

GEOLOGY AND GEOCHEMISTRY

of

C.D., EMMONS, and TRAIL Mineral Claims

Skeena Mining Division  
NTS 103 F/9W

Latitude 53°31'N      Longitude 132°25'W

OWNER:                      Gordon G. Richards

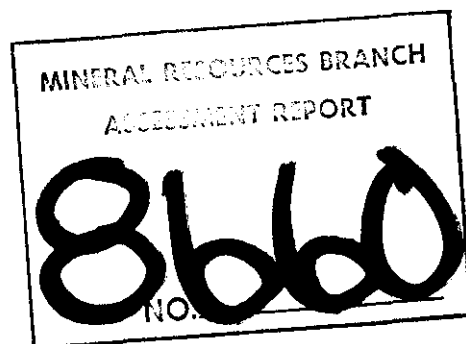
OPERATOR:                  Ventures West Minerals Ltd.

CONTRACTOR:              JMT Services Corp.

WRITTEN BY:                Gordon G. Richards, P.Eng.  
                                  James S. Cristie, Ph.D.  
                                  Colin Harivel, B.Sc.

DATES OF WORK:          Oct. 1 - Nov. 30, 1980

Feb. 15, 1981



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INTRODUCTION

In the fall of 1978 G.G. Richards prospected the upper drainage of Mamin River. Several areas of pyrite mineralized and clay altered acid volcanics were located and several silts were strongly anomalous in arsenic. The EMMONS and TRAIL claims were staked in the spring of 1979. Subsequent prospecting indicated a large area of anomalous arsenic in silts and soils with a few anomalous gold silts and rock chips. The C.D. mineral claim was staked in the fall of 1979 and a preliminary soil survey was made in the area of anomalous gold values. The survey was extended to the east for a distance of 1000 metres in 1980 and outcrops in Mamin River were sampled and mapped.

LOCATION AND ACCESS

The claims are located on the upper drainage of Mamin River some 6 kilometres west of Pam Lake. The claims cover the valley floor and adjacent hillsides. Access can be made with a trail bike or 4 wheel drive truck via logging roads - branch 7 and 9 at MacMillan Bloedel, which leave the main haulage route 12 and 13 kilometres respectively south at Juskatla on Masset Inlet. Branch 7 is partly washed out one kilometre from the main haulage road but can be driven beyond this point along the north side of the Mamin River through the centre of the claim block. Branch 9 is washed out one half kilometre from the main haulage road but can be driven by trailbike beyond this point to near the northwest end of Pam Lake providing access to the east end of the claims.

Helicopters are available in Sandspit 50 kilometres to the southwest. Sandspit has daily jet service from Vancouver. Trucks can be rented in Sandspit but trailbikes would have to be shipped to the Islands if this means of access were to be used.

#### TOPOGRAPHY AND VEGETATION


The Mamin River flows from west to east through the centre of the claims in a broad flat valley covered in mixed, poorly drained hemlock - cedar forests with salal undergrowth and cypress-pine swamps. Hillsides above the valley floor are steep and covered in hemlock-spruce forests. Some logging has been done along portions of the two roads leaving dense second growth about fifteen years old.

#### MINERAL CLAIMS

<u>Name</u>	<u>Units</u>	<u>Record #</u>	<u>Record Date</u>
C.D.	18	1907	December 7, 1979
EMMONS	18	1294	April 9, 1979
TRAIL	20	1295	April 9, 1979

Owner - Gordon G. Richards



<b>JMT SERVICES CORP.</b>
EMMONS PROPERTY
Queen Charlotte Islands <b>LOCATION MAP</b>
SCALE 1" = 136 MILES


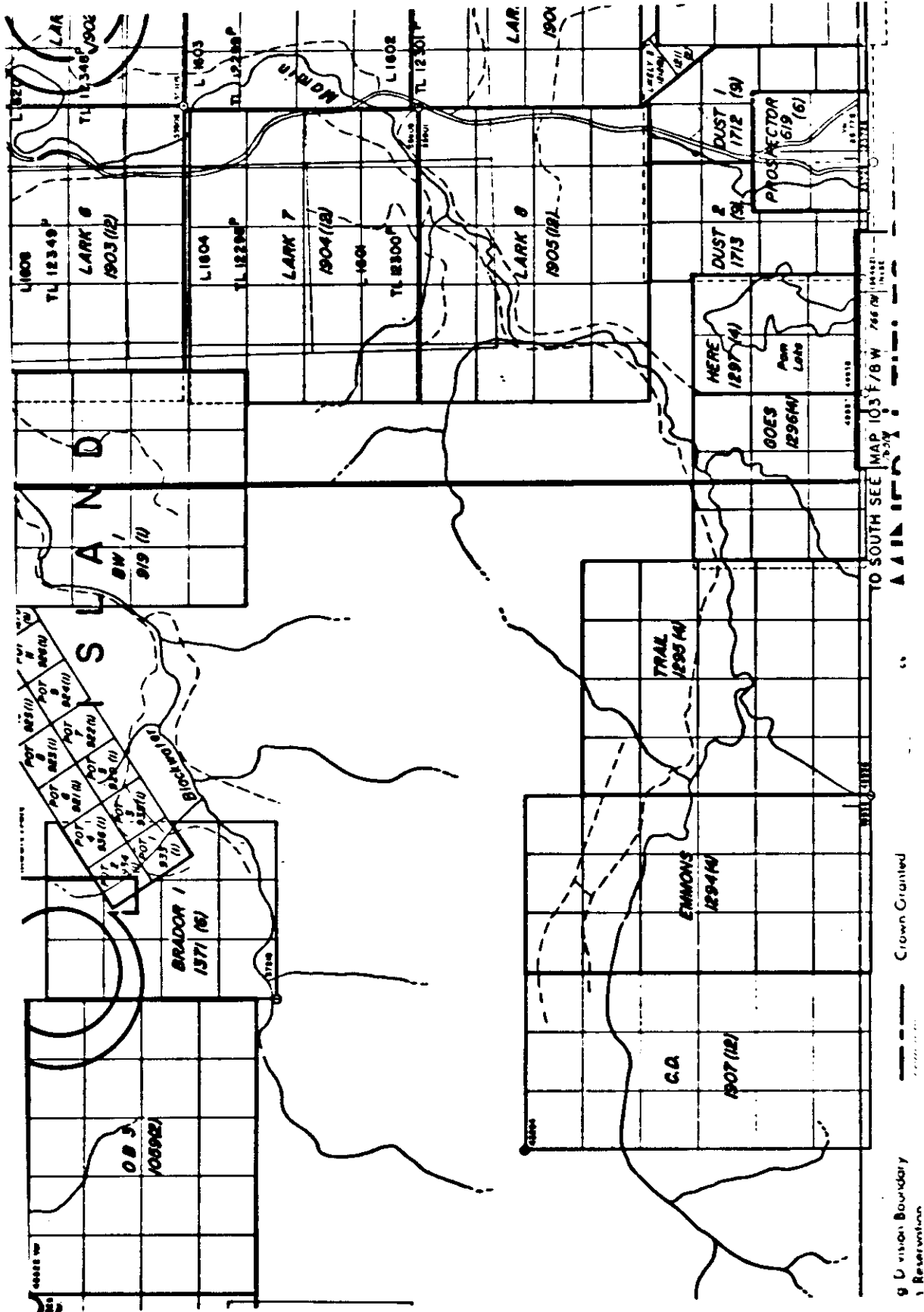


FIGURE 2 CLAIM MAP - EMMONS PROPERTY

C.D. - EMMONS - TRAIL MINERAL CLAIMS

## GEOLOGY

All outcrops in the area are Tertiary Masset Volcanics that include, rhyolite, dacite, andesite and basalt. They have been subdivided on the Geology map (Fig. 3) into rhyolite - tuff and breccia unit, a flow-banded rhyolite and massive rhyolite unit, a chloritic rhyo-dacite pyroclastics and flow unit and an andesite pyroclastics and flow unit. The more acid units display banding that may represent flow banding or bedding of dust to lapilli tuffs.

Attitudes of banding are northerly to northeasterly with steep to moderate dips to the east. If these attitudes are indicative of bedding then a substantial thickness of acid units is exposed along the 2000 m of Mamin River course mapped during the recent work.

In the extreme west of the area recently mapped andesitic pyroclastics and flows are exposed in a road quarry. Similar rocks are exposed in the southwest of the grid area and about 700 m east of the soil grid. However, north of this last mentioned exposure topographically higher exposures of rhyolitic rocks were mapped.

Geological contacts between andesitic and rhyolitic units were not seen but it is presumed that faults, probably northwesterly trending are present and may bound some of the map units. No faults have been recognized, although on a regional scale a major fault is projected to cross the map area.



### ALTERATION AND MINERALIZATION

Alteration and mineralization are best developed within the acid rock units. The acid exposures in Mamin River watercourse are variably altered and contain clay assemblages with from <1 - 3% pyrite. Locally, brecciated pods contain up to 10% pyrite, generally in blebs and veins.

Pyrite also occurs in some of the basic units but is spotty and the outcrops are much less intensely altered.

Another area of intense alteration and strong pyritization noted in previous descriptions about 1000 m east of the 1980 grid, was not sampled during the 1980 programme.

The western zone along the Mamin River was selected for mapping and more detailed sampling on the basis of a few rock chip samples which contain anomalous gold obtained from previous work.

### GEOCHEMISTRY

Geochemical results of silt sampling over the claim area and of soil sampling on the 1980 grid with lines spaced one hundred metres apart and sample intervals of 50 metres are shown in Figure 4.

In total, 282 soil, silt, and rock chips were collected from the property. Silt samples were collected with a spoon from active silts in creeks. Soil samples were collected with an auger from the B horizon where possible. Rock chip samples were made from five to ten rock chips. Geochemical analyses were done on the minus 80 mesh fraction by Chemex Labs - 212 Brooksbank Rd., North Vancouver using the following standard procedures:

Arsenic: Perchloric Nitric - Atomic Absorption

Gold: Fire preconcentration - Neutron Activation Analysis

Results from soil samples taken over the grid area are anomalous for arsenic in the north east corner. This anomaly contoured on 20 ppm on Fig. 4, is open to the north and has a N-S elongation. It measures about 350 m long and varies from 50 m to more than 200 m in width.

In soils arsenic ranged from 325 ppm to 1 ppm with an estimated average of 5-7 ppm As. Gold ranged from 4 ppb to <1 ppb in soils with an estimated average of <1. In rock - chips gold ranged in the recently completed grid work, from 170 ppb to a low of <1 ppb with an estimated average of 5-6 ppb.

#### CONCLUSIONS AND RECOMMENDATIONS

Mapping in the Mamin River course has continued an elongate northwest trending zone of altered, pyritized acid rocks of the Masset Formation. Within this zone breccia pods were sampled, one of which returned 170 and 132 ppb Au in rock chip samples.

The relatively low gold results in both soils and most rocks is not encouraging but the possibility that a masked target is present should not be discounted. The arsenic anomalies are support for such a target and to further assist interpretation some soil sample should be run for mercury in the area of the As anomaly. A coincident As-Hg anomaly could indicate a drill target for deeper gold mineralization.

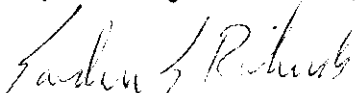
The arsenic anomalies on both the 1979 and 1980 grids should be closed off and further sampling north of the main road is recommended. A reconnaissance traverse, just north of the logging slash, north of the soil grids, should be done with soil and detailed stream sediment samples collected along its length. East of this large area of logging slash,

a relatively large SW flowing tributary should be traversed to where it forks.

More detailed sampling is needed in the area of alteration and pyrite mineralization 500 m east of this tributary.

South of the Mamin River and south-east of the recent soil grid, three stream sediment samples ran  $>200$  ppm As. In this area reconnaissance and more detailed soil sampling is recommended.

Respectfully submitted,

  
Gordon G. Richards, P.Eng.  
Geologist

  
James S. Christie, Ph.D.  
Geologist

  
Colin Harivel B.Sc.  
Geologist

EMMONS PROPERTY - 1981 BUDGET

Geologist	9 days @ \$200/day	\$ 1,800
Helper	9 days @ \$100/day	900
Meals	18 days @ \$25/day	450
Camp		50
SBX 11		50
Supplies		400
Freight		200
Accommodation	2 nights @ \$50/night	100
Truck	9 days @ \$50/day	450
Geochem	500 samples @ \$10/sample	5,000
Report 1980 - 1981		1,500
Filing work	1980 - 1981	545
Contingency		<u>555</u>
	Total	<u>\$ 12,000</u>

STATEMENT OF COSTS

## EMMONS PROPERTY - 1980 PROGRAMME

## GEOLOGISTS:

## Field Work

J.S. Christie	Oct. 1-7 incl. 7 days @ \$175.00	\$ 1225.00
C. Harivel	Oct. 1-7 incl. 7 days @ \$175.00	1225.00

## Plotting Data                      Map and Report Preparation

J.S. Christie	Nov. 24 - 26      3 days @ \$175.00	525.00
C. Harivel	Nov. 22, 29, 30-3 days @ \$175.00	525.00

## EXPENSES:

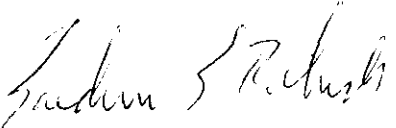
Chemex Labs # 40330, 40331	2679.00
J.S. Christie Exp. Act.	211.34
C. Harivel        "        "	45.65
Budget # 07061	463.29
Vancal # 81414	5.36
P.W.A. # 2033P	149.16
Hudson # 21664	321.04
Meals - 14 mandays @ \$22.00	308.00
Camp Rental one week	50.00
Airfares - 2 one way Van. QCI	209.11
SBX 11 Rental one week	50.00
Drafting T. Kovacevic	250.00
Typing & Report Duplication	<u>75.00</u>

TOTAL	\$ 8,316.95
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STATEMENT OF QUALIFICATIONS

I, Gordon G. Richards of Vancouver, British Columbia do hereby certify that,

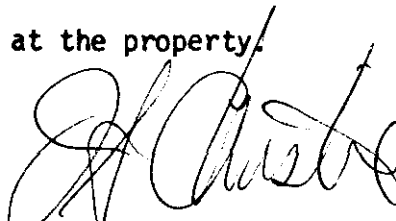
1. I am a Professional Engineer of the Province of British Columbia, residing at 6195 Lynas Lane, Richmond, B.C., V7C 3K8.
2. I am a graduate of the University of British Columbia B.A.Sc. 1968, M.A.Sc. 1974.
3. I have practised my profession as a mining exploration geologist, continuously since 1968.
4. This report is based on my personal knowledge of the district, and mapping of the geology at the property.

  
Gordon G. Richards, P.Eng.

STATEMENT OF QUALIFICATIONS

I, James S. Christie of Vancouver, British Columbia do hereby certify that,

1. I am a Professional Geologist residing at 3921 W. 31st Ave., Vancouver, B.C. V6S 1Y4.
2. I am a graduate of the University of British Columbia B.Sc. Honours Geology - 1965, Ph.D. Geology - 1973.
3. I have practiced my profession as a mining exploration geologist, continuously since 1965.
4. I am a Fellow of the Geological Association of Canada.
5. This report is based on my personal knowledge of the district, and mapping of the geology at the property.



James S. Christie, Ph.D.

STATEMENT OF QUALIFICATIONS

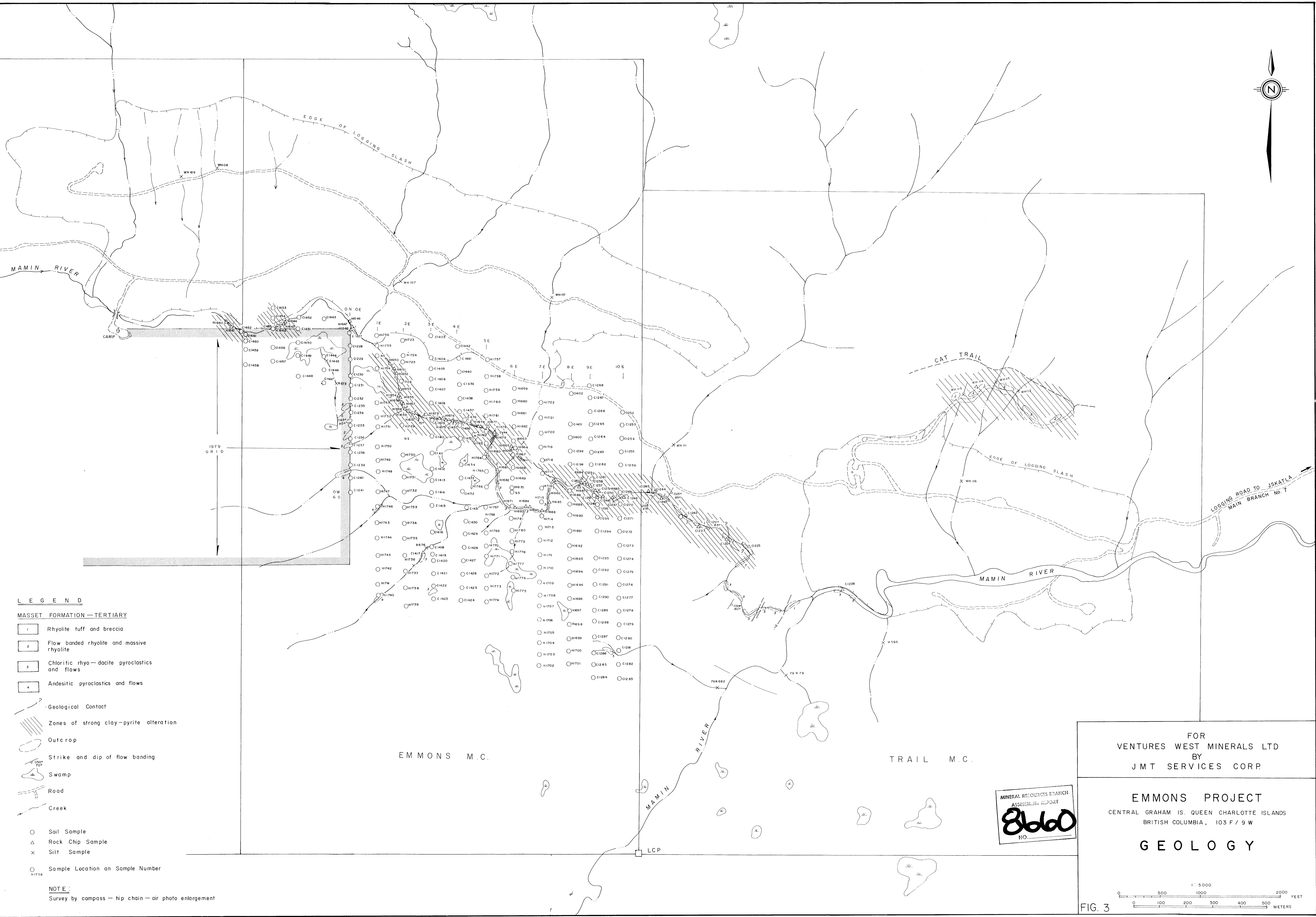
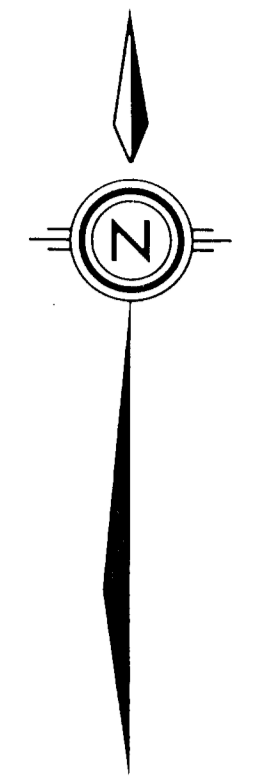
I, C. Harivel of Telkwa, British Columbia, do hereby certify that:

1. I am a geologist residing at Hislop Road, Telkwo, B.C., VOJ 2X0.
2. I am a graduate of the University of British Columbia; B.Sc. Honours Geology - 1972.
3. I have practiced my profession as a mining exploration geologist continuously since 1972.



Colin Harivel B.Sc.





**LEGEND**

**MASSET FORMATION — TERTIARY**

- 1 Rhyolite tuff and breccia
- 2 Flow banded rhyolite and massive rhyolite
- 3 Chloritic rhyo-dacite pyroclastics and flows
- 4 Andesitic pyroclastics and flows

- Geological Contact
- ▨ Zones of strong clay-pyrite alteration
- Outcrop
- ↗ Strike and dip of flow banding
- ☾ Swamp
- Road
- ~ Creek

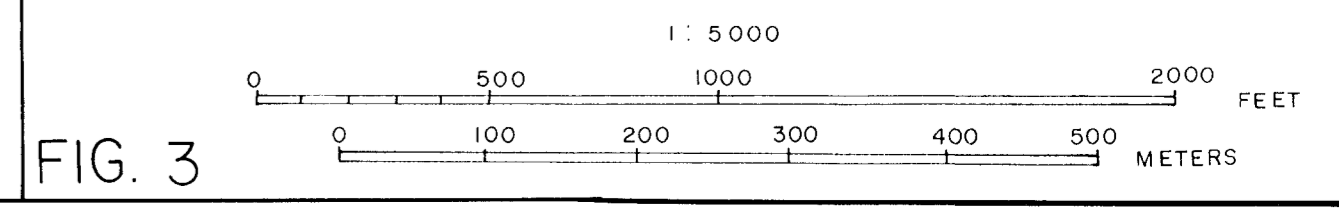
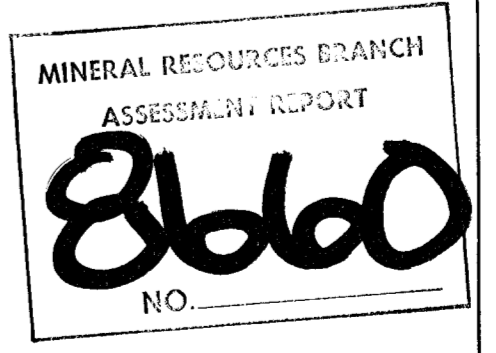
- Soil Sample
- △ Rock Chip Sample
- × Silt Sample
- Sample Location and Sample Number

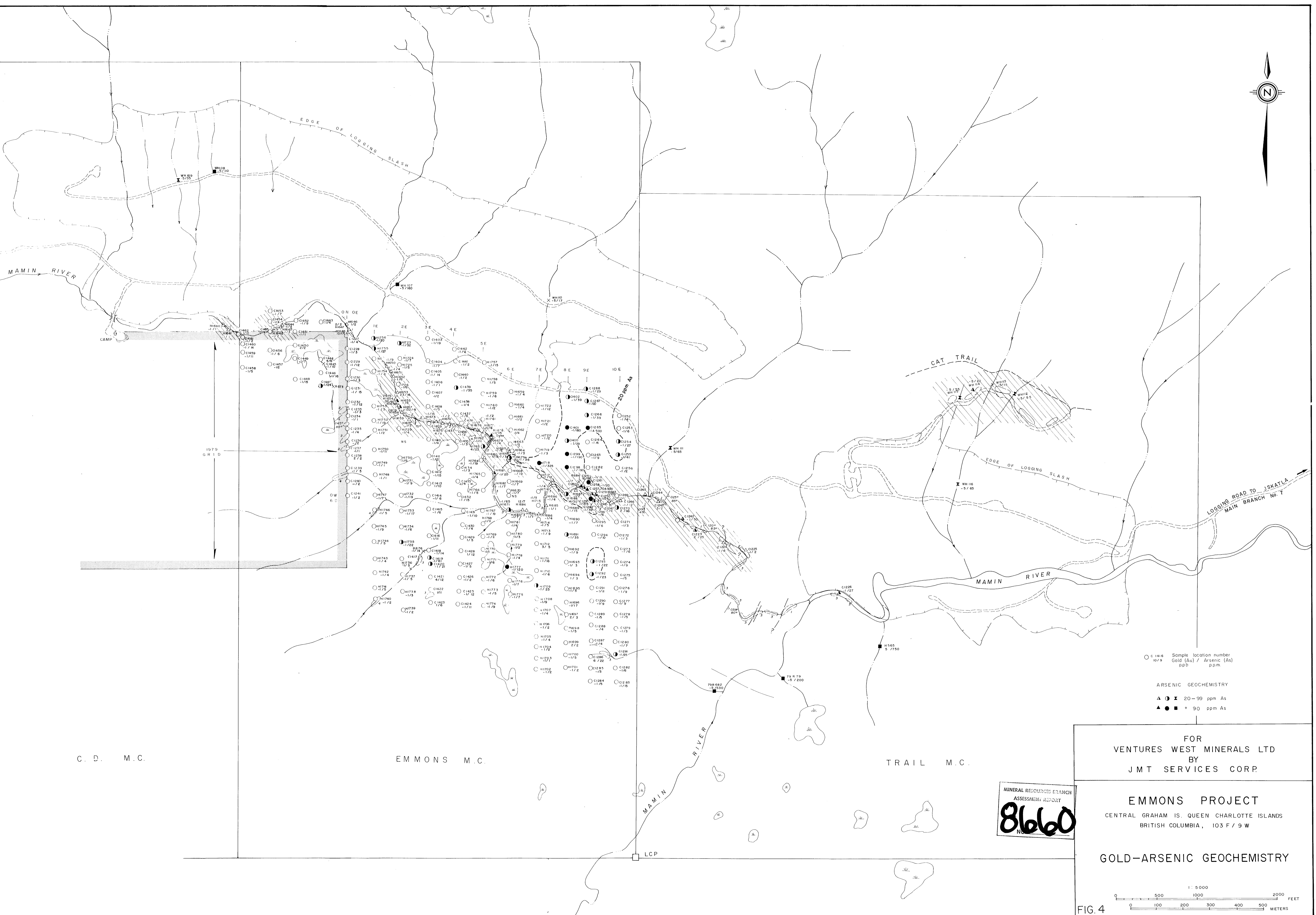
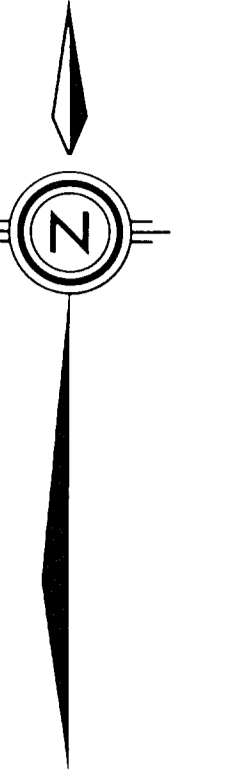
**NOTE:**  
Survey by compass — hip chain — air photo enlargement

FOR  
VENTURES WEST MINERALS LTD  
BY  
JMT SERVICES CORP.

**EMMONS PROJECT**  
CENTRAL GRAHAM IS. QUEEN CHARLOTTE ISLANDS  
BRITISH COLUMBIA, 103 F / 9 W

**GEOLOGY**





○ C 1414 Sample location number  
1079 Gold (Au) / Arsenic (As)  
ppb ppm

ARSENIC GEOCHEMISTRY  
 ▲ ● × 20-99 ppm As  
 ▲ ● ■ + 90 ppm As

C. D. M.C.

EMMONS M.C.

TRAIL M.C.

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MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8660**  
 No.

EMMONS PROJECT  
 CENTRAL GRAHAM IS. QUEEN CHARLOTTE ISLANDS  
 BRITISH COLUMBIA, 103 F / 9 W

GOLD-ARSENIC GEOCHEMISTRY

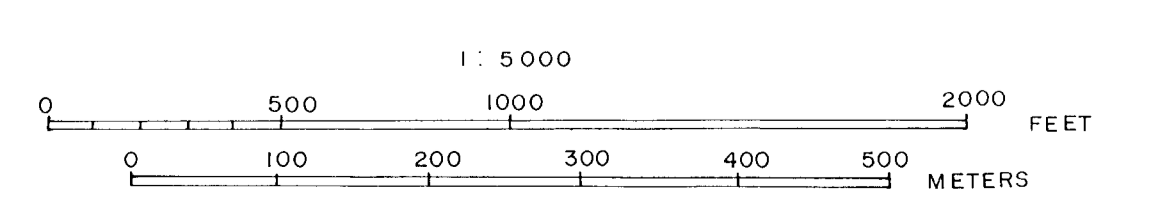


FIG. 4