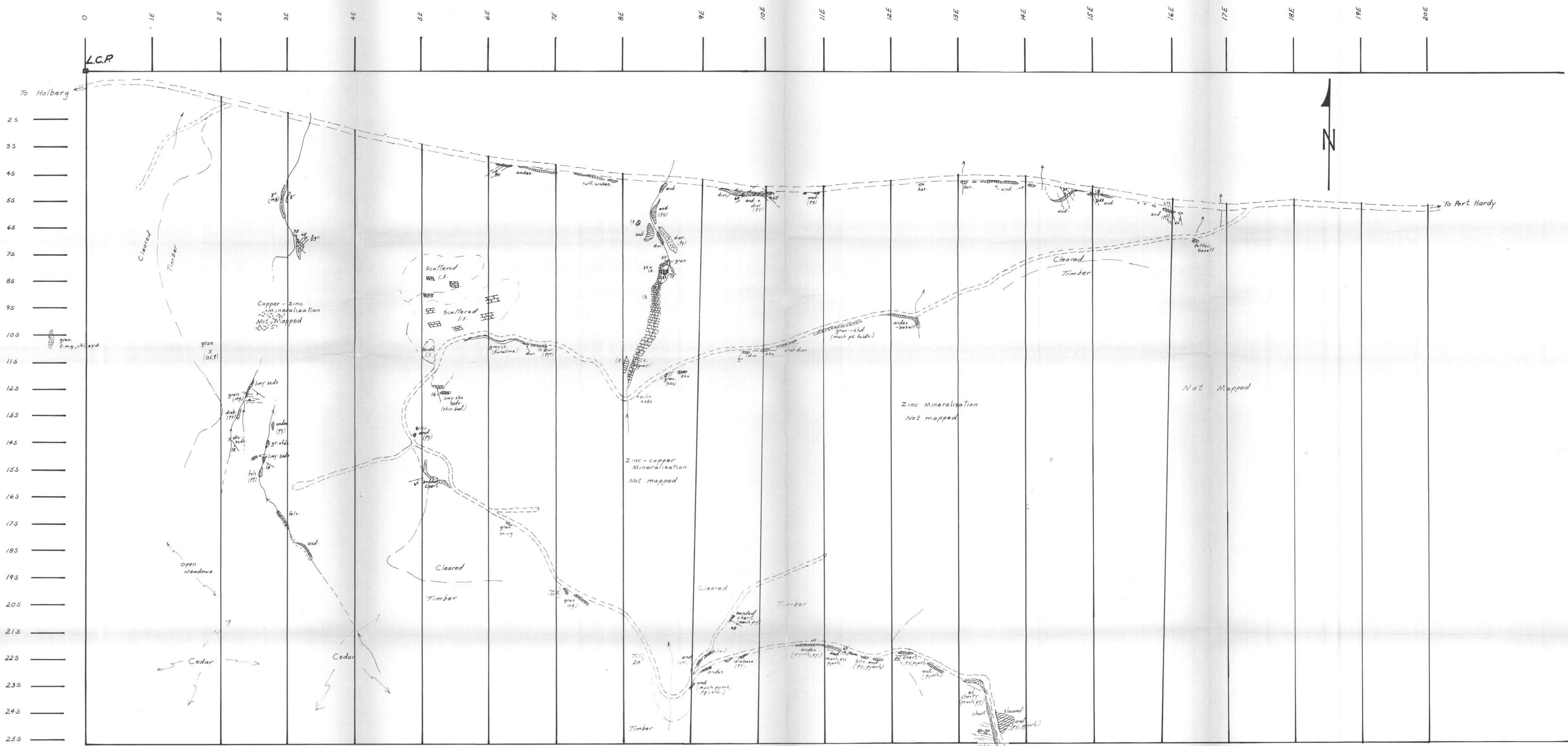


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CYCLONE DEVELOPMENTS
LOCATION SKETCH
BIG JOE MINERAL CLAIM
NAHWITTI LAKE AREA, VANCOUVER ISLAND
NANAIMO M.D.

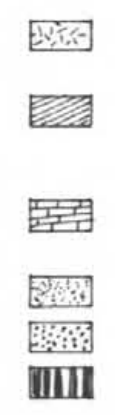


AUGUST 1979



LEGEND

- Intrusive - granodiorite, diorite (gran., dior)
- Volcanic - andesite, tuffaceous andesite, basalt (and., bas.)
- Limestone - grey, crystalline (l.s.)
- Felsite, Rhyolite - (fels., rhyol.)
- Chert
- Skarn - skn.
- Fine, medium, coarse grained - f, m, c.g
- Pyrite, pyrrhotite - py, pyrth.
- Bedding, contacts
- Foliation
- Jointing
- Roads



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
7652
NO.

Agilis Exploration Services
CYCLONE DEVELOPMENTS

SURFACE PLAN + GEOLOGY
BIG JOE CLAIM

Scale: 1:2500 August, 1979