

5224

104N/1W

GEOLOGICAL-GEOPHYSICAL REPORT
on the up-stream section of the
DRAIN LEASE - P.M.L. 1697
located near lower Otter Creek
at
11.5 air-miles E.N.E. of Atlin, B. C.
Lat. 59°-37.5'N, Long. 133°-24.4'W.
(N.T.S. Map 104N)
ATLIN MINING DIVISION
for
SURPRISE* RESOURCES LTD. (N.P.L.)
VANCOUVER, B.C.
by
W. M. Sharp, M.A.Sc., P.Eng. (B.C.)
between
June 4-12, 1974

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5224 MAP

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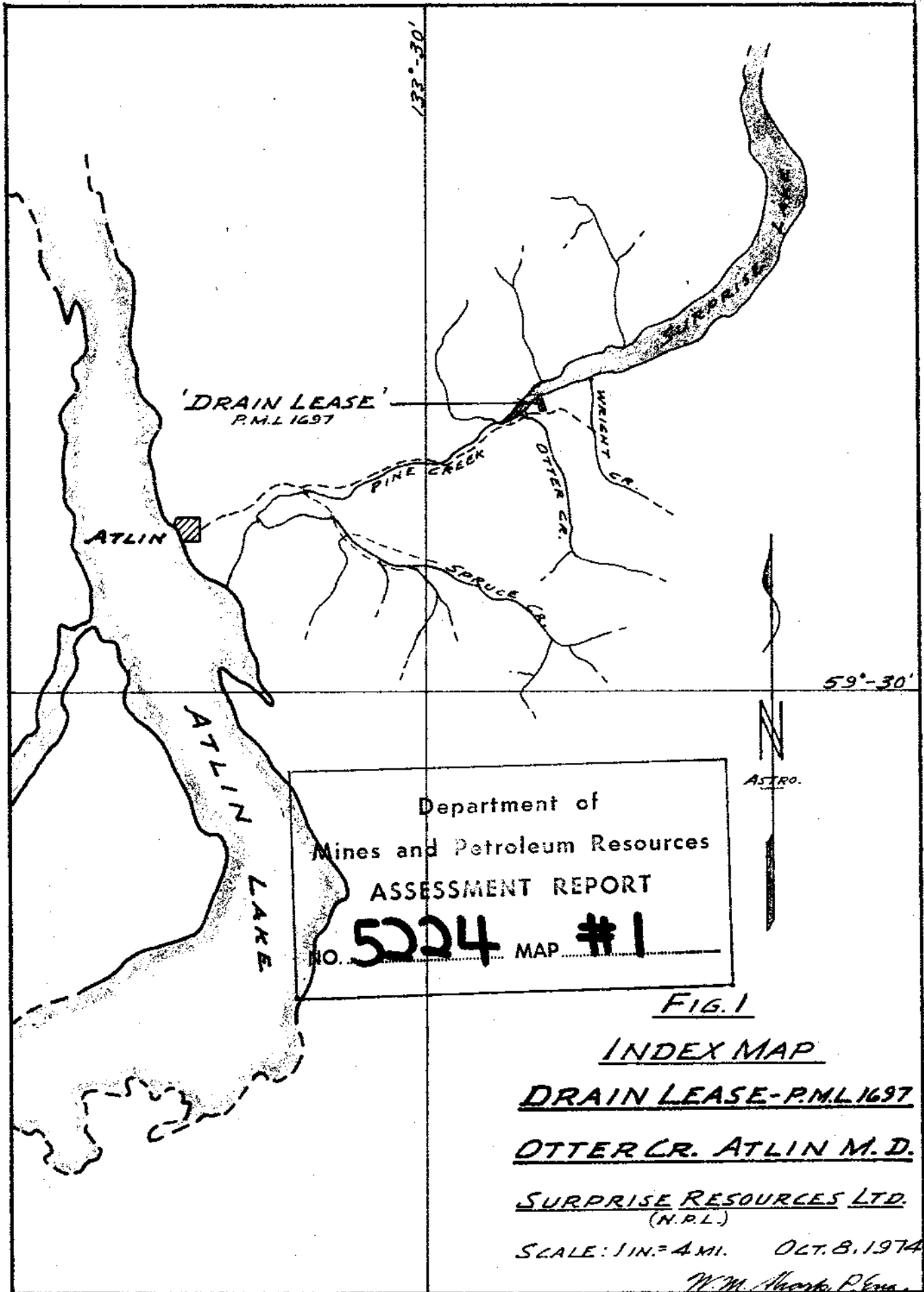
APPENDIX:

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Statutory Declaration

ILLUSTRATIONS

#1 FIG. 1, INDEX MAP, 1 in. = 4 mi.	(bound)
#2 DWG. NO. 0-2, WORKINGS, GEOLOGY, & MAGNETOMETER SURVEY, 1 in. = 100 ft.	(pocket)



'DRAIN LEASE'
P.M.L. 1697

ATLIN

ATLIN
LAKE

PINE CREEK

OTTER CR.

WRIGHT CR.

SPRUCE CR.

SURPRISE CR.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **5224** MAP **#1**

ASTRO.

FIG. 1

INDEX MAP

DRAIN LEASE-P.M.L.1697

OTTER CR. ATLIN M.D.

SURPRISE RESOURCES LTD.
(N.P.L.)

SCALE: 1 IN. = 4 MI. OCT. 8, 1974

W.M. Macph. P. Eng.

INTRODUCTION

The Drain Lease, P.M.L.1697, comprises the key claim of one group of contiguous placer claims located along the lower one-mile length of Otter Creek. The group covers both the old and modern creek channels.

During the 1920's and 1930's hydraulic mining operations were carried out on the Drain Lease; however, due to a combination of unfavourable physical factors together with a generally inadequate water supply, these were not successful in reaching bedrock. Subsequent underground mining operations carried out at three horizons below the floor of the existing pit yielded a significant quantity of coarse and fine placer gold which was associated with more-or-less magnetite-rich black sand.

Bedrock, comprising the floor of main pay-layer is believed to lie at some 50-60 feet below the floor of present pit.

PROPERTY LOCATION & ACCESS

The Drain Lease situates at 11.5 air-miles E.N.E. of Atlin, B. C., and is accessible via 12½ miles of good gravel road and about ½ mile of narrow dirt road leading to the down-stream end of the workings. The pit itself is easily accessible to vehicles and surface-mining equipment.

GENERAL GEOLOGY OF AREA

The area southeast of Surprise Lake, and which includes Otter and Wright Creeks, is underlain mainly by rocks of the Cache Creek Group. Locally, these are predominantly argillites, quartzites, related schists and slates, and subordinate greenstone. The latter, being generally softer and less resistant to erosion, constitute the optimum rock type as regards the development of 'pay-channels'.

The general bedrock surface is overlain by drift and fluvioglacial deposits up to 130 feet thick. Most of these are believed to be of Wisconsin or later age; however, some rusty weathered and cemented basal deposits, which are only rarely encountered, may be of Tertiary age.

DESCRIPTION OF FIELD & OFFICE WORK

A base-line on a general 520°E compass-bearing was established between the lower and upper ends of the pit (ref - Dwg. No. 0-2). This was chained, and picketed. Cross-section

stations were established at appropriate intervals - selected on the basis of the relative extent and accessibility of specific cross-sections of the pit. The cross-lines, at approximately right-angles to the base-line, were established by compass, and chained and flagged at about 20-foot horizontal intervals. Cross-line profiles were determined from an existing plan and/or local slope-angle measurements. Geological exposures on cross-lines 6+00 and 10+20 were mapped.

The writer used his own Jalander Model No. W.505 electronic flux-gate magnetometer to carry out a simple magnetic survey of the up-stream half of the pit floor. The survey was run as a means of prospecting for and, if possible, delineating concentrations of black sand below the floor of the pit. Such concentrations might be related to pay-streaks or pay-channels which could comprise specific targets for future prospect-drilling operations, or for a more refined magnetic survey by a professional geophysicist.

Initially, random traversing was carried out for the purpose of selecting the optimum instrument range. From this range-1, providing a sensitivity of about 10 gammas per scale division and a full-scale range of approximately 2500 gammas was employed.

Base-station control for the cross-line traversing was established by rapidly traversing the base-line in both directions and recording the average of the readings obtained at each cross-line station. Following this, the individual cross-lines were traversed and readings obtained at successive flagged stations. On completion of the survey the readings obtained on each cross-line were uniformly 'balanced' to the base-station control. This was done by adding or subtracting the difference between the readings obtained at each cross-line station via the successive base-control and cross-line traverses.

Subsequently, the adjusted readings were plotted on Dwg. No. 0-2, and magnetically 'high' and 'low' areas arbitrarily selected and delineated. With this, the outlines of the inferred bedrock channel, and bedrock level, as shown by previous maps and records, were also plotted.

RESULTS OF MAGNETIC SURVEY

The positive magnetic anomaly, except at its up-stream end, trends fairly conformably with the inferred 'bedrock channel' and 'bedrock-level'. However, its up-stream end shows an easterly divergence from both of the above features. The smaller positive anomaly follows a part of the east edge of the inferred bedrock channel, and shows an easterly divergence from it on its up-stream trend.

The results may indicate the presence of thus-far unexplored branches of the bedrock channel; however, it is more probable that they reflect erratic 'runs' of black sand within near-surface horizons of the general pay-section. Indirectly, they indicate the possible removal of deep-channel black-sands as a result of past drift-mining operations.

GEOLOGY OF DRAIN LEASE

No bedrock exposures occur within the area of the lease. However, the old churn-drill records indicate that it consists of mixed argillaceous-quartzitic rocks (schists?) with minor amounts of greenstone.

Typically, the unconsolidated deposits exposed in the walls of the pit, upward of the pit-floor, comprise slightly stratified boulder till with frequent silty and sandy layers and a variably thick top-section of rather massive boulder-till. Reportedly, the section between the pit-floor and bedrock comprises boulder till and mixed fluvio-glacial deposits - the latter comprising inter-banded sand, silt, and clay with a variable boulder content. Bedrock pay-channels comprise well-sorted gravels capped by a layer of hardpan. The main productive horizons have been termed the 'Moran', 'Strand', and 'Bedrock' levels.

CONCLUSIONS

Black-sand deposits, indicative of pay-layers and channels are magnetically-detectable. However, the writer believes that this might be better accomplished via a magnetometer of higher sensitivity than the one employed on this test-survey.



W. M. Sharp, P.Eng.

North Vancouver, B. C.
October 8, 1974

APPENDIX

STATEMENT OF QUALIFICATIONS

The writer respectfully submits that he is qualified, on the basis of his past field experience and involvement with practising geophysicists, to perform and interpret the type of simple, preliminary magnetic survey which he recently carried out on the Drain Lease for general prospecting purposes.

W. M. Sharp

W. M. Sharp, P.Eng.

North Vancouver, B. C.
October 8, 1974

Canada

Province of British Columbia

To Wit:

In the Matter of

Geophysical field exploration done on the Drain Lease (P.M.L. No. 1697) on lower Otter Creek in the Atlin Mining Division for Surprise* Resources Ltd. (N.P.L.) between June 4-12, 1974, with subsequent map and report preparation to October 12, 1974.

J, William M. Sharp, P.Eng. (B.C.) , of 3280 Chesterfield Avenue,
North Vancouver in the Province of British Columbia.

Do Solemnly Declare that the following is an accurate account of time and costs pertaining to the above field exploration and related office engineering work:

Consultant Fees, W.M. Sharp, P.Eng.:

<u>Field</u> , grid prep. & magnetometer survey, 2½ days @ \$135/day -----	\$337.50
<u>Field-travel</u> ½ x 2 days @ \$80/day -----	80.00
<u>Office</u> , map & report preparation, 2½ days @ \$100/day -----	250.00
	<u>\$667.50</u>

Fees, Local Consultant & Field Assistance

Allan Mattson, placer operator of Atlin, B.C., June 4-12, 1974 period, 1 day @ \$100/day -----	\$100.00
---	----------

Direct Expense, W.M. Sharp, P.Eng.

Long-dist. telephone, re travel and accomodation	\$12.45
C.P.C.N. Telecommunications to T.Connolly -----	5.17
C.P. Airlines, Vancouver-Whitehorse, ret. fare-	176.00
Avis Rent-A-Car, Whitehorse, 4 days @ \$12/day, plus 200mi. @ 12¢/mi. -----	72.00
Kootenay Hotel, Atlin @ ½ x \$126.40 -----	63.20
Atlin Esso Service, gasoline for rented car ---	3.25
Magnetometer, nominal useage charge -----	10.00
Audrey M. Owen, report typing -----	10.00
Western Technical Supply Co. Ltd., N. Van., B.C., Printing report maps, M/C -----	1.76
	<u>\$353.83</u>
TOTAL -----	\$1121.33

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 *NORTH VANCOUVER*

in the Province of British Columbia.

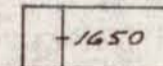

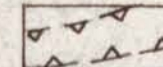
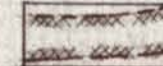
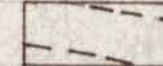
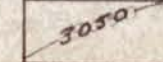
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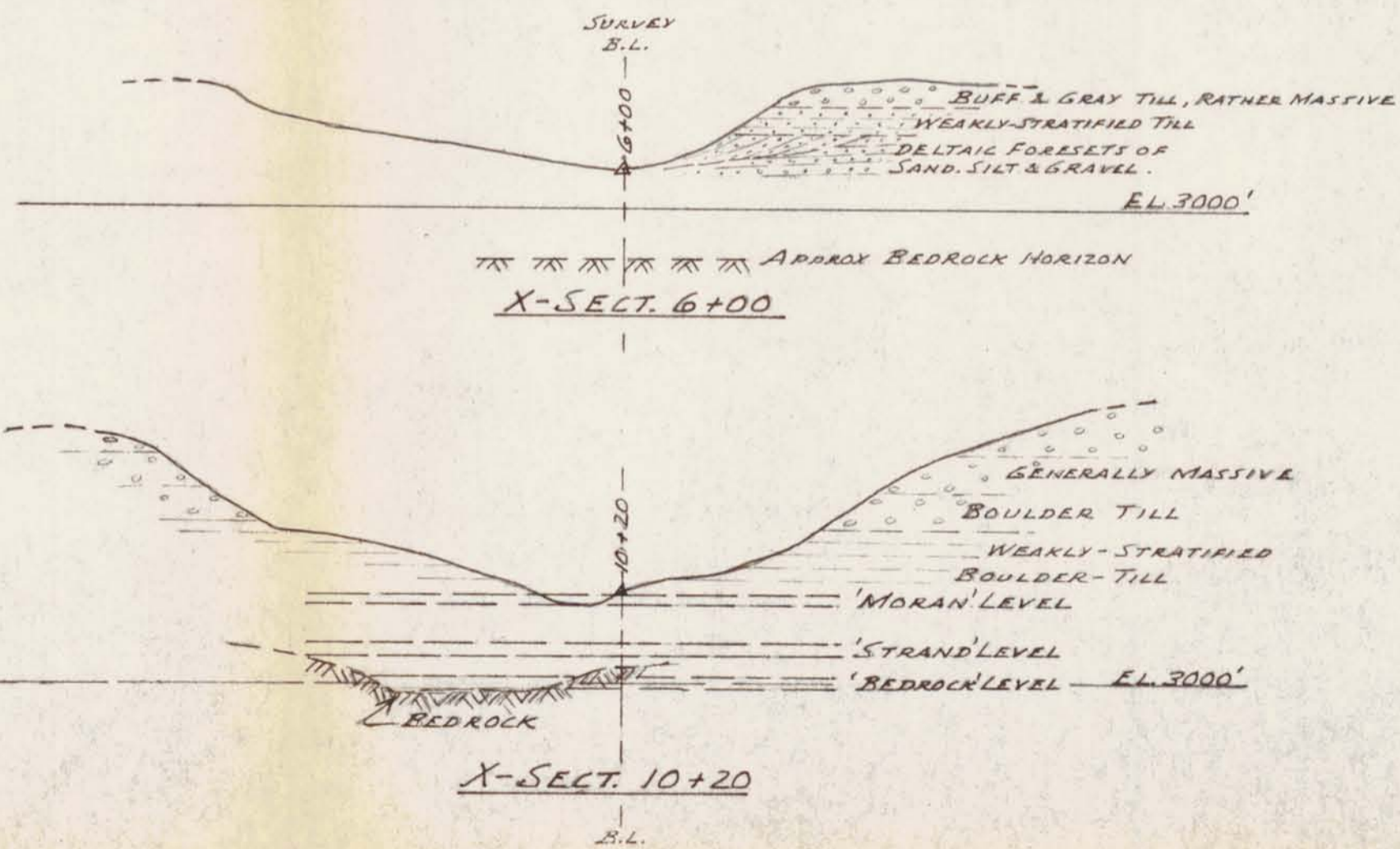
SURPRISE
LAKE - M.W.L. 2985'

I.P. DRAIN LEASE
P.M.L. No. 1697
746 No. 861843

- DRAIN LEASE -
P.M.L. No. 1697

LEGEND

-  MAGNETOMETER READING, IN GAMMAS, BALANCED TO BASE-LINE VALUES.
-  POSITIVE MAGNETIC ANOMALY : 'HIGH'
-  NEGATIVE MAGNETIC ANOMALY : 'LOW'
-  BEDROCK CHANNEL - INFERRED.
-  BEDROCK LEVEL OR 'DRIFT'
-  TOPOGRAPHIC CONTOUR, ELEVATION IN FEET



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Mines and Petroleum Resources
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5224
MAP 2

MAP TO ACCOMPANY GEOLOGICAL-GEOPHYSICAL REPORT ON THE
DRAIN LEASE (P.M.L. No. 1697) NEAR LOWER OTTER CREEK,
ATLIN MINING DIVISION, DATED OCTOBER 8, 1974.

W. M. Sharp, P. Eng.

W. M. SHARP, P. Eng.	CONSULTING GEOLOGICAL ENGINEER NORTH VANCOUVER, B.C.
SURPRISE RESOURCES LTD. (N.E.L.)	
DRAIN LEASE P.M.L. No. 1697	
LOWER OTTER CR. ATLIN MINING DIVISION	
WORKINGS, GEOLOGY, & MAGNETOMETER SURVEY	
FIELDWORK: JUNE 4-12, 1974	
Scale: 1" = 100'	Dwn. by W.M. SHARP, P. Eng. Revision: Date: OCT. 8, 1974
Dwg. No. 0-2	