

# 4818

92L/2W

GEOLOGY

AND

4818  
92L/2W

MAGNETOMETER

SURVEYS

FOR

GROUNDSTAR RESOURCES LTD

ON

ATLUCK 1-8

IN THE

NANAIMO MINING DIVISION

OF

BRITISH COLUMBIA

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. 4818	MAP.....

December 10, 1973

MANNY CONSULTANTS LTD

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ILLUSTRATIONS

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#### LOCATION AND ACCESS

The Atluck Group, consisting of 8 claims is aligned in a north-south direction and is situated on the western end of Atluck Lake in the Nanaimo Mining Division of the Province of British Columbia.

Access to these claims is from the logging camp of Nimpkish, over 17 miles of well-kept logging roads maintained by Canada Forest Products Ltd. Permission must be obtained from this company for use of these roads during their working hours.

Access to the settlement of Nimpkish is via logging roads from Gold River or via the new North Island Highway from Beaver Cove. If the latter route is chosen, the route entails a ferry trip from Kelsey Bay to Beaver Cove. This trip takes approximately 4 hours.

#### TOPOGRAPHY AND VEGETATION

The eastern portion of the claims are traversed by a series of fairly low, but steep hills. Small scale cliffs sometimes in excess of 50 feet are common along these hillsides. The general trend of these hills tends to be aligned along a north by northwesterly direction. These hills have not been logged, and are covered by dense stands of cedar, fir, and hemlock

Along the tops of these hills many of these trees have been blown down, severely impeding travel.

The central and western portions of the property exhibit a rather subdued topography, which appears to be a result of glaciation. In this area small scale, glacially-rounded ridges and knolls of limestone are common although much of the area is covered by glacial overburden.

This zone has been logged several years ago and presently much thick underbrush and small secondary growths of conifers abound throughout this area.

Across the northern portion of the property a relic post-glaciation drainage channel exists as evidenced by a wide, fairly deep deposit of well-sorted gravel. This zone terminates along the western edge of Atluck Lake. Presently a small stream meanders through this gravel deposit.

#### WORK DONE

The writer and an assistant worked on the property from October 29 to November 13, 1973. During this period of time the following work was completed.

A baseline running in a north-south direction for a distance

of 4,425 feet, and sidelines every 400 feet running 1,500 feet both east and west were chained and flagged. Several of these lines were displaced because of a large swamp and a pond created by a beaver colony.

A compass was used to maintain directional control and a 100-foot nylon chain was used to measure in the stations.

On this grid a magnetic survey was carried out using a E.J. Sharpe model MF-1 fluxgate magnetometer with readings taken every 100 feet.

Several of these surveys were rejected by the writer because they exhibited a closure error that was too large to be corrected. This discrepancy was caused by solar magnetic influences which varied throughout the time scale used by the survey.

In order to counteract these influences the writer carried out the survey in a series of short lines closing to either one of two points. These points were set at baseline 0 + 00 and baseline 12 + 00 N. Later an arithmetic average was taken of the readings obtained at these points. These averages were later used as the basis for the balanced survey.

While the writer carried out this survey all outcrop areas were noted and their rock types determined. A few measurements of strike and dips were taken. A map of these observations is included with this report.

### GEOLOGY

The Atluck Claims located at the west end of Atluck Lake straddle a contact between metamorphic limestones on the south and west and fine-grained basaltic rocks on the north and east. Much of the actual contact zone occurs in a glaciated valley of subdued topography and is obscured by deposits of overburden.

According to a map and report published by J.E. Muller in 1971, these rocks correspond to the following units:

Jurassic age - Bonanza Volcanics - basalts

Triassic age - Quatsino Formation - metamorphic limestones

Bonanza Volcanics - These rocks where outcropping on the property consist mainly of a fine-grained, dark green coloured basaltic textured material which weathers to rounded surfaces and a light green colour. In places, especially towards the eastern edge of the property this material exhibits an amygdaloidal texture.

The rocks are well-exposed in two old quarries previously excavated to provide fill material for the logging roads. Here the basalts show evidence of extensive shearing in numerous directions. Many of the sheared surfaces are slickensided and evidence of serpentinization exists.

Epidote both as fracture and shear coatings, and as discrete massive veins up to several inches in width, also occur throughout these rocks while quartz in veins and pods is often associated with the epidote.

Also green crystalline crusts of phrenite with quartz and clay are common. This is especially evidenced in a quarry just to the east of the property.

The volcanic material on the eastern portion of the property, especially around lines 16 + 00 N to 24 + 00 N at about 8 + 00 E to 10 + 00 E displays a well-developed amygdaloidal texture. These amygdules sometimes up to several inches in length are filled with white crystalline calcite, massive quartz, chlorite and rarely crystalline epidote.

Although shearing and fracturing occur in numerous directions, a strong N45°E fracture pattern dipping steeply to the southeast persists through this volcanic material.

To the west in an area underlain by the Quatsino formation several basaltic dykes striking in a  $330^{\circ}$  direction intrude the limestones.

Quatsino Formation - These rocks outcropping on the south and western portions of the property as small ridges and glaciated knolls appear to show a  $330^{\circ}$  to  $340^{\circ}$  strike and near horizontal bedding.

This rock is mainly a white, coarsely recrystallized, essentially pure limestone. In places this limestone has graded to a finer-grained dark grey material exhibiting numerous randomly oriented calcite veins. These veins of white, crystalline calcite range from hairline width up to  $3/4$ 's of an inch.

To the west of the property this limestone forms a prominent ridge over 500 feet high trending in a northwesterly direction. Several large volcanic dykes intrude this ridge.

#### MINERALIZATION

Chalcopyrite as small grains and fracture coatings associated with epidote occurs in the volcanics exposed by a road fill quarry at baseline 26 + 00 N.



Numerous small chalcopyrite and malachite fracture coatings occur along the logging road which provides access to the area. These occurrences are especially noted along the shoreline of Atluck Lake.

Chalcopyrite and pyrite also occur as vein and fracture coatings exposed along a new logging road to the east of the property.

#### MAGNETIC SURVEY

Broadly speaking the magnetic survey seems to delineate the Quatsino Formation from the Bonanza Group and the position of the overburden covered contact can be approximated.

Readings taken over the Quatsino limestones average 200 and less gammas whereas these over the Bonanza Volcanics average 300 or more gammas.

A series of low readings across the north end of the property terminating at the western end of Atluck Lake seem related to a very large post-glacial drainage system now largely filled with gravel.

An elongate zone of readings in excess of 400 gammas trending in a rough northerly direction across the western edge of the

property in an area underlain by the Quatsino limestones is related to a volcanic dyke which was noted on the surface.

A series of three anomalous zones over the Quatsino Formation have readings of 3 and more times the overall background for this formation.

These anomalies are elongate in a north by northeasterly direction and are separated by a narrow band of low intensity and could be related to a large faulted or sheared zone along which iron oxide minerals have been concentrated.

#### RECOMMENDATIONS

A program of prospecting and geological mapping along the contact area and over the anomalous zone should be carried out along with the following:

- (a) 3 line miles of induced polarization survey across the known showings and magnetic anomalous zones.
- (b) soil sampling along all grid stations.

CERTIFICATE

I, PETER G. MARSHALL, of the City of Vancouver, in the Province of British Columbia, hereby certify:

1. That I am a geologist and reside in Vancouver, British Columbia.
2. That I attended McMaster University of the City of Hamilton, Ontario and that I am one language short of a degree, and that I have been practising as an exploration geologist for the past seven years.
3. That this report is based on a field examination and surveys carried out under the supervision of E. Amendolagine, P.Eng., during the period of October 29 to November 13, 1973 by field geologist, Peter G. Marshall and field assistant and that reference of the geology of northern Vancouver Island and the property area was made in Geological Mineral Deposits of the Zeballos-Nimpkish Area by J.W. Hoadley and Geological Reconnaissance Map of Vancouver Island and Gulf Islands by J.E. Muller, 1971.

DATED this 10th day of December, 1973.



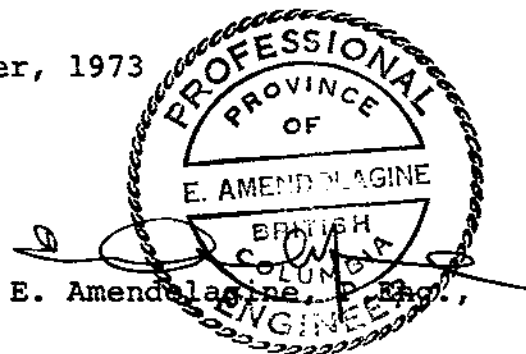
Peter G. Marshall  
Geologist

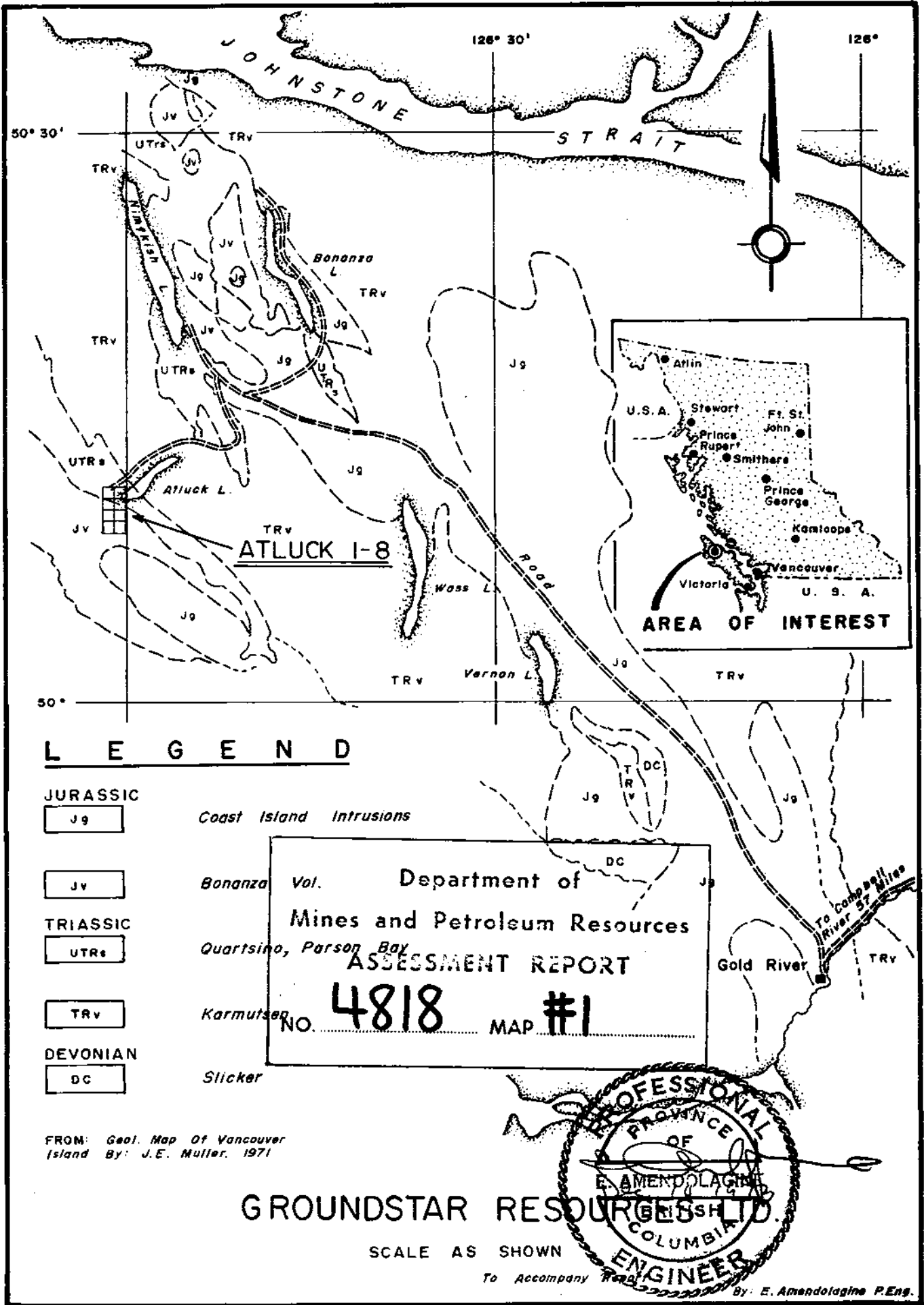
CERTIFICATE

I, EMANUEL AMENDOLAGINE, of the City of Vancouver, in the Province of British Columbia, hereby certify:

1. That I am a geologist and reside in Vancouver, British Columbia.
2. That I am a graduate of Hunter College of the City of New York, and Columbia University with a B.A. and M.A. respectively and that I have been practising my profession as a geologist for 19 years.
3. That I am a registered professional engineer in the Province of British Columbia.
4. That this report is based on field examinations during the period of July to November, 1972; on a geological survey under my supervision completed by my field geologist, P.G. Marshall and his assistant during the period of October 29 to November 13, 1973 and on the study of geologic reports of the area, Ref. G.S.C. Memoir 272, Geological Mineral Deposits of the Zeballos-Nimpkish Area by J.W. Hoadley and Geological Reconnaissance Map of Vancouver Island and Gulf Islands by J.E. Muller, 1971.

DATED this 10th day of December, 1973





**L E G E N D**

- JURASSIC
  - Jg Coast Island Intrusions
  - Jv Bonanza Vol.
- TRIASSIC
  - UTR Quartsino, Parson Bay
  - TRV Karmutsen
- DEVONIAN
  - DC Slicker

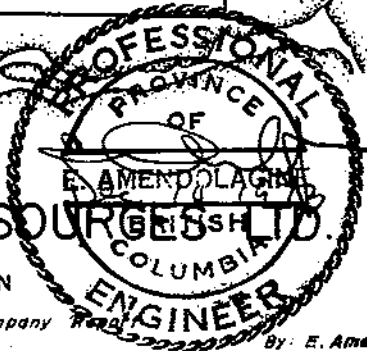
Department of  
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**ASSESSMENT REPORT**  
 NO. **4818** MAP #1

FROM: Geol. Map Of Vancouver Island By: J.E. Muller, 1971

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SCALE AS SHOWN

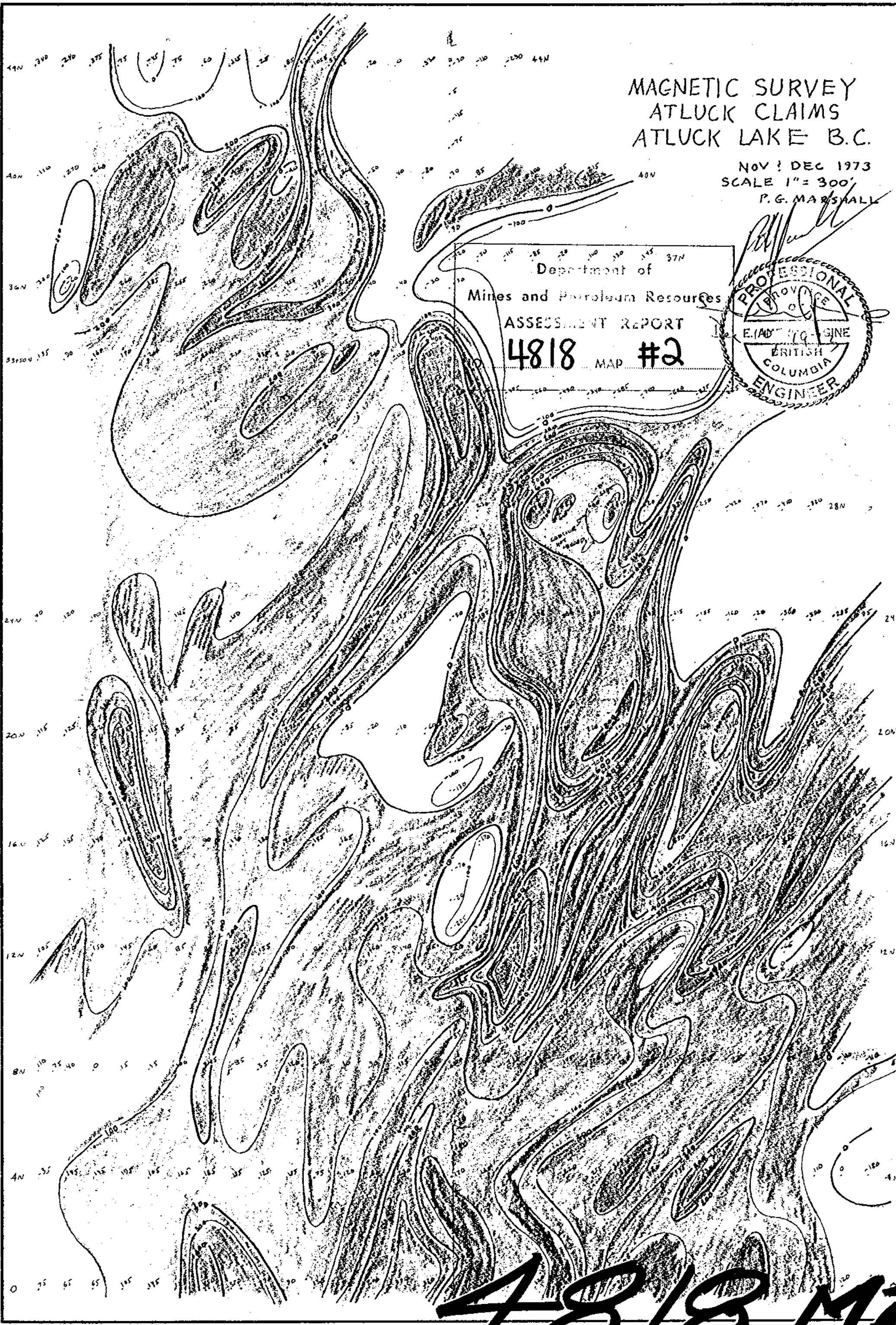
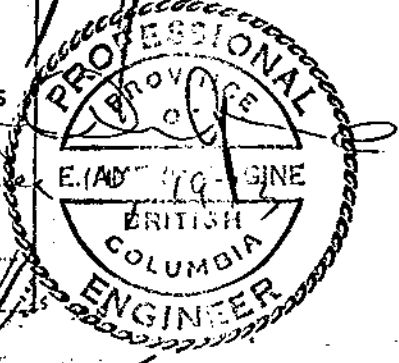
To Accompany Report No. 4818 By: E. Amendolagine P.Eng.



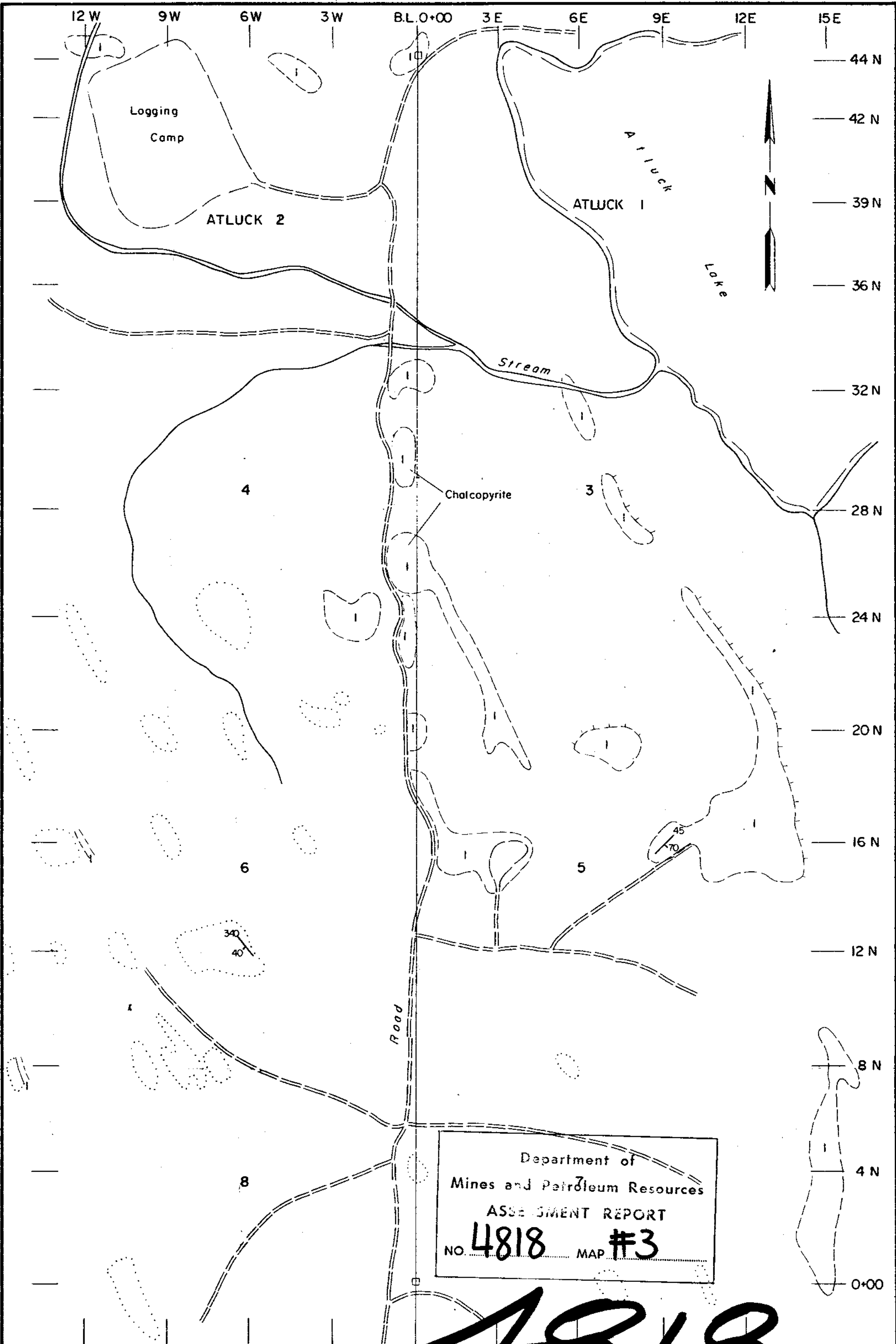
MAGNETIC SURVEY  
ATLUCK CLAIMS  
ATLUCK LAKE B.C.

NOV & DEC 1973  
SCALE 1" = 300'  
P.G. MARSHALL

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4818 MAP #2



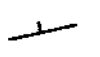


4818 M2

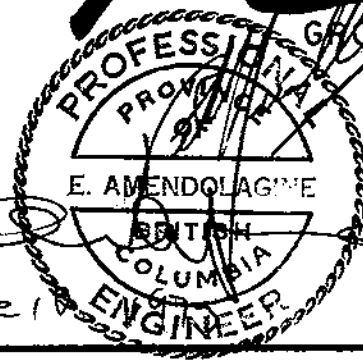


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**LEGEND**

-  BASALT
-  LIMESTONE
-  STRIKE & DIP

**4818**



GROUNDSTAR RESOURCES LTD.  
 ATLUCK CLAIMS  
**GEOLOGY**  
 SCALE: 1" = 300'

**M3**