

REPORT ON
GEOLOGIC MAPPING AND LINECUTTING PROGRAM
ON
LOCKHART NO. 1 CLAIM
OF
20 UNITS, RECORD NO. 1657
LOCATED IN THE NELSON MINING DIVISION

49° 30' North Latitude
116° 45' West Longitude
NTS 82-F-7, 10 West Half

FOR

POWER-CAN RESOURCES LTD.
#201-1401 LONSDALE AVENUE
NORTH VANCOUVER, B.C.
V7M 2H9

BY

U. MOWAT

JUNE 5, 1982

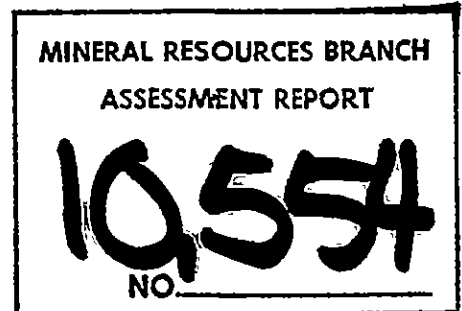


TABLE OF CONTENTS

	<u>PAGE</u>
1. INTRODUCTION	1
2. LOCATION	1
3. TOPOGRAPHY	1
4. ACCESS	1 & 2
5. HISTORY	2
6. REGIONAL GEOLOGY	2 - 6
Table 1: Table of Formations	4
Table 2: Stratigraphic Section	6
7. PROPERTY GEOLOGY	7 - 9
8. STRUCTURE	9 & 10
9. MINERALIZATION	10 & 11
10. ALTERATION	11
11. PHYSICAL WORK	12
12. PURPOSE	12
13. RESULTS	12
14. CONCLUSIONS	12
15. ITEMIZED COSTS	i
16. AUTHOR'S QUALIFICATIONS	ii
17. MAPS	
a) Location Map Lockhart No. 1 Claim	in Pocket #1
b) Detailed Location Map Lockhart No. 1	
c) General Geology Lockhart No. 1 Location	
d) Plan Showing Extent of Linecutting and Mapping on Lockhart No. 1 Claim	
e) Detailed Geology and Grid Map of Lockhart No. 1 Claim	in Pocket #2

INTRODUCTION

A program of geological mapping and linecutting was initiated on the Lockhart No. 1 Claim of 20 units on May 1, 1982. The program employed five men. Two hundred and fifty hectares were mapped and covered by a flagged grid. A baseline of 1,350 meters was cut and 16,050 meters were flagged.

LOCATION

The Lockhart No. 1 Claim is located on the east side of Kootenay Lake, 48 kilometers north of Creston, B. C. The legal claim post of Lockhart No. 1 is located 1,000 meters due east of Lockhart Beach Provincial Park, on the north side of Lockhart Creek. The nearest town to the property is Boswell, located 3 kilometers to the south.

TOPOGRAPHY

The property lies in the Purcell Mountain Range. Elevation of the property rises from 671 meters at the western edge over a distance of 2,500 meters to 1,769 meters at the eastern edge. Generally, topography is extremely rugged, with numerous rock bluff to cliff faces and talus slopes. It is not uncommon to find slopes of 30 - 50° on the property.

ACCESS

The property is partially accessible from Highway 3A by an old logging road which is very overgrown in most places with scrub cedar and

tag alder. The road is also washed out in spots. The logging road leaves Highway 3A from a point immediately behind the Heidelberg Inn.

HISTORY

The Lockhart No. 1 Claim, record number 1657, consisting of 20 units, in the Nelson Mining Division, was staked on May 9 and 10, 1980 by A. O. Birkeland, P. Eng. as agent for W. V. Williams. The claims were recorded on May 13, 1980 in Vancouver and were subsequently transferred to Power-Can Resources Ltd.

The main showing of the Lockhart No. 1 Claim was located several years ago by Lawrence Johnson who found the galena mineralization while building a logging road with a cat (personal communication). Although there are no written records of prospecting activity on the Lockhart No. 1 Claim, numerous claim posts give evidence of frequent staking and re-staking, starting in 1947. At various times, the Lockhart No. 1 has been called Heidi MR #2, Lockhart, Kevin, D87358, C87358, E87358, and F87358.

The first assessment work performed on the Lockhart No. 1 Claim was done by Pamicon Developments Ltd. from October 29 - November 30, 1980 (Assessment Report No. 8889). The work program consisted of prospecting, grid preparation, geochemical sampling and geological mapping in the vicinity of the main showing.

REGIONAL GEOLOGY

The Lockhart No. 1 Claim is underlain by the Horsethief Creek Series

of Windermere Age (see Table 1). The Horsethief Creek Series conformably overlays the Toby Formation and is conformably overlain by the Hamill Series. The general trend of the Horsethief Creek Series is in a north-east direction and shows evidence of much folding. Granitic intrusives of Mesozoic? age are known to intrude the Horsethief Creek Series to the northeast and the south of the Lockhart No. 1 Claim.

In the type locality, the Horsethief Creek Series has been described as being made up of

"...grey, green and purplish slate with several lenticular beds of coarse quartzite and pebble conglomerate and numerous thin interbeds of blue-grey, crystalline, and mostly non-magnesian limestone..."¹

The Horsethief Creek Series northeast of Kootenay Lake resembles that of the type section. However, the argillite is generally slaty, dark grey to black, occasionally greenish grey, finely laminated to uniform and occasionally sandy, weathering with a rust or buff colour.

Blue grey crystalline, generally non-magnesian limestone occurs as beds and lenses but is generally not common.

A small part of the Horsethief Creek Series is composed of white, siliceous massive beds of quartzite. Occasionally, some beds are limy and contain fragments of slate or limy material.

Beds of conglomerate composed of rounded pebbles or cobbles of quartz

TABLE I
TABLE OF FORMATIONS ²

Cenozoic	Recent Pleistocene	
		McGregor volcanic necks, dykes and sills
Mesozoic and/or Cenozoic	Post-Triassic	Lamprophyre dykes Granitic intrusives
Mesozoic	Triassic	Slocan Series Kaslo Series
Mesozoic and Paleozoic	Triassic and Carboniferous	Milford Group
Paleozoic	Cambrian	Eager Formation Cranbrook Formation
Proterozoic (Late Precambrian)	Windermere	Greenstone Formation Lardeau Series Badshot Formation Hamill Series HORSETHIEF CREEK SERIES Irene Volcanic Formation Toby Formation
	UNCONFORMITY	
	Upper Purcell	Purcell Intrusives Mount Nelson Formation Dutch Creek Formation
	Lower Purcell	Kitchener-Siyeh Formation Creston Formation Aldridge Formation

² Rice, H.M.A., Nelson Map Area, East Half, British Columbia, Geological Survey, Canada, Memoir 228, 1941, p. 17.

Beds of conglomerate composed of rounded pebbles or cobbles of quartz or quartzite occur throughout the Horsethief Creek Series. Size of fragments ranges from 2.5 - 15 cm. and are set in a gritty, siliceous matrix. Angular fragments of feldspar occur throughout the conglomerates and grow up to 2.5 cm. across. The finer conglomerate beds contain small, pea-sized pebbles of blue quartz that are quite characteristic. Most conglomerates are of the siliceous variety although some beds are composed of angular blocks of sandy, magnesian limestone in a cement of similar composition. Minor beds of blue-grey limestone conglomerate occur occasionally.

TABLE II
STRATIGRAPHIC SECTION ³

HAMILL SERIES

CONFORMITY

Quartz-mica schist, spotted schist, and altered sandy argillite;
minor bed of siliceous quartzite
Massive, grey to greenish grey quartzite and conglomerate, cobbles
up to 15 cm. in diameter in a sandy matrix; some interbedded
argillite
Grey and greenish-grey, laminated argillite with some beds of argillaceous
quartzite
Massive, coarse-grained quartzite with some beds of fine pebble conglom-
erate
Grey-green, laminated, rusty weathering, sandy and slaty argillite;
minor 20 cm. beds of grey and white quartzite near the top
Blue-grey limestone, thin bedded
Black, rusty weathering, and grey-green, slaty argillite, interbedded
with quartzite
Massive, light-coloured quartzite containing inclusions of black slate
and limy pods; occasionally interbeds of limestone conglomerate
Black, rusty weathering, slaty argillite
Blue-grey limestone and limestone conglomerate
Dark grey, non-limy, slaty argillite
Light blue-grey limestone and fine limestone conglomerate
Dark weathering, dark blue-grey, sandy limestone
Black, non-limy, slaty argillite and grey, siliceous quartzite with
occasional limy beds
Thin-bedded, blue-grey and light buff-grey limestone; some 30 - 37.5 c.m.
beds of limestone conglomerate with 30 cm. boulders near the top
Grey and green, slaty argillite with occasional beds of grey, dark
weathering thin-bedded limestone near the top
Grey and green, thin-bedded, sandy limestone
Grey-green, non-limy, slaty argillite
Buff weathering, grey, thin-bedded, sandy limestone
Green and grey, laminated argillite; considerable folding
Buff weathering conglomerate; large blocks of sandy, dolomitic limestone
in a cement of similar composition
Green, slaty argillite and sandy argillite

CONFORMITY

TOBY FORMATION

³ Rice, H.M.A., Nelson Map Area, East Half, British Columbia,
Geological Survey, Canada, Memoir 228, 1941, P. 17.

PROPERTY GEOLOGY

The Lockhart No. 1 Claim is actually underlain by the following rock types:

- 1) The most common outcrop is that of a dark grey, steel-like, phyllite which occasionally weathers to a deep maroon colour due to the leaching out of pyrite. Although pyrite is not common on the western portion of the claims, euhedral cubes of 2.5 cm. are found on the eastern portion of the claims. Pyrite is also found as stringers of 5 mm. euhedral crystals along bedding planes. Irregular voids (generally roundish) have been noted from various portions of the property, but mainly on the lower western side. It is believed that an amorphous conglomeration of pyrite, gypsum? or carbonate? has weathered out of these voids leaving caverns up to 1 meter deep and .6 meters wide in the rock. The leaching of the former material has produced a yellow-white coating resembling in appearance and smell that of deposits associated with hot springs.
- 2) Greenish grey, highly lustrous phyllite: This rock type is generally found when the dark grey phyllite comes into contact with another rock type. The author believes that this variety of phyllite represents a shear zone that has undergone the same regional metamorphism which has produced the dark grey, steely phyllite. No mineralization was seen in this unit. It displays gradational variations from being very lustrous to a sandy greenish lustrous phyllite in which the mica flakes are not as large as that of the lustrous phyllite. This may be a sheared sandstone as it seems to grade into the buff sandstone units on the property.

- 3) SANDSTONE/QUARTZITE: There are several varieties of sandstone/quartzite:
- a) The most common variety is a buff, fine grained sandstone/quartzite with a dominantly siliceous matrix. Occasionally, the matrix contains a little lime or mica. Mica appears when the sandstone/quartzite unit approaches the lustrous green grey phyllite. Minor pyrite clots of up to 4 mm. were noted occasionally. Another variation of this unit is the bedding? or what appears to be possibly bedding. In most cases the sandstone/quartzite has a bedding thickness of 15 cm. to 30 cm. It also is very massive in a few places with no apparent bedding whatsoever. The thinner bedded sandstone/quartzite appears to overlie the massive unit.
 - b) A rare occurrence of a laminated dark grey to medium grey, fine grained sandstone with a siliceous matrix and much magnetite (7%) was noted on the southwest corner of the claims. No stratigraphic relationships to the other units were discernible.
 - c) Sandstone/quartzite as in unit (a) with .5 to 1 cm. subangular blue quartz fragments. This unit possibly overlies unit (a).
 - d) Sandstone/quartzite with white rounded to subrounded quartzite boulders, scattered sporadically throughout. This unit is gradational to unit (e).
- 4) CONGLOMERATE: This unit is composed of well sorted, well rounded white quartzite boulders ranging in size from 3 cm. to 30 cm. There is very little interstitial matrix. Bonding consists of a light contact cement at best of silica but mainly mica or thin smears of lustrous green phyllite. A brilliant green mica has been noted in numerous conglomerate

outcrops which may be a green muscovite or possibly fuchsite? Where the conglomerate is in contact with the greenish-grey, highly lustrous phyllite (shear phyllite) the quartzite boulders have been stretched to resemble French loaves of bread and have been known to be elongated to 42 cm. Mica in the conglomerate is particularly well-developed under these circumstances. The conglomerate has in one locale on the property formed a pebble dyke in the buff, fine grained sandstone. The dyke trends N 20° E and is vertical.

- 5) Dark green-grey talcy phyllite: The relationship of this unit to the other rock types is not known although it is suspected that this unit is a change in grade of metamorphism. This unit only outcrops in the central portion of the claim.
- 6) Black Basalt Dyke: The dyke trends N 10° E and dips 75° northwest. The dyke has a minor amount of 5 mm. euhedral pyrite crystals disseminated throughout. It also has light grey chill margins that are 2.5 cm. wide and are sheared. The dyke itself is unsheared and is 25 cm. wide.
- 7) Limestone: Only one outcrop of limestone has been located to date. It occurs in the northwest portion of the property and appears to be a fault controlled block. It is a finely laminated dark grey and white banded argillaceous limestone, striking N 45° W and dipping 20° to the southwest. It is cut by quartz and carbonate veinlets.

STRUCTURE

The general structure of the area is that of a broad, northerly trending anticline. In portions of the area, large north to northeast trending

faults cut the anticlinal structures. Numerous granitic bodies have intruded the area surrounding the claims.

The structure on the property is fairly complex. Generally beds dip in a westerly direction and are folded and faulted, making the stratigraphy a fairly complex system. The major structures such as large quartz veins, folds, faults and joints trend from N 10° W to N 10° E. A subsidiary set of joints predominantly trends 090°. Folds range from being tight isoclinal to recumbent, and in some cases appear to be nappes.

Faults on the property appear to have more of a vertical displacement than any horizontal movement.

All rocks have been regionally metamorphosed, although the sandstone units least show the effects. Evidence of this regional metamorphism is noted from the phyllitic rocks, schistosity in certain units, as well as the elongation of the white quartzite boulders in some of the conglomerate outcrops.

MINERALIZATION

1) Upper Showing

The upper showing was not exposed at the time of this examination.

The showing had been covered by sloughing overburden and .3 m. of snow.

The upper showing is hosted, according to past reports, by the elongated white quartzite boulder conglomerate and is exposed by a road cut.

Some broken pieces of massive galena with cerussite alteration were noted in the overburden.

2) Lower Showing

The lower showing was also covered by overburden. Past reports indicate that this mineralization consisted of galena, sphalerite as small as blebs in a 5 cm. wide quartz veinlet.

3) Other Mineralization

Throughout the property numerous quartz veinlets and veins bearing fine-grained galena and occasionally pyrite were noted. It would appear that the galena mineralization occurs in structurally controlled quartz veins and is hosted by the white quartzite boulder conglomerate unit.

ALTERATION

Alteration on the property is restricted to massive amounts of quartz veining and minor amounts of sericite/muscovite development in the white quartzite boulder conglomerate. The quartz veins are erratic in nature, varying in size from 2 cm. to 7 meters in width. Pinching and swelling in the veins are very common features. Quartz veins shatter upon impact and are highly fractured, presumably from the structural deformation of the area (folding and faulting). No continuous veining has been found. Most of the larger veins have a bearing of N 10° W - N 10° E.

Pyrite has been noted throughout the property, but is definitely more prominent on the more easterly portions. Minor pyrite has been found in the quartz veins but the most common occurrence of pyrite is in the dark grey, steely phyllite where euhedral cubes of 2.5 cm. occur. In general pyrite content and size increases towards the eastern side of the property.

PHYSICAL WORK

Physical work on the property consisted of grid preparation on the Lockhart No. 1 Claim. Work was carried out from May 2 - May 13, 1982. A 1,350 meter baseline 1 meter wide was cut by power saw. Sixteen thousand and fifty meters were flagged. The flagged lines totalling 10 are located every 150 meters and run east-west. These lines are marked with stations every 30 meters.

PURPOSE

The program of geological mapping of the Lockhart No. 1 Claim was undertaken to explore the occurrence of galena mineralization. A grid was established in preparation for future work.

RESULTS

The mapping program has indicated that galena mineralization is structurally controlled in quartz veins and is associated or hosted by the white quartzite boulder conglomerate.

CONCLUSIONS

It is intended that further work will be performed on the Lockhart No. 1 Claim, consisting of additional line cutting, additional mapping and eventually soil sampling and geophysics.

Respectfully submitted,

U. Mowat

U. Mowat

Power-Can Resources Ltd.

#201 - 1401 Lonsdale Avenue

North Vancouver, B. C.

V7M 2H9

June 14, 1982

ITEMIZED COSTS

Airfare		222.50	
Taxi		15.00	
Limousine		6.00	
Truck Rental			
2 weeks @ \$240.00/week	480.00		
2 days at \$48.00/day	96.00		
6% Tax	34.56		
Insurance @ \$60.00/month	<u>30.00</u>	640.56	
Geologist			
16 days @ \$100.00/day		1,600.00	
Assistant			
82 hours @ \$10.00/hour		820.00	
Linecutters			
2 men @ \$200.00/man/day for 12 days	4,800.00		
Equipment and truck @ \$100.00/day	1,200.00		
Contingency @ 10%	<u>600.00</u>	6,600.00	
Accommodation			
Room #3 13 days @ \$13.88/day	180.44		
6% Tax	10.82		
Room #4 13 days @ \$13.88/day	180.44		
6% Tax	10.82		
Room #5 13 days @ \$13.88/day	180.44		
6% Tax	<u>10.82</u>	573.78	
Food			
April 28	20.15		
April 29	51.85		
April 30	27.90		
May 1	38.12		
May 2	61.04		
May 3	60.84		
May 4	75.00		
May 5	72.68		
May 6	69.76		
May 7	70.23		
May 8	65.80		
May 9	60.12		
May 10	57.40		
May 11	72.36		
May 12	69.80		
May 13	<u>73.41</u>	946.46	
Supplies			<u>3.57</u>
TOTAL			\$ 11,500.67

AUTHOR'S QUALIFICATIONS

I, Ursula G. Mowat, do hereby certify that:

- 1) I am a geology graduate of U.B.C. having graduated in 1969 with a B. Sc. in geology.
- 2) I have practiced my profession as a geologist for 11 (eleven) years in all phases of geologic exploration (oil and gas, coal and minerals).
- 3) I have no interest or holdings in Power-Can Resources Ltd.

Dated in Vancouver, B. C. this 3rd (third) day of June 1982.

Respectfully submitted,

Ursula G. Mowat

Ursula G. Mowat

Vice President Exploration

Power-Can Resources Ltd.

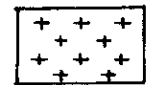
#201 - 1401 Lonsdale Avenue

North Vancouver, B. C.

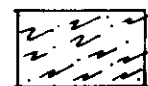
V7M 2H9

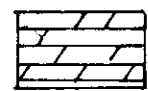
UGM/spw

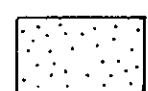
Post - Triassic

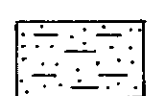
 Chiefly granite, granodiorite, and quartz diorite

Windermere

 **Lordeau Series**
 Micaceous and chloritic schists; quartzite and limestone; paragneiss

 **Badshot Formation:** magnesian limestone


 **Hamill Series**
 Grey, green and white, silicious quartzite

 **Horsethief Creek Series**
 Green, argillaceous quartzite; blue-grey limestone, arkose, pebble conglomerate

 **Toby Formation:** conglomerate


Purcell

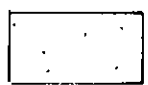
Upper Purcell

 **Mount Nelson Formation:** laminated argillite, magnesian limestone, quartzite

 **Dutch Creek Formation:** laminated argillite, magnesian limestone, quartzite

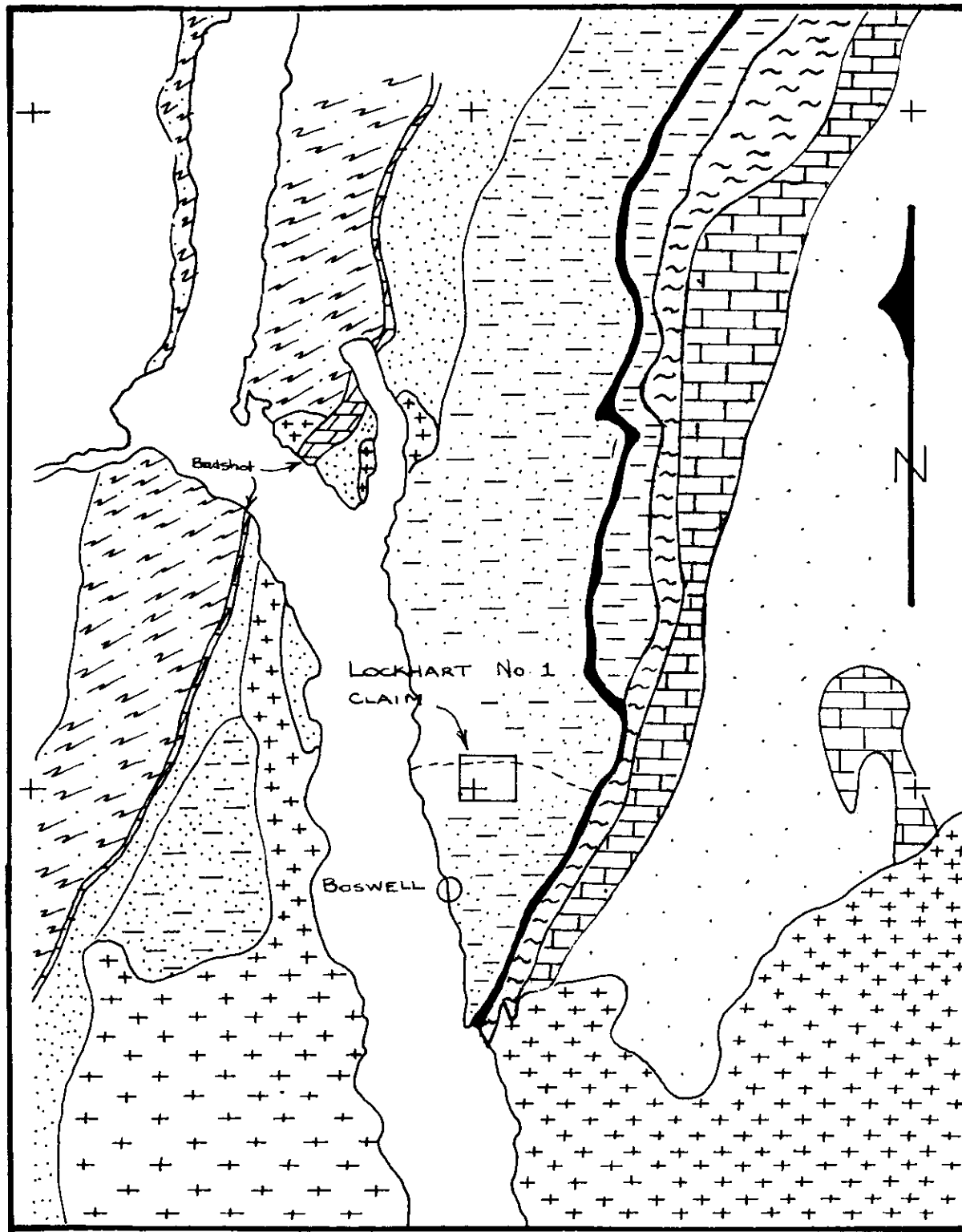
Lower Purcell

 **Kitchener-Siyeh Formation:** chiefly vari-coloured magnesian limestone and argillite; calcareous quartzite

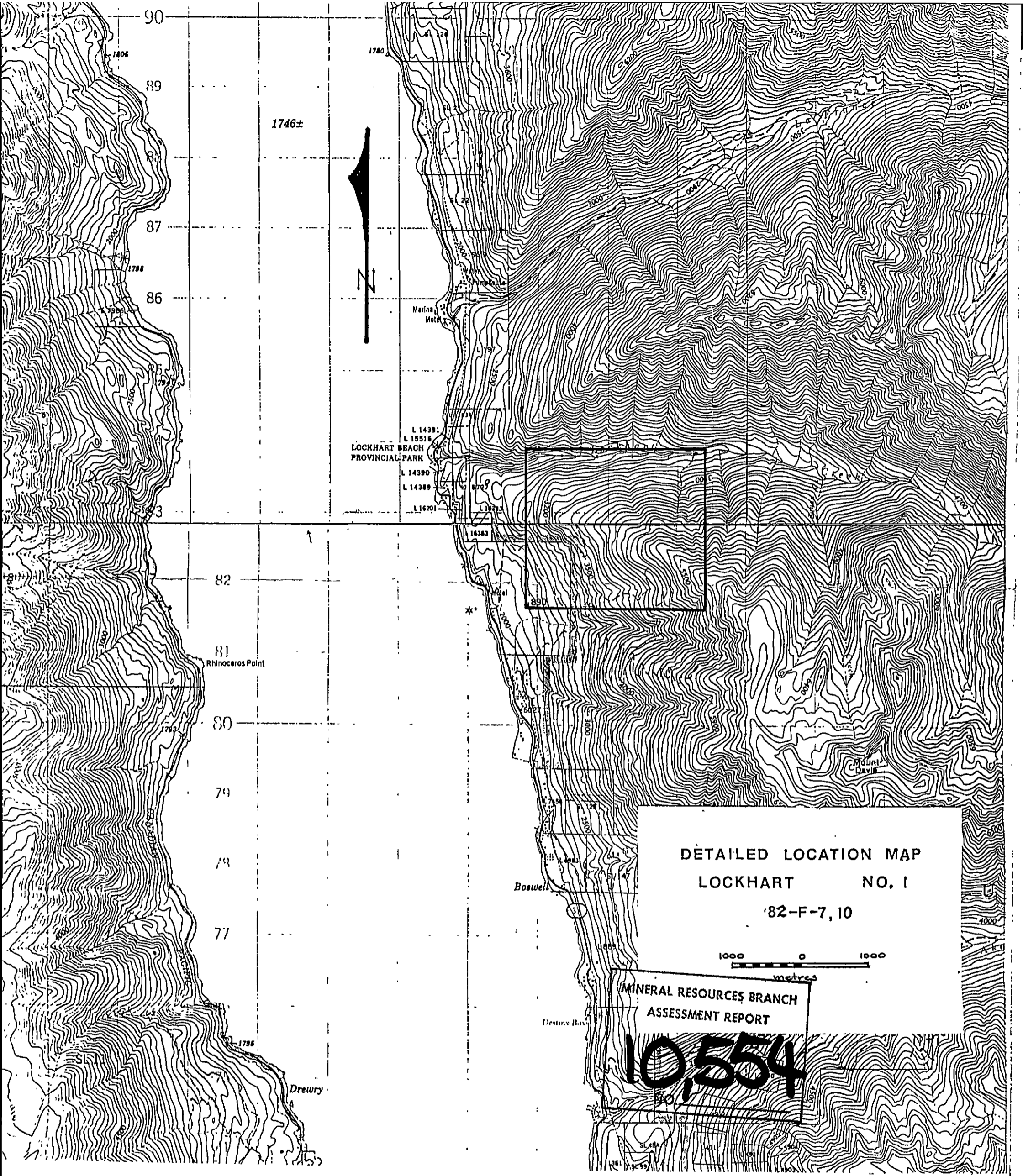
 **Creston Formation:** green, purple and grey, argillaceous quartzite; some argillite

49° 45'

49° 30'



GENERAL GEOLOGY
 LOCKHART NO. I CLAIM LOCATION



1746±



L 14391
L 15516
LOCKHART BEACH
PROVINCIAL PARK
L 14390
L 14389
L 16201

82

81
Rhinoceros Point

80

79

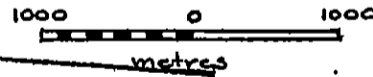
78

77

1796

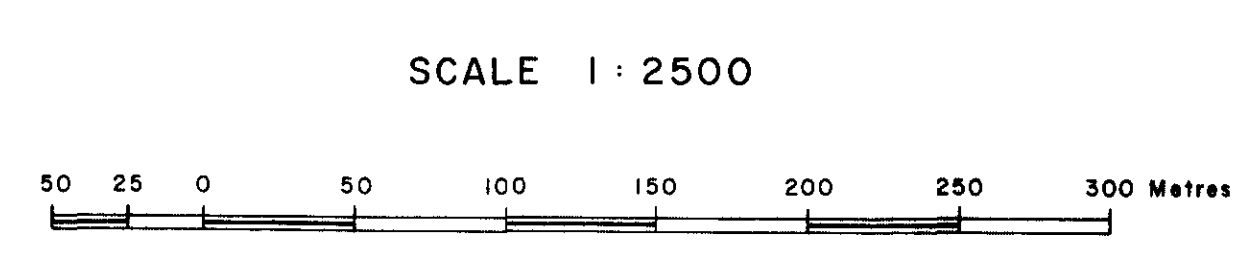
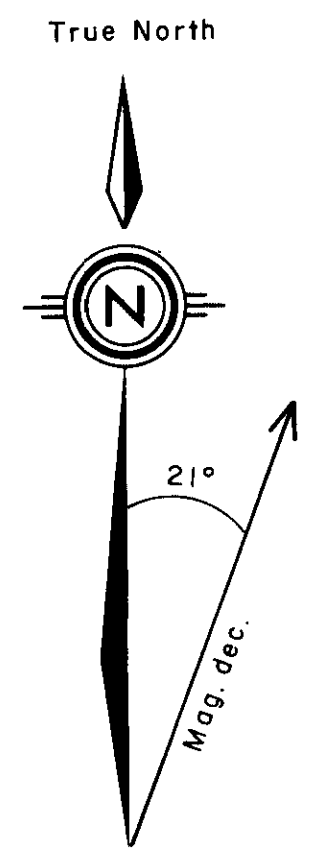
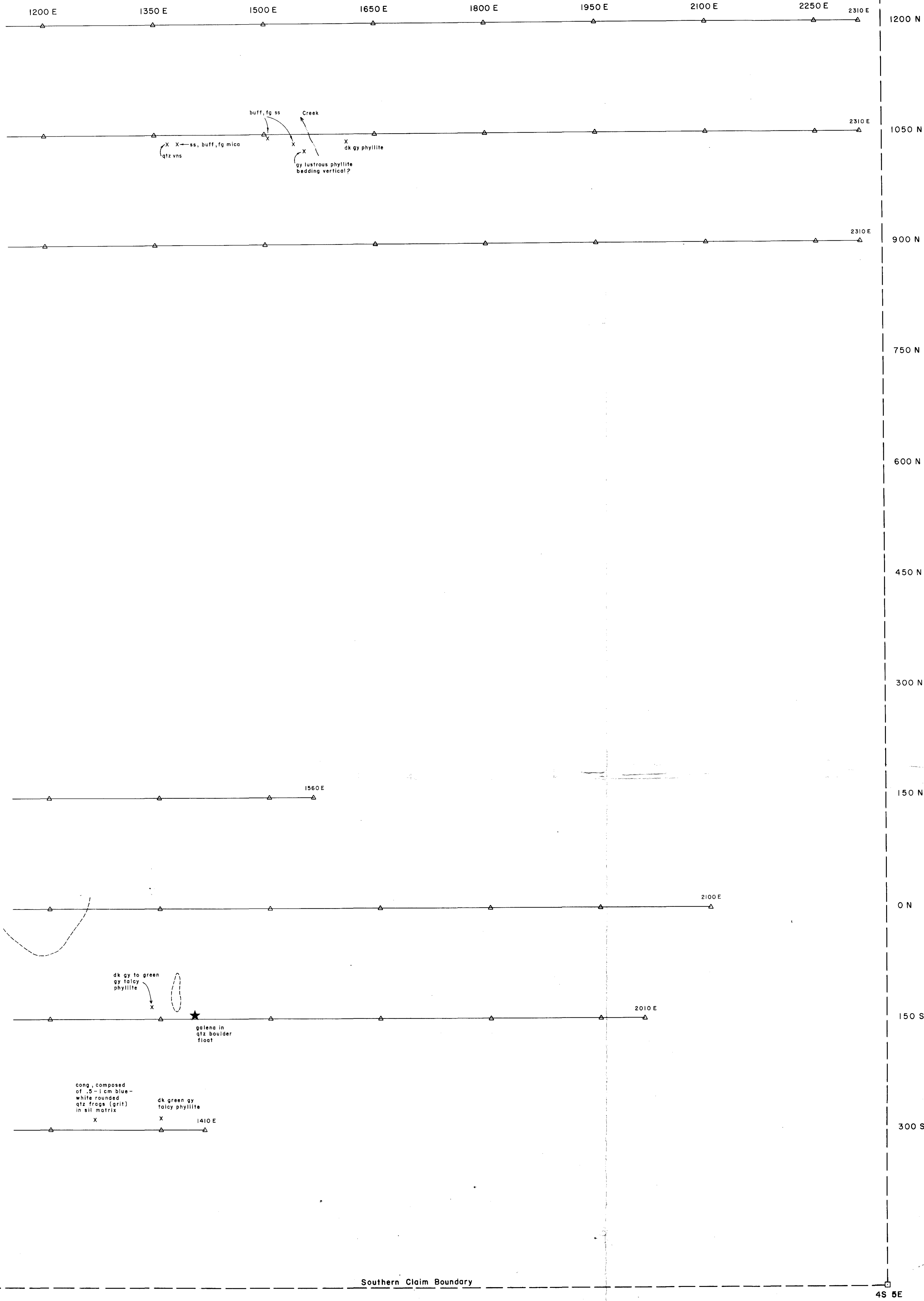
Drewry

DETAILED LOCATION MAP
LOCKHART NO. 1
'82-F-7, 10



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

10,554



- LEGEND :
- Creeks
 - Main Road
 - Skid Trail
 - Outcrop
 - Claim Post
 - Mineralization
 - Base line, Flagged line

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10554
NO.

INDEX

1	2
---	---

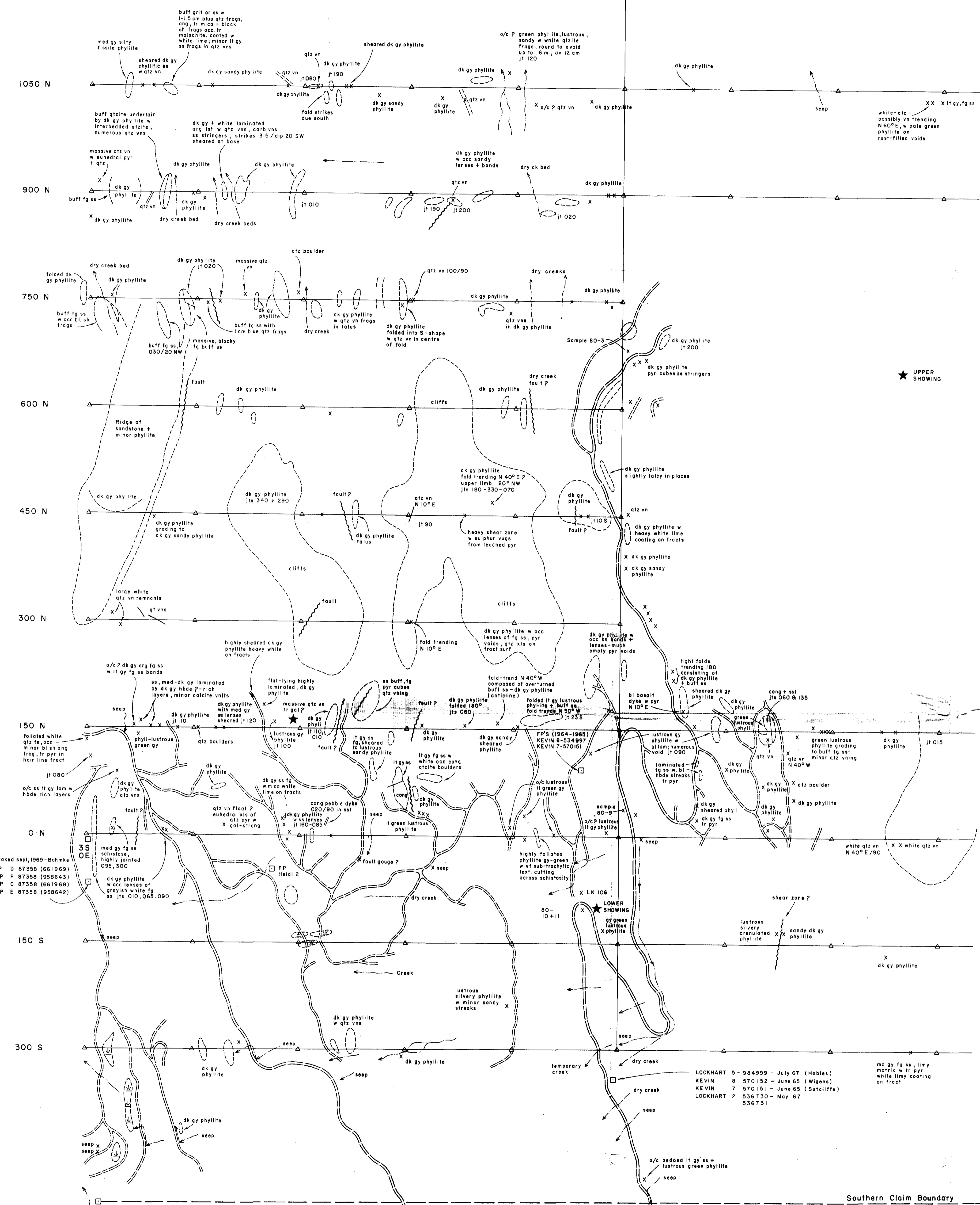
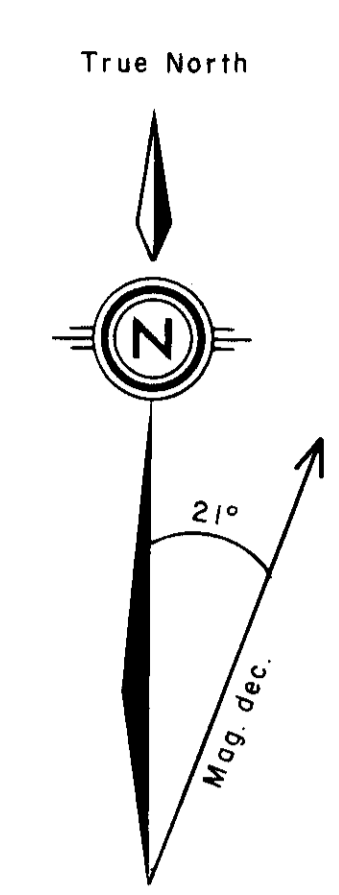
POWER-CAN RESOURCES LTD.

DETAILED GEOLOGY & GRID MAP
OF LOCKHART No.1 CLAIM

MAP 2

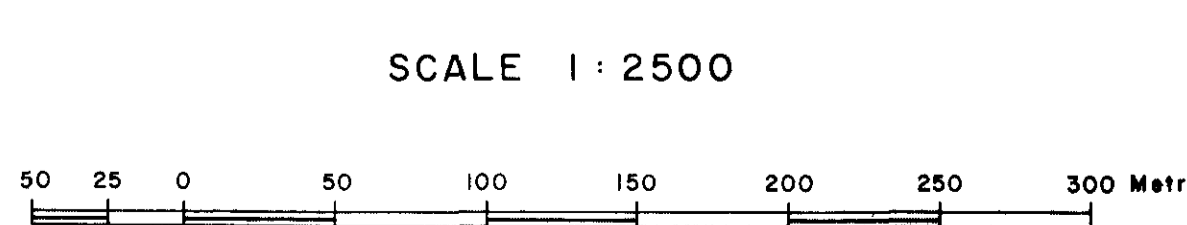
DATE :	JUNE, 1982	CHAIN & COMPASS SURVEY
SCALE :	1 : 2500	
DRAWN BY :	EDCO LTD.	

BASE LINE
 OE 150 E 300 E 450 E 600 E 750 E 900 E 1050 E 1200 E



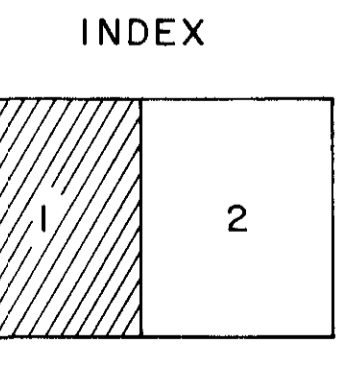
staked sept, 1969 - Bohmke
 IP D 87358 (661969)
 FP F 87358 (958643)
 IP C 87358 (661969)
 FP E 87358 (958642)

LOCKHART 5-984999 - July 67 (Hobbes)
 KEVIN 8 570152 - June 65 (Wiggins)
 KEVIN 7 570151 - June 65 (Sutcliffe)
 LOCKHART ? 536730 - May 67
 536731



SCALE 1 : 2500

- LEGEND :
- Creeks
 - Main Road
 - Skid Trail
 - Outcrop
 - Claim Post
 - Mineralization
 - Base line, Flagged line



MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
10,554
 101

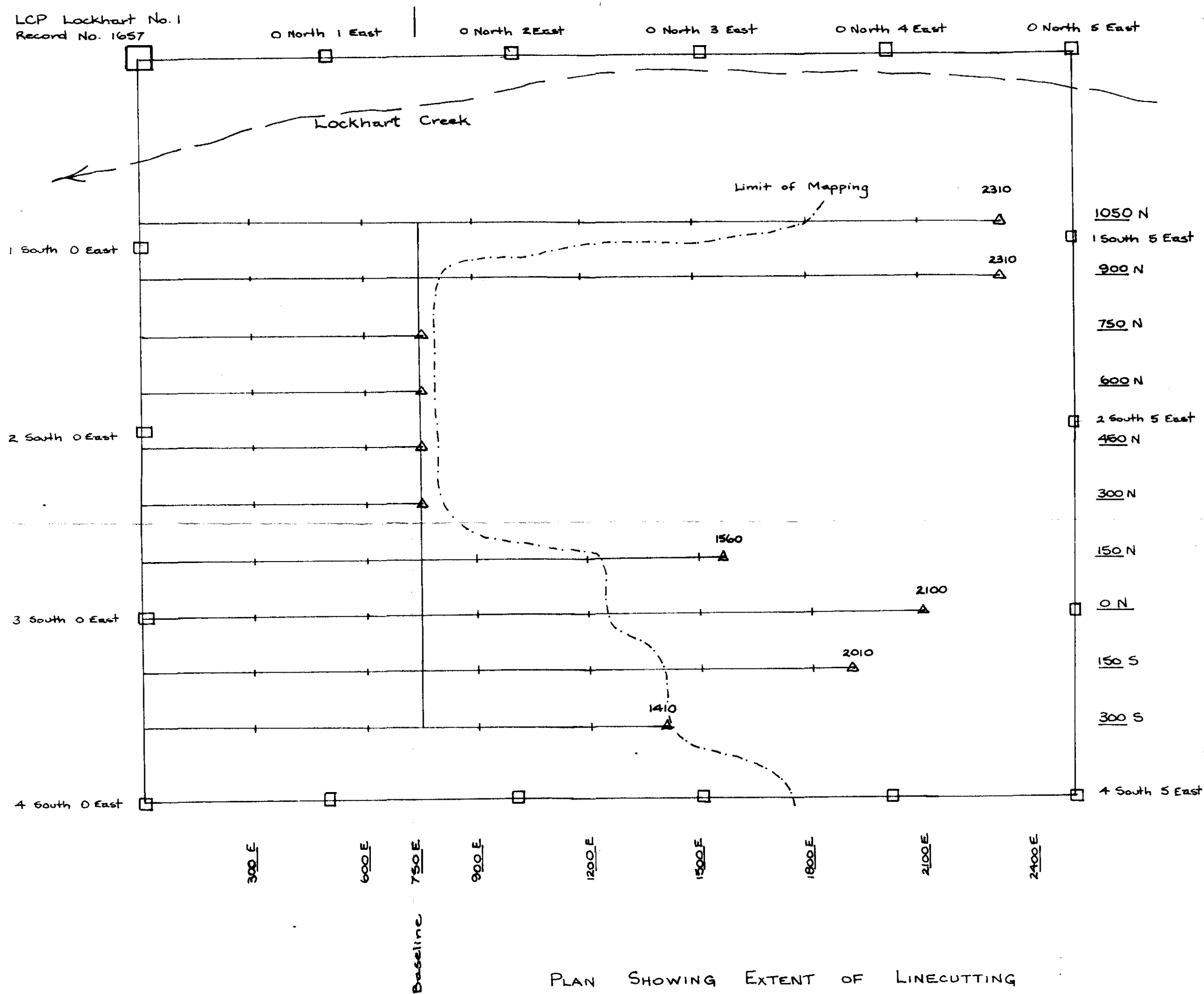
POWER-CAN RESOURCES LTD.

DETAILED GEOLOGY & GRID MAP
 OF LOCKHART No. 1 CLAIM

MAP I

DATE :	JUNE, 1982	CHAIN & COMPASS SURVEY
SCALE :	1 : 2500	
DRAWN BY :	EDCO LTD.	

LCP Lockhart No. 1
Record No. 1657



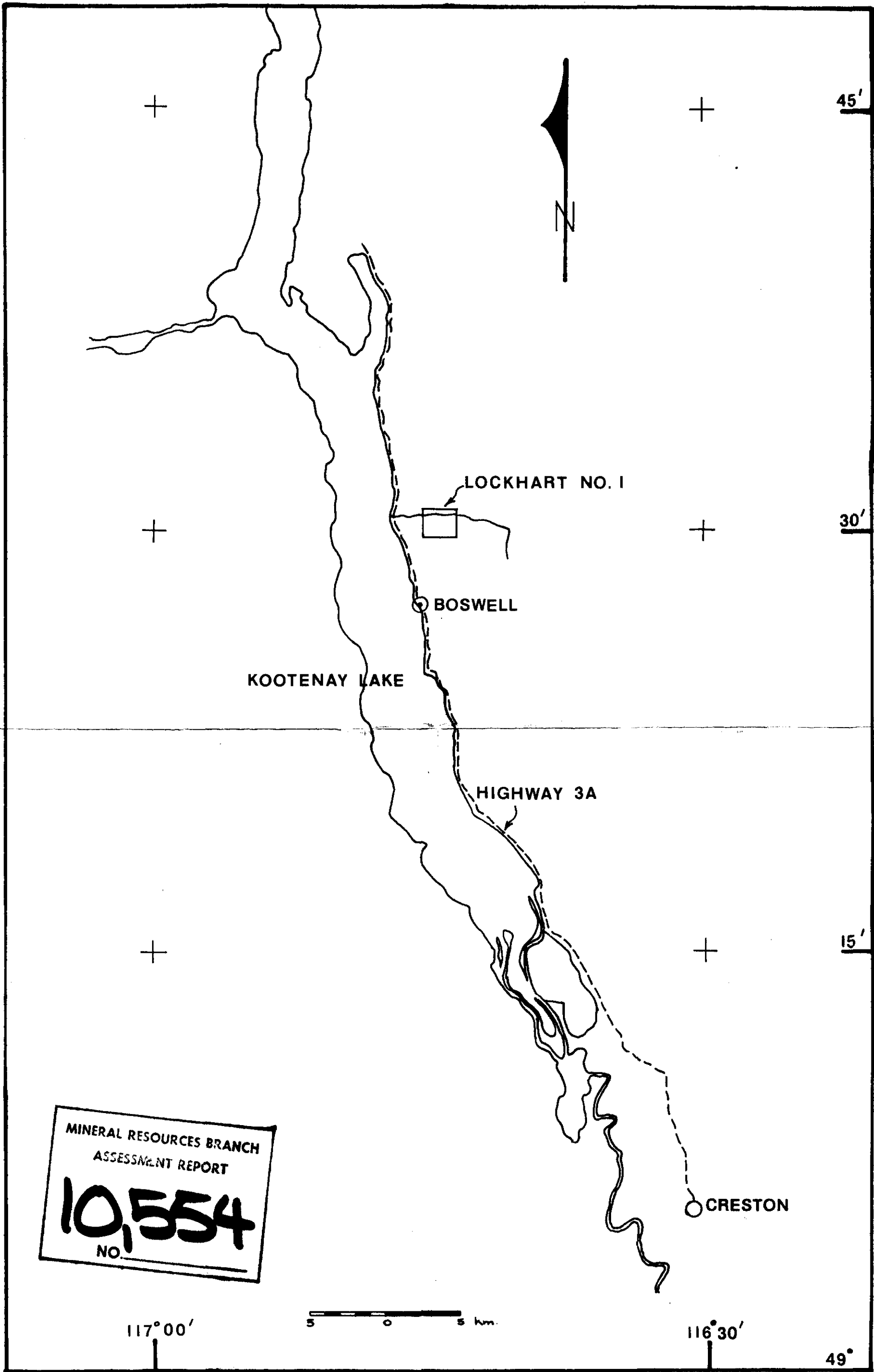
PLAN SHOWING EXTENT OF LINECUTTING
AND MAPPING ON LOCKHART NO. 1 CLAIM

82-F-7, 10

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

19554
NO.





LOCATION MAP
LOCKHART NO.1 CLAIM
82-F