

600

180-4000-8398

GEOLOGICAL & GEOCHEMICAL REPORT
MARIE LAKE PROPERTY
(DUST #1 and #2, OLD TRAIL, OLD PROSPECTOR
and MANY YEARS #2 MINERAL CLAIMS)

GRAHAM ISLAND, B. C.

53°30'N 132°20'W

NTS 103F/8W/9W

Owners: G. Richards
Chevron Canada Limited

Operator: Chevron Standard Limited

Authors: G. Walton
D. Arscott

M486

September, 1980

8398

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INTRODUCTION

From 21st June to 1st July 1980 a field program involving geological mapping and gold-arsenic geochemistry was carried out on the Marie Lake property as an expansion of earlier (1979) coverage of the same type.

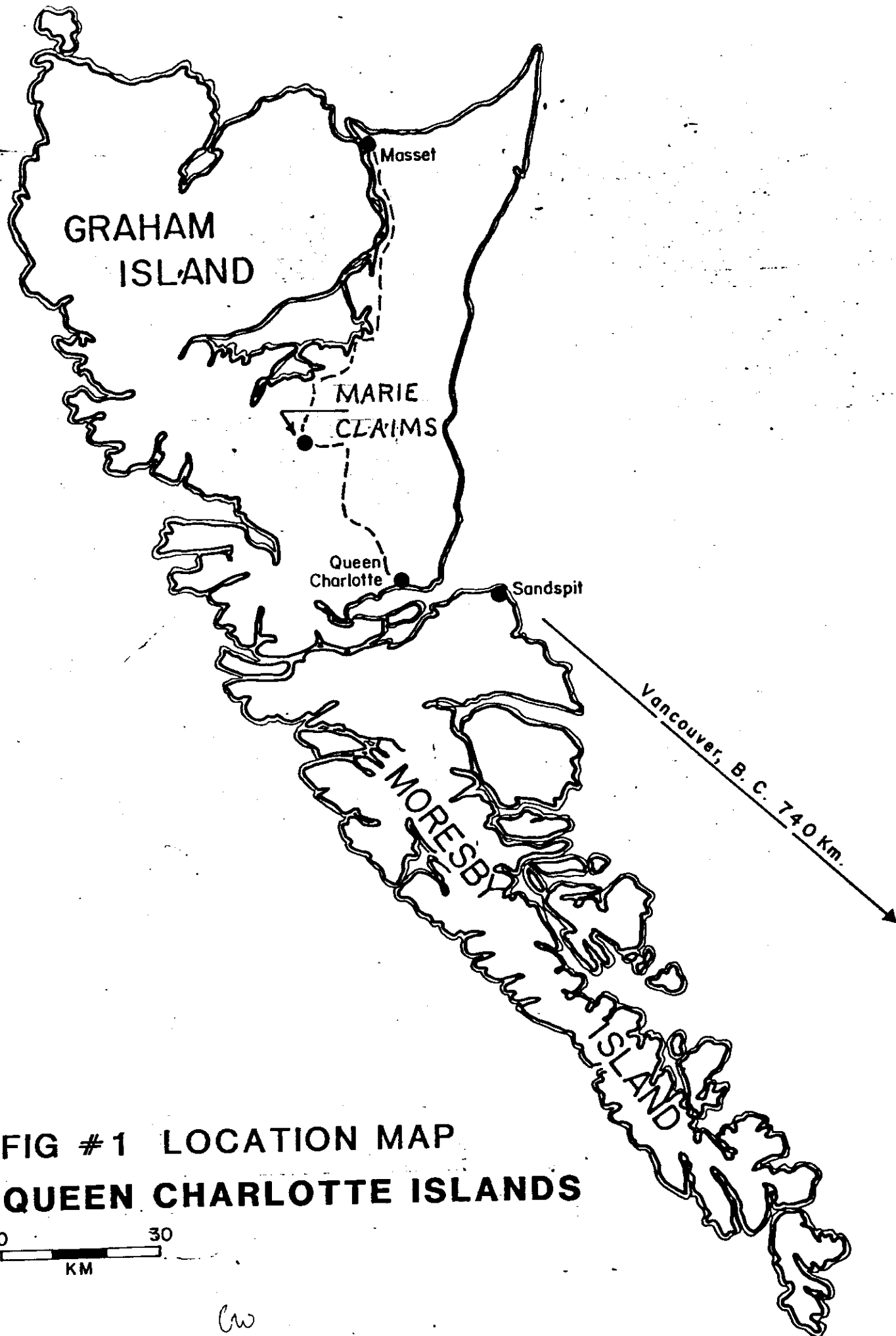
The general intention of this work was to evaluate the potential of the property for low grade-high tonnage gold mineralization. The Consolidated Cinola deposit located 8 km to the NE, in a similar geological setting was taken as a tentative general model for this work. The results of a preliminary feasibility study for the Cinola deposit released in March 1980 gave drill indicated open pit reserves of 26.8 M tons of 0.064 oz/ton Au.

LOCATION AND ACCESS (Figs. 1 and 2)

The property is 790 km NW of Vancouver, B. C. and 32 km NW of Queen Charlotte City in the Queen Charlotte Islands. It is situated on the MacMillan Bloedel Ltd. mainline between Queen Charlotte City and Juskatla, its position being easily identified by the presence of Marie Lake which is visible from the road.

CLAIMS (Fig. 3)

At the time the work was done the property as a whole comprised the following claims:



**FIG #1 LOCATION MAP
QUEEN CHARLOTTE ISLANDS**



CW

<u>Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Record Date</u>
Many Years #1	4	620	Jun. 5, 1978
Many Years #2	12	650	Jul. 17, 1978
Many Years #3	1	765	Sep. 8, 1978
Many Years #4	3	766	Sep. 8, 1978
Old Trail	20	618	Jun. 5, 1978
Old Prospector	4	828	Nov. 7, 1978
Dust #1	8	1712	Sep. 17, 1979
Dust #2	8	1713	Sep. 17, 1979
Goes	9	1296	Apr. 9, 1979
Here	6	1297	Apr. 9, 1979

A further claim, the Prospector (4 units, No. 619), within the area covered by the Dust #1 and #2, had been allowed to lapse on 5th June 1980. However because of an administrative error involving different registered ownerships the ground covered by the Prospector actually came open. This open ground has now been restaked. The new claim, also called Prospector, was recorded on 3 September 1980.

HISTORY

There is no known record of old work in the immediate claims area.

The initial staking in May 1978 was by personnel associated with JMT Services Corp. and was a result of the recognition of a number of factors including:

- a) The relative closeness to the Consolidated Cinola gold deposit (previously known as the Babe or Specogna property).
- b) A small known gold showing in the area.
- c) Geochemical highs, strong alteration, and Tertiary rhyolites, encountered during regional traverses.

A H A M

P R O V I N C I A L

F O R E S T

JULY 1980 PROGRAM
COVERAGE

Juskatla ↑

53° 30'

O.C. City ↓

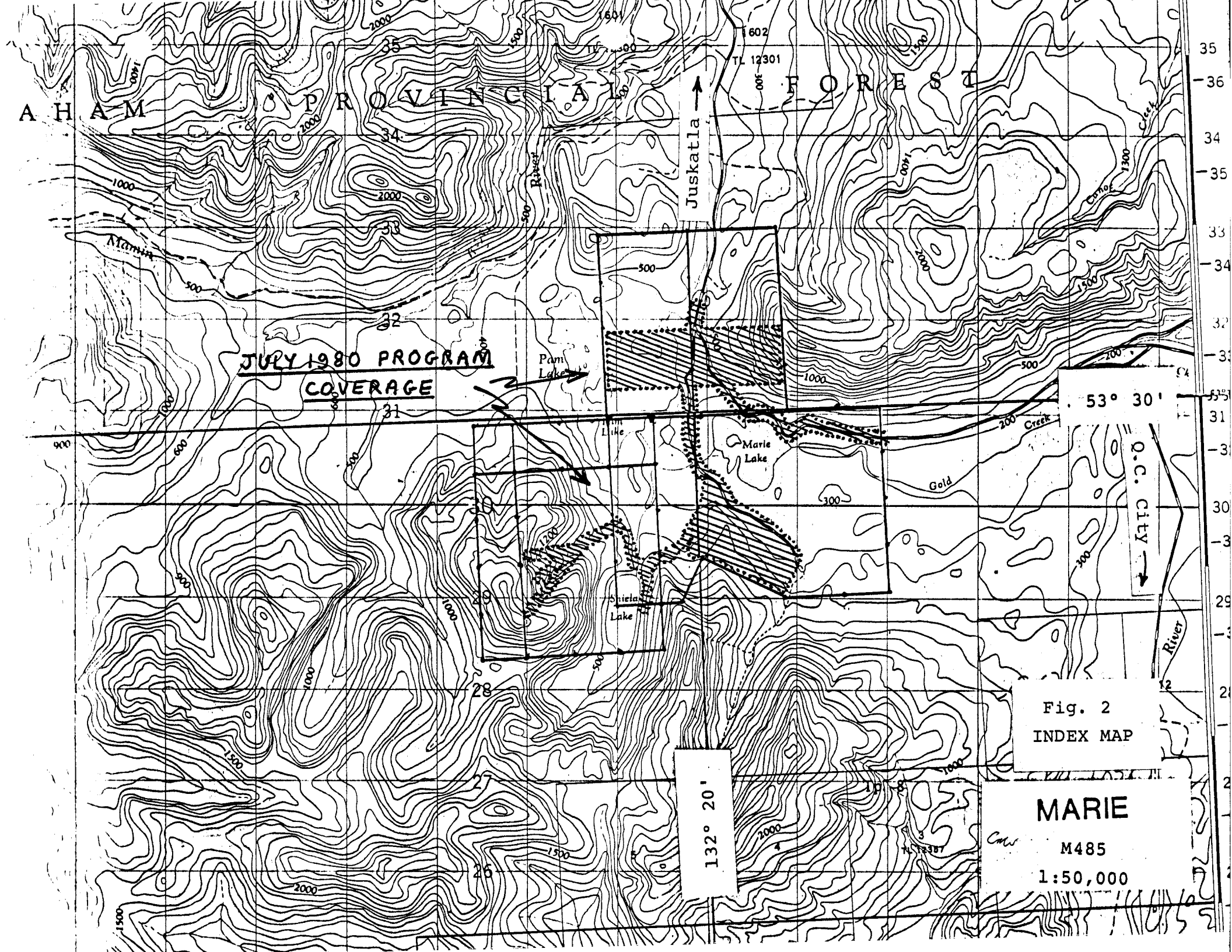
132° 20'

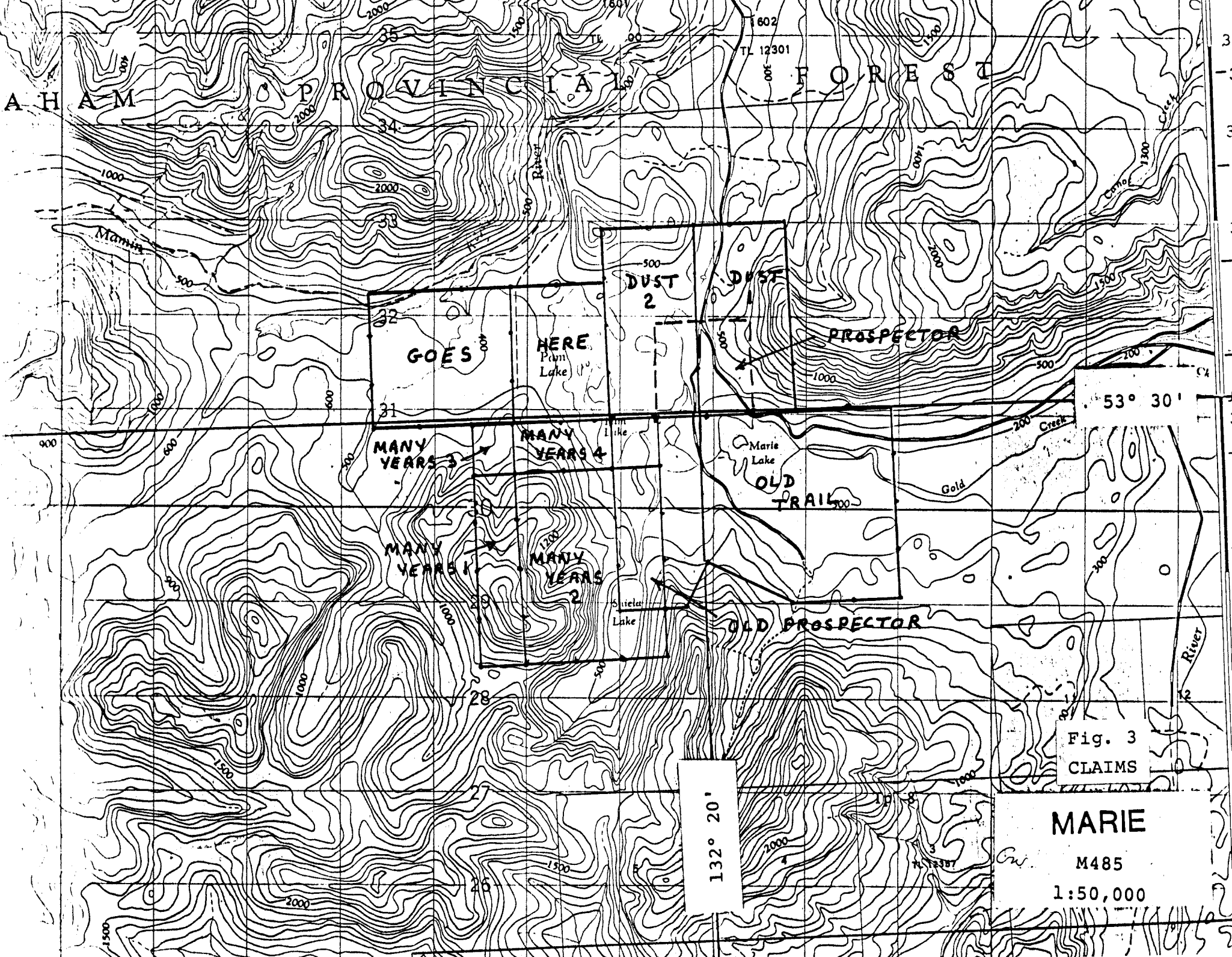
Fig. 2
INDEX MAP

MARIE

M485

1:50,000





AHAM

PROVINCIA

FOREST

GOES

HERE

DUST
2

DUST

PROSPECTOR

MANY
YEARS 3

MANY
YEARS 4

MANY
YEARS 1

MANY
YEARS 2

OLD
TRAIL

OLD PROSPECTOR

Fig. 3
CLAIMS

MARIE

M485

1:50,000

132° 20'

53° 30'

35
-36
34
-35
33
-34
32
-3
31
-3
30
-3
29
-1
2
2
2

In June 1978 the property was optioned by Chevron Canada Ltd. In 1979 preliminary surface work, both geological and geochemical, was carried out under contract by JMT Services Corp., and a 6-hole 485 m percussion drilling program by Tonto Drilling Ltd.

The results of these programs were moderately encouraging. The best drill hole yielded a geochemical assay equivalent to 0.016 oz/ton Au over 18.3 m.

Reference is made to the following assessment reports:

G. Richards, J. Christie - Geology & Geochemistry, Marie Area,
November 1, 1979.

G. Richards, J. Christie - Percussion Drilling Report, Marie
Group, January 24, 1980.

GEOGRAPHY

The claims cover a land area with an unusual density of lakes. These constitute the source area for a tributary (with the encouraging name of Gold Creek) of the Yakoun River (see Figs. 2 and 3).

The adjacent high ground attains a relief of 550 m, with slopes that are not, for the most part, excessively steep. An equal or greater inhibition to foot travel than these slopes is the relatively abundant patches of thick second growth from early logging, broad slash from current logging, and local areas of heavy dead fall.

Precipitation, though heavy in the winter months, is probably moderated by the relatively low elevation and central island location. The availability of water for exploration purposes is generally good most of the year, except high on the hill bordering the W side of the claims. As elsewhere in the Queen Charlotte Islands, a 9 month field season is possible, though not always desirable.

GEOCHEMISTRY

A total of 161 soil and 56 rock samples were collected during this year's program from grid lines and mapping traverses.

Soil Sampling (Fig. 5)

The soils were taken mainly from "B" horizon material at depths of 15 to 20 cm using prospecting picks and high wet strength paper bags. They, along with the rock samples, were analysed by Bondar Clegg and Company Ltd. of North Vancouver, according to the schedule attached to the appendix.

Only one Au soil value (at 8S, 2+50W) can be considered anomalous. It is 25 ppb, almost all other samples being 5 ppb or less. The As results are almost equally lifeless, with one value of 160 ppm at 6S 0+50W and another of 180 ppm at 6S 4+00W. Background levels for As are between 5 and 20 ppm. Inasmuch as these values for As on the Dust claims average one half of those collected in the same area last year, the possibility of an analytical error cannot be ruled out. However, the lines sampled in each of the two years

were interspersed, and the sample populations in each case are too small (95 and 99 respectively) to make a definitive comparison. The results of this work are plotted on Figs. 5a and b.

Rock Sampling

Of the 56 rocks collected 4 were clearly anomalous in As and Au and 3 in As only. The rocks in question were as follows:

<u>No.</u>	<u>Field Description</u>	<u>Au ppb</u>	<u>As ppm</u>
M-DO-6	Highly silicified, quartz-veined felsic feldspar porphyry	190	200
M-DO-13	Rhyolite tuff breccia, greenish grey within 0.6 m wide rusty fault zone.	65	240
M-80-8	Rhyolite tuff, silicified, minor quartz veining.	<5	100
M-80-8A	Rhyolite tuff, pyrite	<5	120
M-KO-2	Rhyolite, highly silicified	<5	120
M-KO-8	Rhyolite tuff, heavily pyritic, tourmalinized.	65	300
M-80-21	Siltstone/argillite, quartz veined, hornfelsed, minor pyrite.	60	130

The rock sample results are also plotted on Figs. 5a and b.

GEOLOGY

General

For aspects of the geology not covered here the reader is referred to: Sutherland-Brown, A. - Geology of Queen Charlotte Islands, B.C.D.M. Bull. No. 54, 1968 as well as to the assessment reports mentioned in the HISTORY section of this report.

The 1980 mapping of the major rock units closely agrees, in the areas overlapped, with that of JMT Services Corp. in previous programs. Some new detail resulted, however, from mapping initially on a scale of 1:2500. This was later reduced to 1:5000 to aid correlation with the previous work.

Despite this effort very little new information of significance was derived.

The general stratigraphic succession is as follows:

Masset Formation (Tertiary)

Pyroclastics, felsic and mafic

A feldspar porphyry stock

Flows, felsic and mafic, minor pyroclastics

Major Unconformity

Granodiorite intrusion (Cretaceous)

Yakoun? Formation (Jurassic)

Siltstone and argillite

Yakoun Formation

This unit mapped, on the basis of general lithologic similarity and also of regional geology by Sutherland Brown as Yakoun, could instead be Kunga Formation. Some evidence for this latter possibility lies in the fairly extensive area previously mapped SW of Shiela Lake, where abundant limestone fragments have been incorporated into the felsic Masset pyroclastics.

The presumed Yakoun rocks outcrop in several isolated localities where erosion has cut below the unconformity underlying the Masset rocks, more specifically N of Shiela Lake and W of Marie Lake. The rocks in question are siltstones and argillites, locally hornfelsed and containing up to 3% pyrite near the granodiorite stock.

Granodiorite

The granitic intrusion in the vicinity of Shiela Lake is post Yakoun, as evidenced by numerous sedimentary xenoliths near its borders, and pre Masset. It is, therefore, probably Cretaceous in age. It is a relatively unaltered medium grained equigranular granodiorite. Rare carbonate and quartz veins are present.

Masset Formation

The section of Masset Formation outcropping on the hill W of Shiela Lake is almost entirely felsic, i.e. dacitic to rhyolitic, in composition, and almost entirely pyroclastic. It is commonly rusty and locally silicified. In some places fine randomly oriented quartz micro veinlets are present. It is cut by a variety of dykes, from dacite to rhyolite in composition. Some of the latter are banded, and but for their steep dips, would have been mapped as tuffs. Spherical clots of tourmaline are abundant in at least two areas within this felsic sequence.

A feldspar porphyry stock outcropping on or very close to the southern boundary of the claim block is also presumed to be Masset. It has a dacitic composition but is very highly silicified. An

abundance of quartz-pyrite and chalcedony veinlets cut one outcrop of the porphyry and previous sampling there yielded 0.03 oz per ton Au over a 6 m width. This has been referred to as the Rockhound showing. There does not appear to be any extension of this showing northwards, unless this occurs at depth.

In the central area of the claims the Masset is represented by felsic and mafic volcanics. Compositions and textures are difficult to pinpoint because of intense fracturing and alteration. A variety of flows and a basalt of tuff to tuff breccia texture are clearly present, but probable faulting between outcrops and a lack of bedding attitudes makes it impossible to assemble a stratigraphic section.

The area N and NE of Marie Lake is less subject to structural complications, but more enigmatic in age. Several lines of evidence suggest that this area is Tertiary (Masset). These are:

- (a) A very felsic unit (a probable ash flow tuff) low in the apparent stratigraphic section.
- (b) Several basaltic units in the section.
- (c) Certain rock types, i.e. andesite and dacite flows, very similar to those in the central claims area.

However, other evidence points towards a pre Masset age. This includes:

- (a) The discovery of a belemnite in spheriodally-weathering andesite (volcanic sandstone?) within the succession.

- (b) The presence of clearly bedded thin sedimentary tuff units, an unlikely occurrence in the predominantly subaerial Masset.
- (c) The presence of at least one strong apparent unconformity within the succession.
- (d) A stratigraphic dip in a large part of the section which would be unusually steep for Masset rocks.

Hence no unequivocal age can be assigned to this area. If both Masset and pre-Masset rocks are present then some very strong faulting must have occurred for which there is little or no obvious surface evidence.

Structure

The structure on the property is complex, but not easily detailed.

We have:

1. A variety of airphoto lineaments the expression of which is subdued by extensive overburden in the central claims area.
2. A physiographic area anomalous in lake density.
3. Abundant outcrop fracturing in the central claims area.
4. Strong apparent unconformity or unconformities NW of Marie Lake.

Only two strong probable faults have been plotted in Fig. 4, but undoubtedly there are more.

Mineralization

Very little has been added to what is known about mineralization on this property. Pyrite is common in many of the rocks, particularly the Masset, and locally abundant in structurally broken areas.

Although geochemically anomalous indications of gold mineralization remain erratic and of low amplitude, the possibility of surface leaching should not be ignored.

CONCLUSIONS

1. No new geologic model has been developed that could guide us to disseminated Au mineralization on these claims.
2. The general similarity of environment to that of the Consolidated Cinola deposit remains apparent.
3. The best exploration result to date remains that of percussion drill hole M6 (0.016 oz/ton Au over 18.3 m). This would be highly encouraging except for the facts that:
 - (a) The hole appears to be on and subparallel to a small rhyolite dyke.
 - and (b) The dyke host shows no strong surface geochemical response, either here or close to other similar dykes.
4. Exploration on this property should remain at a low level.

RECOMMENDATION

Further work on this claim block could include:

1. Pitting or pack sack drilling on the felsic pyroclastic to adequately confirm or deny the presence of leaching.
2. Completion of surface geochemistry on the Northern half of the Dust #1 and #2 claims.
3. Dependent on promising results from 1. or 2. above, a magnetometer and/or VLF survey to aid the delineation of lithology and structure.

D. Arscott
Godfrey Walton
G. Walton
D. Arscott

GRID CONTROL

All control was by hip chain and compass, with slope corrections. Stations were marked on double flags, and inter-station lines with single flagging.

Careful road traverses were used to control the road mapping and serve as a check on the grid lines.



BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: 985-0681 TELEX: 04-952667

Fraction used for analysis: Rocks - 100 mesh; soils/sediments - 80 mesh unless otherwise noted.

ELEMENT	EXTRACTION	METHOD OF ANALYSIS
Cu, Pb, Zn, Mo, Ag, Cd, Ni, Co, Mn, Fe	Hot Lefort Aqua Regia Multi Acid	Atomic Absorption
U	Hot Conc HNO ₃ Hot Multi-Acid 1% Sodium Bicarbonate; 20°C Basic Oxidizing; 20°C 1% Acetic; 20°C 0.1N HNO ₃ ; 20°C	Fluorimetric
W	Basic oxidizing fusion	Delayed Neutron Activation Colorimetric
F	Basic Fusion	Citrate Buffer-Specific Ion
Au, Pt, Pd	Fire Assay and Hot Aqua Regia	Atomic Absorption
As	HC10 ₄ - HNO ₃ Arsine	Colorimetric
Hg	Aqua Regia	Closed Cell, Flameless Atomic Absorption
Sn, Sb, Ba, Rb, Sr, Y Zr, Nb, La, Ce, Ti	----- -----	Energy dispersive XRF Discrete angle/cathode XRF
Th, Se, Ta, Ga, In	Hot Conc HNO ₃ Multi Acid	Atomic Absorption
Bi	-----	Atomic Absorption
V, Be, Li	Multi Acid	Atomic Absorption
Cr	Sodium Peroxide Fusion	Atomic Absorption
Tl, Re	Multi Acid + Organic Extraction	Atomic Absorption
B	----- Fusion + H ₂ SO ₄	Emission Spec Colorimetric
P	Multi Acid	Colorimetric
S	-----	Leco Induction Furnace
WHOLE ROCK ANALYSIS		
SiO ₂ P ₂ O ₅	Multi Acid + Fusion	Gravimetric
K ₂ O Na ₂ O	Multi Acid + Fusion	Atomic Emission
CaO MgO MnO Fe Al ₂ O ₃	Multi Acid + Fusion	Atomic Absorption
TiO ₂	Multi Acid + Fusion	Colorimetric
S	-----	Leco Induction Furnace
Other:		

CERTIFICATE

I, David Philip Arscott am a Professional Engineer,
registered in British Columbia with office address at
901 - 355 Burrard Street, Vancouver, B. C. V6C 2G8.

I have practiced Mineral Exploration almost continuously
since 1961, and hold degrees in Mining Engineering (1963)
and Mineral Exploration (1966).

David Arscott

DAVID ARSCOTT, P.Eng.

September 1980

STATEMENT OF QUALIFICATIONS

I, Godfrey Walton, am a professional geologist with office at 901 - 355 Burrard Street, Vancouver, B. C. V6C 2G8.

I am a graduate of the University of Alberta (B.Sc. 1974) and Queen's University (M.Sc. 1978). I have worked in mineral exploration since 1970, and am a member of the Canada Institute of Mining and Metallurgy and Mineralogical Association of Canada.

Godfrey Walton

GODFREY WALTON

September 1980

MARIE LAKE CLAIMS

1980 Program, 21 June to 1 July

LABOUR COSTS

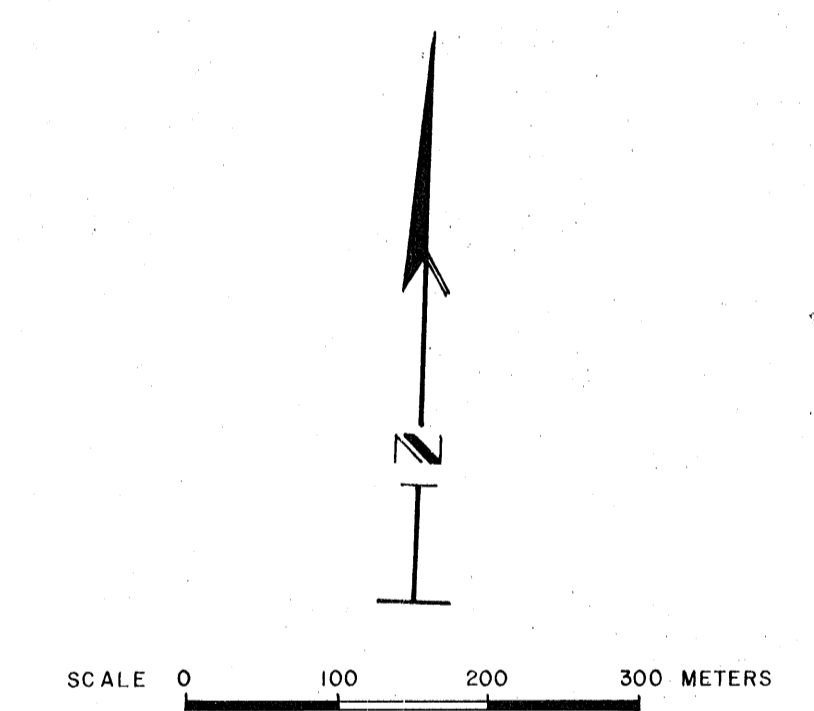
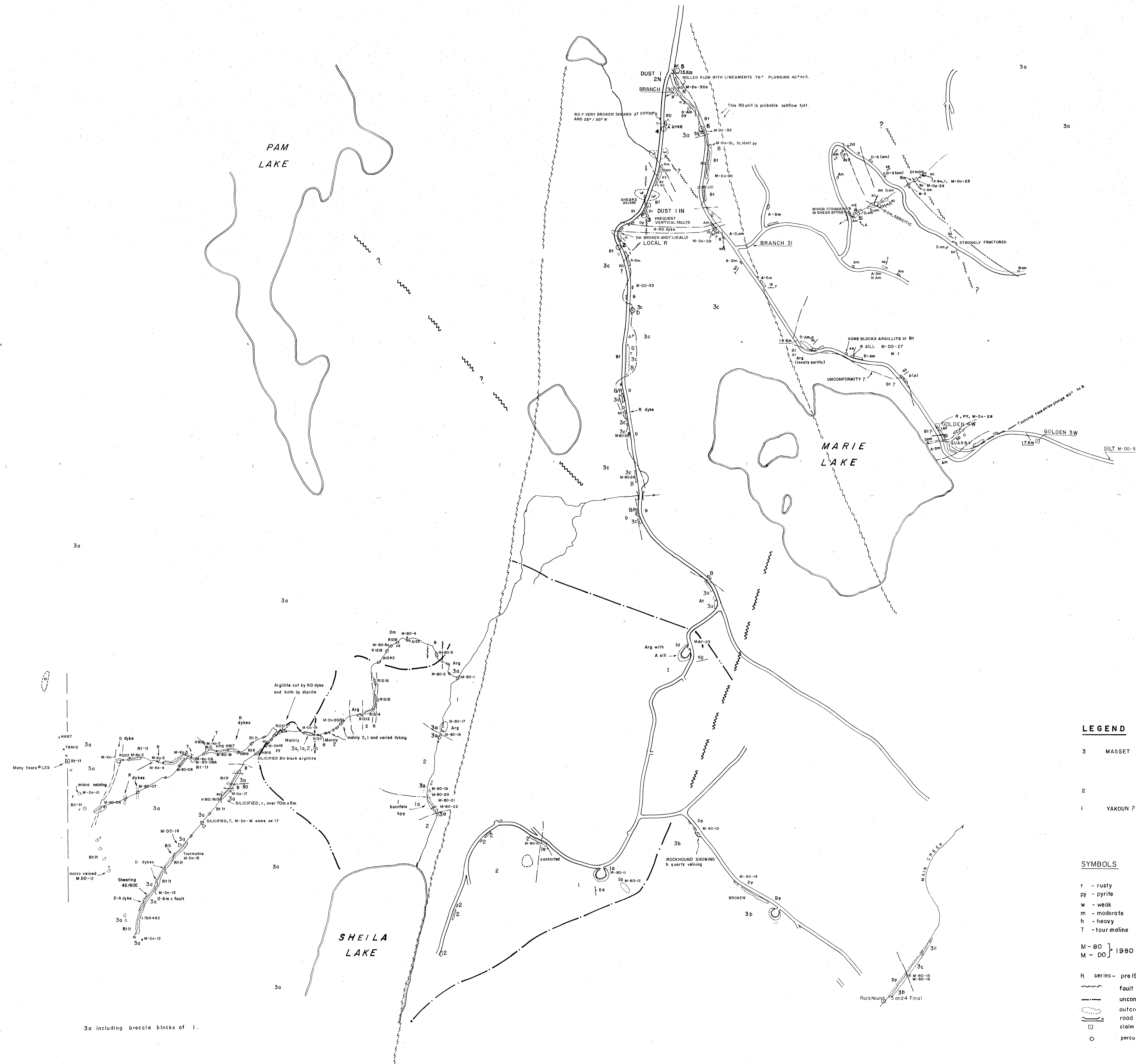
		<u>No. Days</u>		
		<u>Field</u>	<u>Travel</u>	<u>Office</u>
D. Arscott,	Geologist	4	1	2
G. Walton,	"	10	1	
K. Hicks,	Assistant	10	1	
D. Madsen,	"	10	1	
H. Johnson,	"	<u>10</u>	<u>1</u>	<u> </u>
		44	5	2
Total Cost (\$104.31 \$/m.d.)				\$5,320.00

EXPENSES

Assays	47 rocks @\$9.15 (Au + As)	\$ 430.05	
	152 soils @\$7.65 (Au + As)	1,162.80	
Food	44 days @\$15.00	660.00	
Field Supplies	44 days @\$10.00	440.00	
Truck	12 days @\$35.00	420.00	
Airfares, Vancouver - Sandspit, one way			
	5 x \$95.72	478.60	
Helicopter	0.7 hrs @\$350.	245.00	
Hotels, freight, and misc. expenses		<u>300.00</u>	
		4,136.45	<u>4,136.45</u>
TOTAL PROGRAM COST			<u>\$9,456.45</u>

David Arscott

D. ARSCOTT



- LEGEND**
- 3 MASSET (a) pyroclastics - tuff tuff-breccia, mainly rhyolitic.
 - (b) feldspar porphyry stock
 - (c) basalt rhyolite interbedded flows and pyroclastics
 - 2 diorite.
 - 1 YAKOUN? siltstone, argillite

- SYMBOLS**
- r - rusty
 - py - pyrite
 - w - weak
 - m - moderate
 - h - heavy
 - T - tourmaline
 - R - Rhyolite
 - RD - Rhyodacite
 - D - Dacite
 - A - Andesite
 - B - Basalt
 - Arg - Argillite
 - p - porphyritic
 - m - massive
 - am - amygdaloidal
 - lt - lapilli tuff
 - t - tuff

M-80 } 1980 samples
M-DO }

- R series - pre 1980 sampling
- fault
- - - - - unconformity
- outcrop
- road
- claim post
- percussion drill hole

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D. Ansell

Chevron Standard Limited Minerals Staff	
MARIE PROPERTY GEOLOGY	
FIGURE No. 4	PROJECT No. M 485
DATE: SEPT 80	REVISIONS
NTS No. 103FW9W	FILE No.
COMPILED BY G.W.	

3a including breccia blocks of 1.



8398

Geoffrey Walker
David Prescott

SOILS
 Au-As
 ppb ppm

ROCKS
 Au-As
 ppb ppm

As-60 ppm contour
 As-30 ppm contour

Note: Contours reflect 1979 as well as 1980 work.
 (on new grids only)

Chevron Standard Limited
 Minerals Staff

MARIE PROPERTY
 GEOCHEMISTRY (1980)

Scale 0 100 200 300 meters

FIGURE No	5	PROJECT No	M 485
DATE	SEPT 80	REVISIONS	SCALE 1:5000
MAP No	103FBW/3W		
PROPERTY	G.W.		