OP84-51

010

GLACIER CREEK

COSGRAVE LAKE AREA. G-25

DAVID M. KUKKEE.

TABLE OF CONTENTS

0.1 LIST OF MAPS, FIGURES, AND APPENDICES

1.0 INTRODUCTION

The Glacier Creek Property presently consists of 60 claims in unsurveyed territory in the Thunder Bay Mining District.

The property is diagonally transected by the Glacier Creek Fault, along the length of which numerous copper, zinc, silver, and gold showings have been discovered.

Originally claimed during the staking rush for lithium in the 1950's, an exploration program was carried out on the possibility of developing the property for copper, which was subsequently reported to occur in anomalous zones extending in one instance for a distance of over 2400 Ft., and 104 Ft. in width.

Studies of work assessment files at the Resident Geologists Office show that most of the interest in the property was directed toward copper mineralization, with little attention paid to the precious metals which occur cojointly as shown in 1988.

Sampling along the fault by David M. Kukkee et al during the months of September, October and November 1988 of copper showings on the property have returned very encouraging results.

Grab samples have returned values as high as 11.12 % copper, 0.135 oz/ton gold, 0.233 oz/ton silver, 30 ppm zinc, .008 % nickel and traces of cobalt, chromium and lead.

Examination of diamond drill logs of previous work show a very high potential for mineralization apparently yet untested, as witnessed by the scarcity of published results of assays for precious metals occuring on this property.

This property appears to warrant further scrutiny, based on the results of recent assay work, the results of some aspects of previous work, and particularly because of the absence of indications of exploration efforts directed toward gold mineralization, which the testing in 1988 showed to be of high potential.

2.0 LOCATION AND ACCESS

The Glacier Creek Property is located east of Lake Nipigon, and is accessible by travelling east from the town of Nipigon, Ontario on Highway 17 for a distance of 22 km., then turning off the highway a few hundred feet east of the Ozone Creek onto the Little Bear Quarry Road, and travelling north and north-east to the fork in the road at Jug Lake. (approx. 30 km.)

The south east corner of the property is 3.2 km. further along the right-hand fork, which is oriented basically north-east, and is known as the Little Bear Quarry Road.

Travel to this point is easily done by automobile.

The south end of the property is accessed from this fork, and the north or western portions of the property are more easily accessed from the left fork from Jug Lake, by half-ton truck for a distance of about 2.5 km., then turning north-east along a narrow gravel bush road to the western border of the property, and then continuing along north-easterly to the north end of the property, which is bounded by Spud Lake at the north-east corner.

The south-east corner of the property touches the Little Bear Quarry Road.

Candle Lake lies centrally in the property, and is accessible by a bush road traversable by half-ton truck, from the Little Bear Quarry Road.

3.0 ADVANTAGEOUS LOCATION

The Glacier Creek Property is in a geographical location that is presently serviced by an all weather gravel road which is used by Domtar, for the purpose of logging, and for Domtar employees to commute to and from the town of Nipigon.

The Canadian Pacific Railway line is approximately 30 km. by road to the south.

A major gas pipeline exists approximately 20 km. to the east.

Hydro-electric power is also available within the above mentioned distances.

4.0 LIST AND STATUS OF CLAIMS

The Glacier Creek Property presently consists of 60 unpatented mining claims in good standing, numbering from T.B.1083800 to T.B 1083859 inclusive.

Since 1956 there have been several companies or individuals interested in the Glacier Creek Property.

Study of the work assessment files at the Resident Geologists Office, Ministry of Northern Developement and Mines has shown the following parties to have submitted records of work.

1. Canadian Addicks Mining Corporation
2. Aspen Explorations Inc.
3. R. Barker
4. Big Nell Mines
5. Midland Nickel Corp. Ltd.
6. R. Potter (Frobisher Ltd.)

Parties numbered 2 and 6 above did geological work in 1977 and 1956 respectively.

Party number 1 did trenching and stripping in 1969.

Parties numbered 1,2,3 and 6 did diamond drilling in 1971, 1977, 1965, and 1955-56 respectively.

Party number 1 did ground electro magnetics in 1969.

Parties numbered 4 and 5 did property reports in 1966 and 1967 respectively.

To briefly summarize the previous work, a large anomalous zone was outlined by Potter in the 1950's, with the main effort directed toward copper mineralization. Records of the diamond drilling done in the fall of 1956 by Mcleod-Cockshutt Gold Mines, on the claims numbered T.B. 70896 and T.B. 73196 showed assay returns of 0.25 oz. and 1.45 oz. gold. (HOLE # 6). Hole # 9 returned 0.06 oz. gold, at -205 ft. and also showed trace gold from -240 ft. to -290 ft. These two claims were located west of Candle Lake.

WHILE GOLD VALUES SUCH AS THESE WERE NOT ECONOMIC IN THE 1950'S , WHEN GOLD WAS $ 35/ OZ, THEY CERTAINLY ARE WORTH LOOKING AT TODAY.

In 1965 Barker drilled the northern section of the property and reports a massive pyrhotite bed. No assay reports were found in the assessment files.

Big Nell Mines reported copper values in 1966, and further work was recommended by Page,a Geological Engineer based on knowlege of a breccia zone to the south and the occurence of bornite and pyrite/ chalcopyrite to the north, and fault zones of substantial width.

Also reported in the breccia zone were fractured metasediments cemented with milky quartz, containing disseminated pyrite and chalcopyrite. No assay work for precious metals was recorded.

In 1967, Midland Nickel acquired the property,and apparently contrary to recommendations made in a report on the property, did not carry out any work.

In 1969, Addicks held the property, and contracted Oja to diamond drill and to do ground electromagnetics.

Oja reported numerous fault zones, and described them as economically important, since copper mieralization occurs in the brecciated borders of the fault zones. Also reported were pyrite and chalcopyrite occuring in quartz cutting the granite gneisses and metadiorite, striking parallel to the faults.

Assay reports by Oja included the following: copper 1.44, 2.26, 3.30, 4.44, 5.42, 7.79, 8.42, 9.65. There was no indication whether these numbers were expressed as a percentage or in oz./ton, but reason would dictate percentage was the expression intended.

Silver was reported to occur, the results of assays by Oja showed 0.34, and 0.62, again there was no indication whether this wa a percentage or oz./ton.

Similarily, gold was reported, trace and .01.

Oja was apparently discouraged by the lack of positive interpretations of the electro-magnetics, the decision to discard the magnetometer survey, and the abundance of overburden in the areas of the fault zones.

Oja went on to say that geochemical sampling following study of aerial photographs was highly recommended to further establish the existence of economic mineralization of copper.

In 1977, another report on the property by Ross Kidd, Consulting Mining Engineer was submitted, for the Vantage Mining Co. Inc.

This report verified the anomaly outlined by Oja, and Potter, and extended the zone further to the north. Two conductive anomalies were indicated along the Glacier Creek.

There is only one reference to assay work done for gold, and that is in Hole # 77-4, at 38ft to 229 ft., a 2.7 ft. sample length showed "nil".

In the same sample, silver returned "nil"

IN 1988 DAVE KUKKEE EXAMINED THE PROPERTY, AND SUBSEQUENT ASSAYS RETURNED 11.12 % COPPER, .233 OZ/TON SILVER, AND .135 OZ/TON GOLD IN GRAB SAMPLES, TAKEN FROM TRENCHES BLASTED INTO COPPER SHOWINGS.

SAMPLES SUBMITTED TO THE MINISTRY OF NORTHERN DEVELOPMENT AND MINES FOR ASSAY RETURNED ANOMALOUS GOLD, SILVER, AND SIGNIFICANT COPPER VALUES, AS WELL AS LOW ZINC AND NICKEL VALUES.

HEAVY SNOW IN THE FALL PREVENTED FURTHER EXAMINATION OF THE PROPERTY IN 1988, SPRING OF 1989 WILL SEE CONTINUED ACTIVITY ON THIS PROPERTY.

6.0 REGIONAL GEOLOGY

The regional geology of this area is more than adequately described in the ONTARIO DEPARTMENT OF MINES GEOLOGICAL REPORT NO. 31 " GEORGIA LAKE AREA" BY E.G. PYE, 1965.

7.0 PROPERTY GEOLOGY

The geology of this property is described in fair detail in the "REPORT ON THE ELECTROMAGNETIC SURVEY, ADDICKS CANADIAN PROPERTIES INC., GLACIER CREEK PROJECT, GEORGIA LAKE AREA, THUNDER BAY MINING DIVISION", BY DR. RAY OJA IN 1969.

See APPENDIX II for this report.

A MAP SHOWING THE TOPOGRAPHY OF THE PROPERTY IS INCLUDED IN THIS REPORT AS "MAP 4".

8.0 MAGNETOMETER AND ELECTROMAGNETIC SURVEYS.

The only magnetometer survey found available for this property is included in this report as " MAP 2" , and is an airborne magnetic survey done by SPARTAN AIR SERVICES LTD. for the Ontario Department of Mines, in 1963, covering the GURNEY LAKE AREA (map 2133 G).

The only electomagnetic survey found available for this property is described in section 7.0 above, and is included in this report as APPENDIX II, (Dr. Ray Oja, 1969), and as "MAP 3".

FURTHER STUDY OF THIS INFORMATION WITH REGARD TO PRECIOUS METALS MINERALIZATION FOUND RECENTLY (1988) MAY PROVE TO BE VALUABLE.

9.0 SUMMARY AND REVIEW OF CRITERIA

In view of the re-examination of previous data compiled on the GLACIER CREEK PROPERTY, the potential for economic quantities of gold mineralization seems to be quite high.

When this information , which is available at the Resident Geologists Office, Ministry of Northern Development and Mines is compared to the recent (1988) findings, the conclusion becomes apparent:

1. Previous work appeared to be directed at copper mineralization mainly.

2. The small amounts of gold reported in the 1950's did not warrant major exploration due to the market price of $ 35.00/oz.

3. Most of the work done appeared to be concentrated on the northern part of the property, and it seems that higher values are being found to the south, some in parallel vein systems.

4. THERE ARE VERY FEW REFERENCES MADE IN THE PREVIOUS WORK RECORDS OF TESTS DONE FOR GOLD MINERALIZATION.

5. Assays for gold should be done based on study of the drill core logs alone (see APPENDIX I) not to mention the following mineralization already documented:

-copper
-silver
-zinc
-nickel
-bornite
-pyrhotite
-chalcopyrite
-pyrite

6. Known faults and breccia zones should be tested thoroughly and geochemical or other methods employed to test areas with an abundance of overburden.

LIST OF ASSAY RESULTS FROM GLACIER CREEK PROPERTY
SAMPLING DONE BY KUKKEE ET AL (as of December 31, 1988)

SAMPLE	CERTIFICATE	AU. in OZ/TON	AG. in OZ/TON	CU. %
SAMPLE # 1.	88A1054	0.017	N/A	N/A
NIP-EKDK-1.	20147	0.002	N/A	N/A
NIP-EKDK-1.	20296	N/A	<1 ppm	N/A
ED-1	20629	0.135	N/A	N/A
DMK-1-GL-1.	20630	0.021	N/A	N/A
DMK-1-GL-2.	20649	0.004	N/A	N/A
ED-1.	20659	N/A	0.186	2.584
DMK-1-GL-1.	20660	N/A	0.076	1.632
DMK-GL-3A	20674	0.020	N/A	N/A
DMK-GL-3B	"	0.003	N/A	N/A
DMK-GL-4	"	0.002	N/A	N/A
DMK-1-GL-2	20695	N/A	0.077	2.300
DMK-GL-4	20712	N/A	N/A	0.179
EK-1-(2)	20730/20757	0.001	0.029	1.237
EK-1-A	"	0.004	0.058	3.333
EK-1-B	"	0.055	0.088	3.370
GL-1-(2)	"	0.031	0.117	4.615
GL-1A-WA	"	0.010	0.117	2.367
GL-1A-VE	"	0.008	0.233	6.167
GL-1-B	"	0.010	0.058	0.573
GL-1-C	"	<0.001	0.029	0.023
GL-3B-(2)	"	0.008	0.117	11.12
GL-4-(2)	"	0.001	0.058	2.660
GL-4-(3)	"	<0.001	0.058	0.140
GL-5-(1)	"	<0.001	0.029	0.071
GL-5-(2)	"	<0.001	0.088	0.021
GL-7-(1)	"	<0.001	0.029	0.014
GL-7-(2)	"	<0.001	0.029	0.020
GL-7-(3)	"	<0.001	0.058	0.045

THE FOLLOWING RETURNS WERE SAMPLED BY KEVIN KIVI (RIO ALGOM):

SAMPLE	GOLD PPB	SILVER PPM	COPPER PPM	ZINC PPM
GCR-001	1521			
GCR-002	24			
GCR-003	1969/1630	0.9	29200	18
GCR-004	1240/1190	1.6	66000	24
GCR-005	10	NIL	4910	30

MARK SMYK, MINISTRY OF NORTHERN DEVELOPMENT AND MINES RETURNED:

GL-3 - 88-BDK-01 0.04 oz/ton AU AND <0.10 oz/ton SILVER
GL-7 - 88-BDK-06 <.01 " " "
GL-7 - 88-BDK-07 0.01 " " " 5400 PPM. COPPER

FIGURE (i) REGIONAL LOCATION MAP

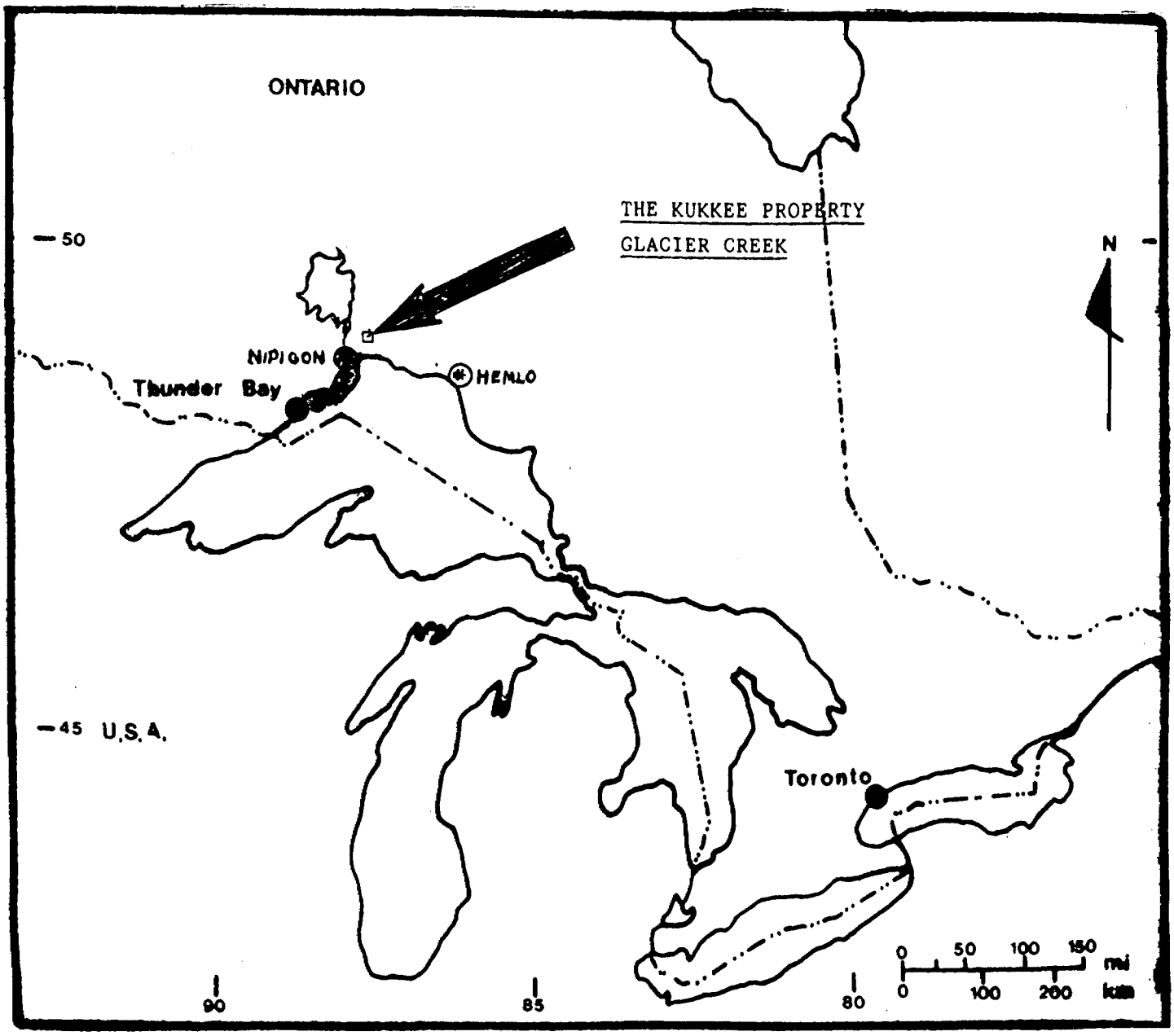
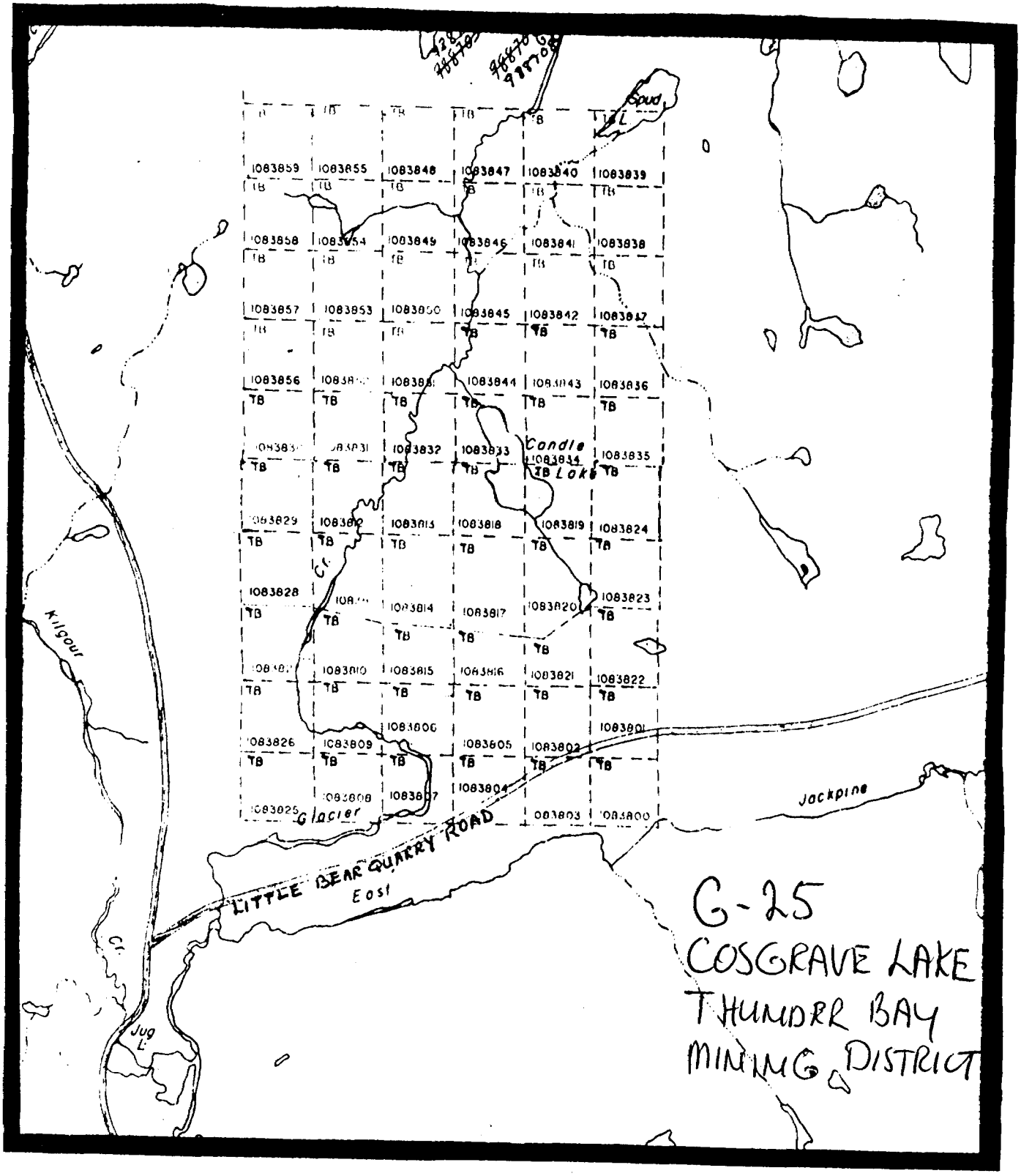
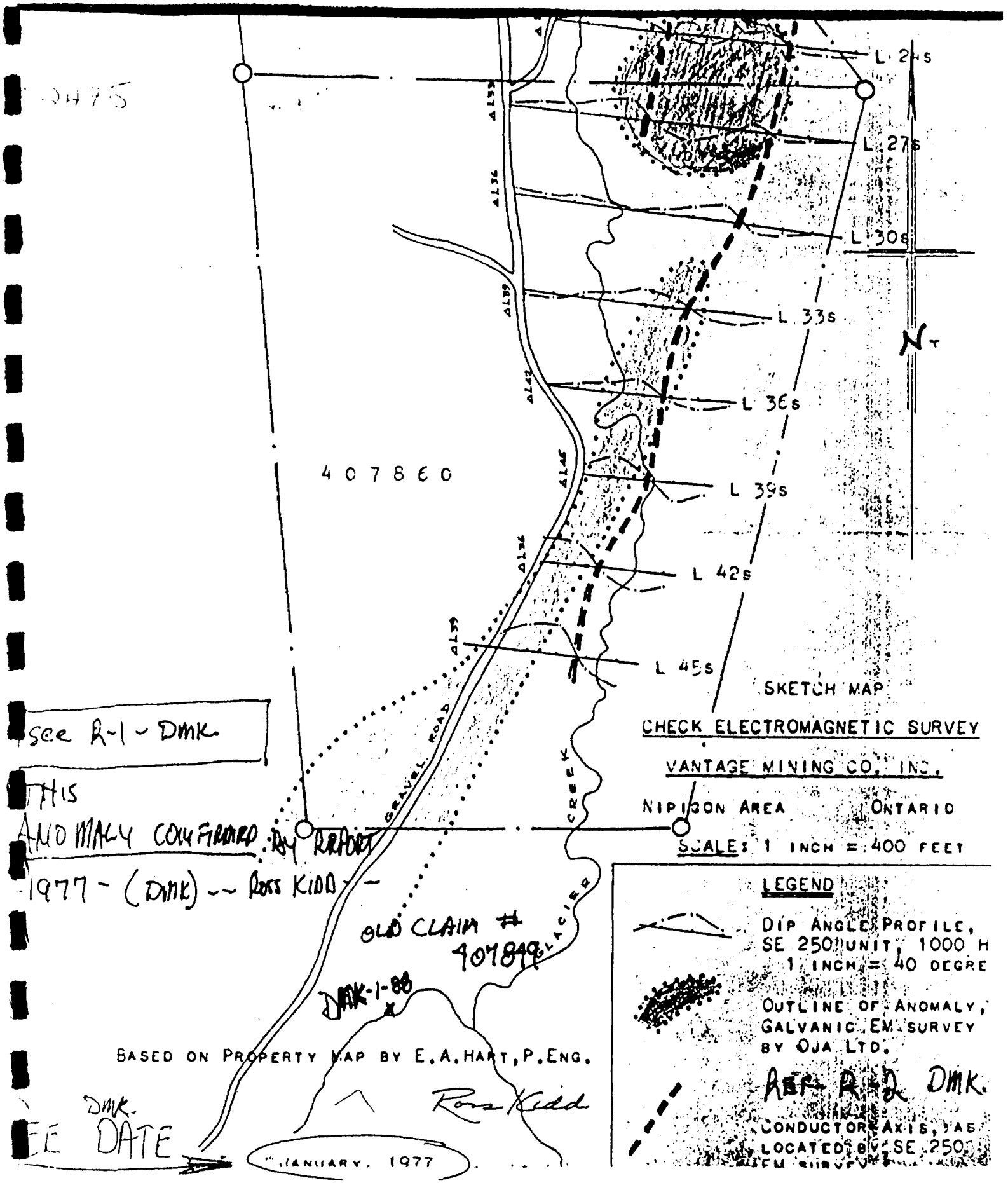


FIGURE (11) PROPERTY LOCATION MAP

FIGURE (iii) CLAIM MAP GLACIER CREEK PROPERTY





See R-1 ~ DMK

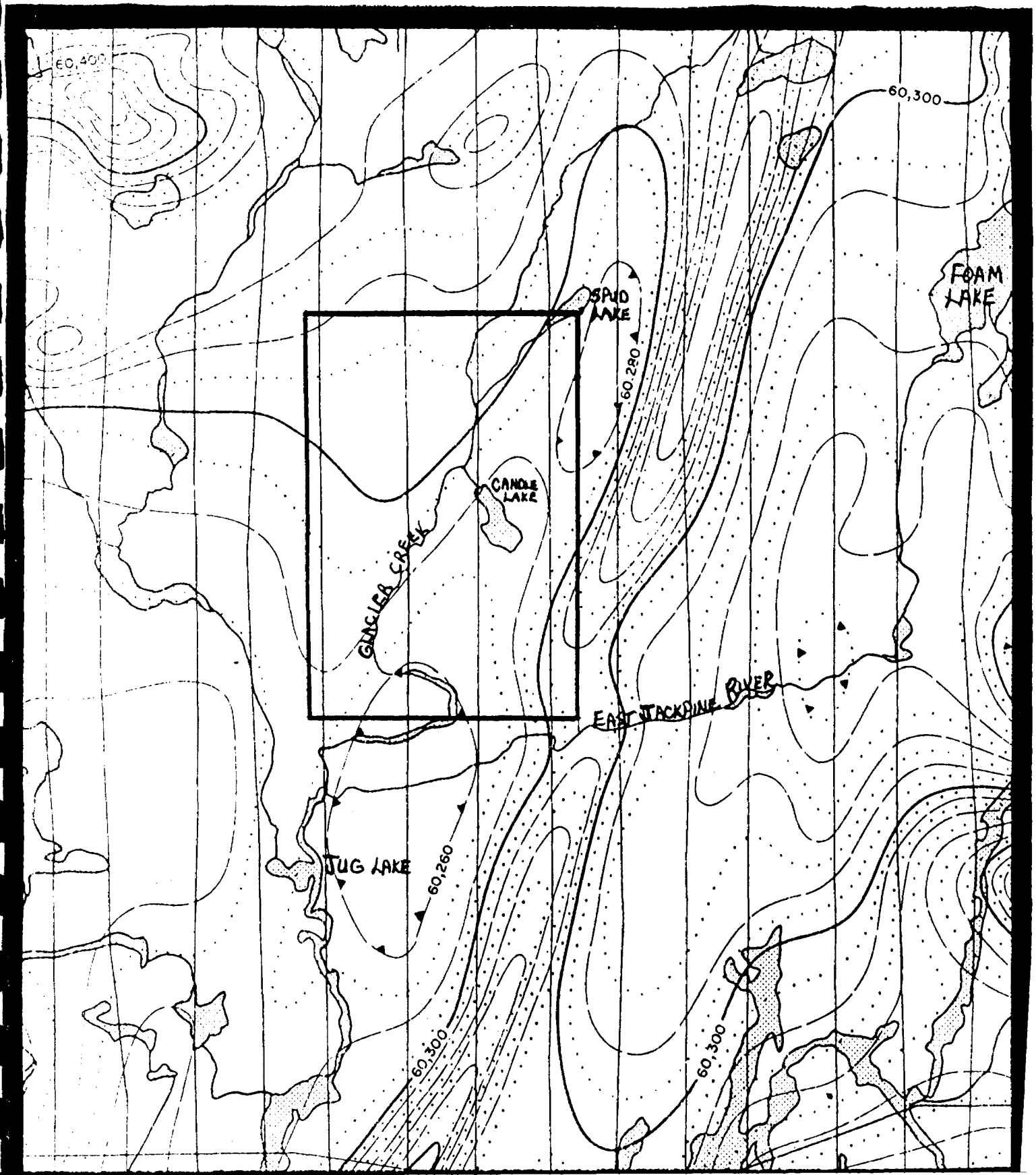
THIS ANOMALY CONFIRMED BY REPORT -1977- (DMK) ~ Ross KIDD ~

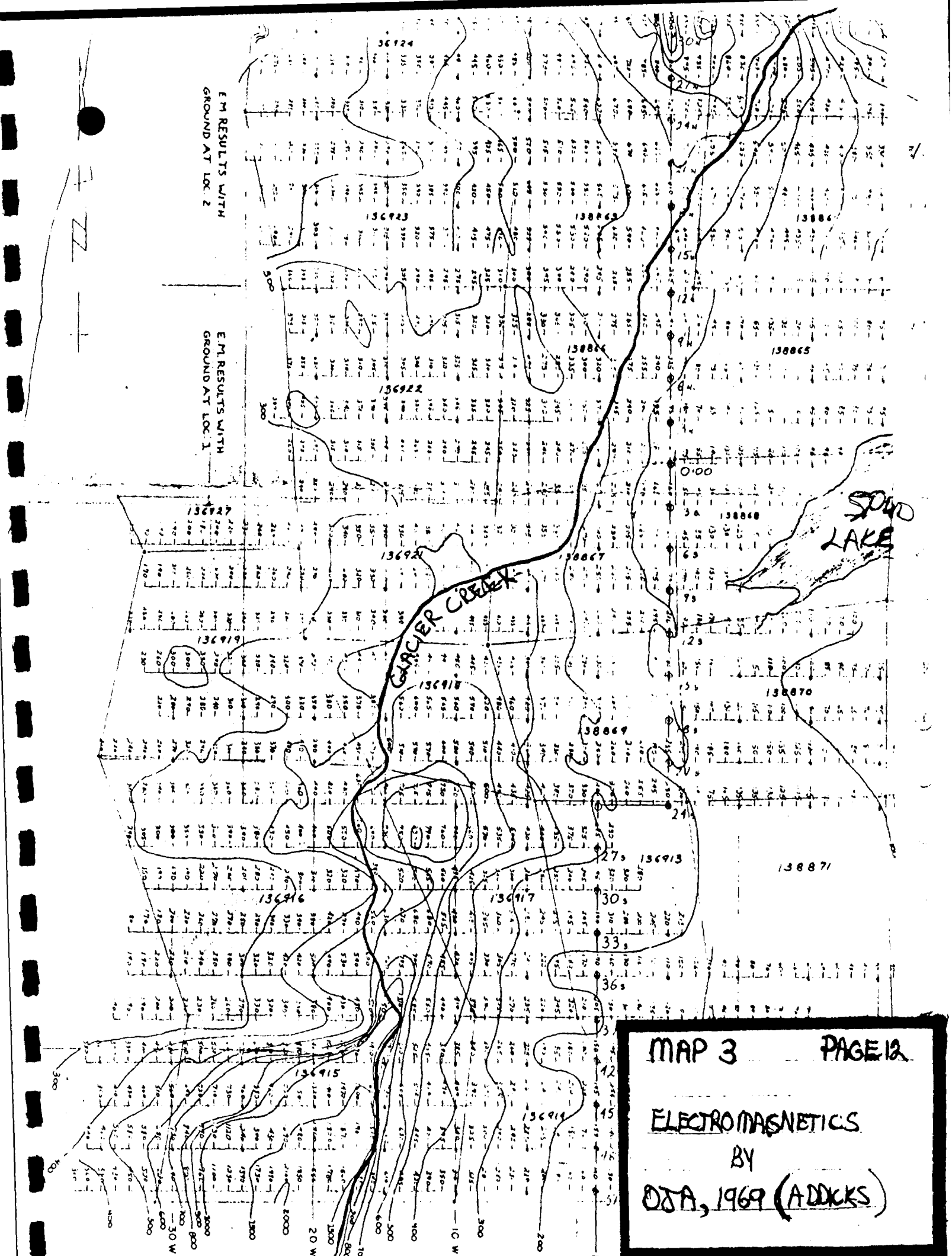
REF R-1 DMK.

DMK.

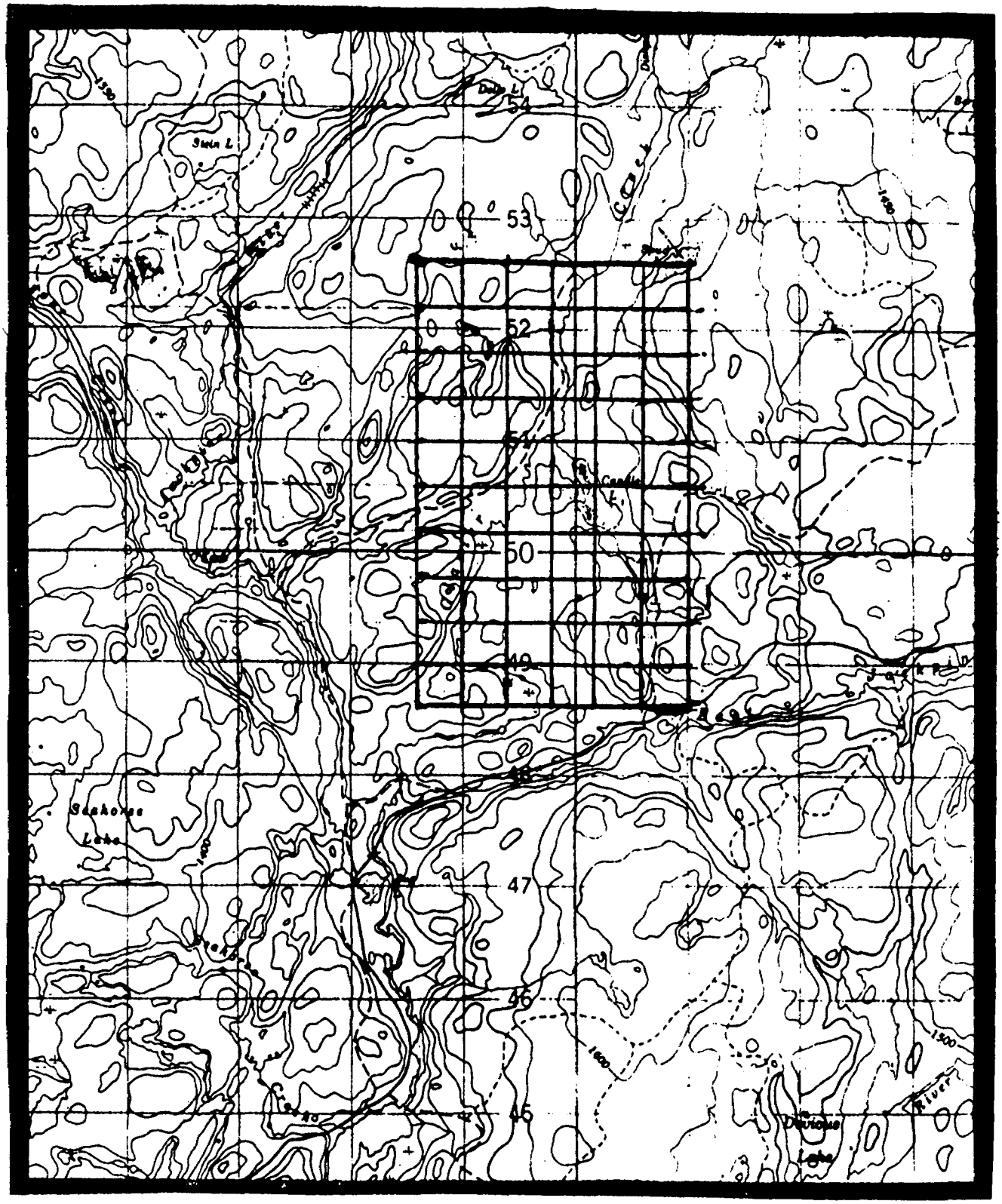
EE DATE

MAP 2 MAGNETOMETER SURVEY OF GLACIER CREEK AREA




E M RESULTS WITH GROUND AT LOC 2
E M RESULTS WITH GROUND AT LOC 1
GLACIER CREEK
SOUTH LAKE
136924
136923
136922
136927
136921
136919
136918
136916
136917
136915
136913
136914
138865
138866
138867
138868
138869
138870
138871
MAP 3 PAGE 12
ELECTROMAGNETICS
BY
OSA, 1969 (ADDICKS)

MAP 4 TOPOGRAPHY OF GLACIER CREEK AREA CLAIMS



APPENDIX I

DRILLING LOG 1956 (Potter Prospect)

DIAMOND DRILL RECORD

LOCATION: LAT. On Line 32 ∠ 00 N.
DEP. & 3 ∠ 95' E.

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING S 70° E
DIP - 45°

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 6

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
0.0 - 6.0	Casing				% Cu	
- 12.0	Sh'd - carbonaceous schist ∠ quartz stringers					
- 14.0	Fine grained grey sediment (?) ∠ odd quartz stringers					
- 22.0	Sh'd carb. - schist					
- 41.0	Schist - 50% diorite ∠ odd ~~wll~~ quartz stringers some pyrite shearing @ 33.35 -					
- 44.5	Schist - 70% diorite					
- 50.5	Schist some diorite trace chalco 49'					
- 65.0	Fine grained sediment (?) odd (narrow) ~~wall~~ quartz stringers small amount of shearing and some diorite trace chalco 55 - 57 ∠ 0.03 pyrite @ 61.6					
- 94.0	Well sh'd ∠ considerable diorite ∠ some brecciated - 0.3fairly well mineralized pyrite @ 68 ∠ trace chalco @ 75.5 - shearing here nearly ll to core					
- 98.0	Schist sh'd ~~xx~~ ∠ 50% diorite shearing at various angles ∠ slightly mineralized chalco	E4701	~~E4701~~		0.40	
98.0 - 105.0	Fine grained sediment (?) some shearing 0.1 quartz stringers @ 102.0 with fairly well mineralized chalco slightly mineralized chalco @ 102.5 ∠ 0.1 quartz stringers - 104.3 104.8 well mineralized chalco and in shearing here also					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 6 - Page 2

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
- 127.0	Sh'd material / considerable diorite and quartz / trace chalco @ 106.3 / 107.0 / 108.6 / 110.8 / 111.8 - Vug @ 112.5 - 112.9 fair chalco @ 118.2 - 118.7					
- 139.0	% granitic material (fine grained) / quartz / feldspar bands in highly altered sediment (?) several spots of chalco - shearing here would appear to be nearly vertical (/ 45° to c.a.) / 0.2 well mineralised pyrite @ 133.8 (shearing)					
- 146.0	Sh'd material / altered (granitised) material (diorite) to 141.6 / and also 144.0 - 146.0 / schist @ 141.6 - 144.0 / some quartz stringers / slightly mineralised chalco	E4702	7.0		0.25	
- 149.0	Sh'd material / some altered / quartz stringers					
- 155.0	Altered Material (gran.) in schist / quartz stringers slightly mineralised	E4703	6.0		0.30	
155.0 - 161.0	Schist some granitic bands slightly mineralised chalco	E4704	7.0	0.25		0.56% Cu
- 165.0	Granitic material / altered (cherty material/ contact types showing some granitic phase in chert	E4705	4.0	1.45		16.0'
- 173.6	Cherty material / feldspar bands pyrite 0.1 @ 165.1 / 166.6 / 169.2 - chalco 170.4 - 171.6					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 6 - Page 3

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
- 180.6	Highly altered silicified Brecciated a bit ∠ granitised - chalco @ 179.6					
- 183.0	Silicified granitic material					
- 186.6	Broken granitic material ∠ 20°					
- 188.8	Silicified Brecciated granitic material					
- 193.4	Dark red coarse grained granite ∠ 0.4 qtz. @ 191.4					
- 196.0	L. C.					
- 240.0	Medium grained pink granite some alterations and dark material @ 212.0 - 216. - Brecciated @ 222 - 222 (0.4 alteration @ 237.4) -					
-283.0	Greyish pink granite fine-Medium grained odd narrow quartz stringers					

Walter Maybank

DIAMOND DRILL RECORD

LOCATION: LAT. 200 (S20°W) of #2 Hole (& 60' N 70°W)
DEP.

ELEVATION OF COLLAR 1955E ≠ 4883

DIRECTION AT START: BEARING S 70°E
DIP - 45°

PROPERTY Glacier Creek

STARTED

COMPLETED

HOLE NO. 8

Depth Feet	FORMATION	Sample No.	Width of Sample	% Cu Oz.	Progressive Ft. & Oz..	Average Assay
0.0 - 5.0	Casing					
- 45.5	Granite gneiss interbanded with bands of feldspar and red granite 0.2 qts. @ 43 and 0.4 qts. @ 44 & 45° to core (90° or Vert. dip here?)					
- 51.0	Fine grained altered sediment (?) inter-banded with red granite material most narrow quarts stringers lying 20° - 30° off right angles to hole suggesting 65 - 75° north dip to these					
- 62.5	Granite gneiss and interbanded red granite material					
- 67.0	Mostly red feldspar (pegmatite) (balance gneiss)					
- 88.8	Fine grained grey sediment (?) interbanded with red granitic material trace chalco @ 70.6 and 74.8 most narrow quarts stringers 20 - 45° to core but some nearly 11 to core - chalco seems to be with 20 - 45° only 0.1 well mineralised chalco & 82.8 ≠ 0.1 fairly well mineralised @ 86.8					
88.8 - 93.9	Fine grained sediments interbanded with coarse grained red granitic material some fine chalco	E4708	5.1	.17		
- 107.5	As above but only chalco is 0.05 well mineralised @ 100.0					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 6 - Page 2

Depth Feet	FORMATION	Sample No.	Width of Sample	% Cu. ~~Gold Cu.~~	Progressive Ft. & Oz..	Average Assay
- 113.9	Mostly coarse granite gneiss with Qtz. and Feldspar	E4709	6.4	.37		
	stringers @ 30 - 60° to right angles of hole - about 6					
	of these from 0.03 - 0.15 fairly well mineralised chalco					
	≠ some fine chalco in rock					
- 124.0	Granite gneiss - some narrow quartz feldspar ≠ fine					
	pyrite & 115 - 117 - odd trace chalco					
- 136.0	Fine grained sediment ≠ granite gneiss ≠ 0.6 qtz.					
	feldspar @ 128 ≠ oddnarrow quartz feldspar stringer					
	≠ trace chalco					
- 140.0	Granite gneiss (altered) ≠ Qtz. ≠ feldspar stringer	E4710	4.0	.48		
	@ 20 - 60° to right angles to hole slightly mineralised					
	≠ chalco both in stringer and rock					
- 145.0	As above	E E4711	5.0	.45		
- 150.0	As Above	E4712	5.0	.45		
- 155.0	As above	E4713	5.0	.86		
160.0	As above ≠ schist	E4714	5.0	.90		
165.0	Schist ≠ Feldspar bands ≠ chalco	E4715	5.0	.40		
165.0 - 170.0	Schist ≠ fine grained sediment ≠ altered schist ≠	E4716	5.0	.20		
	stringers of Qtz. ≠ feldspar ≠ 0.3 ≠ 0.4 L.C. ≠ a					
	little chalco					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 8 - Page 3

Depth Feet	FORMATION	Sample No.	Width of Sample	~~Gold Oz.~~ %Cu	Progressive Ft. & Oz.	Average Assay
- 175.0	Silicified sediment and numerous quartz stringers to 173.7 ≠ altered granitic - 174.7 ≠ sediment - 175.0 ≠ 0.4 ≠ 0.3 L&C. - some chalco	E47187 E4717	5.0	.45		
- 180.0	0.8 L.C. @ 175.2 ≠ altered granitic gneiss and feldspar stringers 0.1 well mineralized @ 179	E4718	5.0	.80		
- 185.0	Altered granite (Diorite ?) ≠ feldspar bands to 181.5 then fine grained sediment ≠ some chalco	E4719	5.0	.30		
- 190.0	Fine grained sediment ≠ altered bands ≠ feldspar not much chalco	E4720	5.0	.25		
- 195.0	Fine grained sediment ≠ feldspar and qtz. bands ≠ chalco	E4721	5.0	.33		0.488 %Cu
- 200.0	As above ≠ more silicification and more chalco	E4722	5.0	.93		
- 205.0	40% silicified diorite (?) ≠ 60% qtz. feldspar ≠ trace chalco	E4723	5.0	.15		
- 210.0	60% " " ≠ 40% " " ≠ some chalco	E4724	5.0	.45		
- 215.0	20% " " ≠ 80% " " ≠ trace chalco	E4725	5.0	.20		
- 220.0	70% " " ≠ 30% " " ≠ some chalco	E4726	5.0	.50		
- 225.0	20% " " ≠ 80% " " ≠ Trace chalco	E4727	5.0	.35		
- 230.0	30% very " " ≠ 70% " " ≠ some chalco	E4728	5.0	.35		

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 8 - Page 4

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
230.0 - 235.0	Very highly altered diorite ≠ Qtz. - brecciated and some vugs - also badly broken and 1.0 L.C. and some chalco	E4729	5.0	.60		
- 240.0	Highly altered diorite ≠ Qtz. - brecciated and changing gradually to almost cherty material - 0.5 L.C. - some chalco	E4730	5.0	.85		
- 245.7	Altered brecciated cherty material - grey to fawn - 1.5 L.C.					
- 248.4	Brecciated - partly granite					
- 250.7	L. C.					
- 264.0	Mostly coarse grained granite highly altered badly broken @ 256 - 258.7 ≠ some L.C. Badly broken @ 263 - 264.0 ≠ some L.C.					
- 271.6	Pink granite some alteration 0.2 Qtz @ 268.2 ≠ 40.7 L.C. @ 269.3					
- 278.0	Grey granite 0.3 altered at end.					

Walter Maybach

DIAMOND DRILL RECORD

LOCATION: LAT. 200' N.20° E. of #5 Hole
DEP. & 85' to N. 70° W

ELEVATION OF COLLAR 3600 N ≠ 310 E

DIRECTION AT START: BEARING S 70° E
DIP - 50°

PROPERTY Glacier Creek

STARTED

COMPLETED

HOLE NO. 7

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz..	Average Assay
0.0 - 47.0	Casing					
- 87.0	Fine grained grey sediment - some shearing nearly ll to core - @ 62 - 65.0 some areas leached out - L.C. 71.5 - 73.6 ≠ 74.6 - 76.0 ≠ 79.6 ≠ more leaching @ 80.0 towards end rock changes to more of the schist complex					
- 100.0	Schist - 50% fawn alteration 1.0 L.C. @ 92.6 - Bands here average 45° to core - some leaching and some Qtz.					
- 117.2	Fine grained red ≠ schist ≠ qtz - some leaching 109 - 11B ≠ L.C. @ 113.5 - 115.0 and 116.5 - 117.2					
- 121.1	Schist ≠ fawn alteration banding here 20 - 35° to r.l. stangles to hole - some qtz.					
- 141.0	Schist ≠ some Qtz. ≠ 0.15 well mineralized chalco @ 122.4 - mostly fine grained 132.0 - 135.0 banding every direction - 1.5 L.C. @ 139.5					
141.0 - 143.4	Coarse grained schist			⅛ Cu		
- 157.0	Fine grained silicified red sediment medium grained schist some leaching - trace chalco 152.4 some chalco in vugs @ 155.4					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 7 - Page 2

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz	Progressive Ft. & Oz.	Average Assay
- 162.0	Schist ∕ altered granitic material ∕ Qtz.					
- 181.0	Schist ∕ some Qtz. ∕ some fine grained sediment (?) odd trace chalco ∕ 0.1 chalco @ 173.6 and 176.8 and 178.3 and 178.9 ∕ 20 L.C. @ 179.0					
- 185.0	Diorite (?) ∕ quarts stringers					
- 190.0	" " " " ∕ 0.4 L.C. ∕ trace chalco some leaching	E4731	5.0	.11		
- 195.0	Diorite changing to chert some chalco	E4732	5.0	.19		
- 200.0	Cherty material ∕ Qtz. ∕ Miggy spots some chalco and also shows in vugs	E4733	5.0	.54		0.387% Cu / 20.0'
- 205.0	Cherty material ∕ considerable leaching ∕ 0.3 L.C. and some Qtz. Str. ∕ some chalco	E4734	5.0	.71		
- 218.2	Cherty material some Qtz. ∕ leaching trace chalco ∕ pyrite					
- 230.7	Granitic material - 70% red feldspar most of rest is quarts (Pegmatite)					
- 235.0	Broken cherty material to 231.6 ∕ L.C. to 235.0					
- 239.0	Brecciated Granitic material ∕ 1.0 L.C. ∕ end					

Walter Maybank

DIAMOND DRILL RECORD

LOCATION: LAT. 200' = S 20° W of #8 & 190' =
DEP. N 70° W of Line from Hole # 2

ELEVATION OF COLLAR 1750 ft ± 490E

DIRECTION AT START: BEARING S 70° E
DIP 45°

PROPERTY Glacier Creek

STARTED October 23, 1956

COMPLETED October 26, 1956

HOLE NO. 9 - Page 1

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold-Oz.	Progressive Ft. & Oz..	Average Assay
0.0 - 5.0	Casing					
- 60.0	Granite Gneiss - trace chalco 9.5 - 10.4 0.15 well mineralised chalco @ 48.0 - trace pyrite @ 51					
- 120.0	Granite gneiss and fine grained grey phase mixed with some Qtz. stringers trace chalco @ 116					
- 145.0	Med. grain schist ± altered silicified bands of granite material ± qts. stringers trace chalco @ 120.6 and 129 0.4 L.C. @ 129.3 trace chalco @ 131 and 134 - pyrite @ 141 and 144					
- 187.5	Altered material (Diorite?) feldspar bands and some bands schist (med. grained) ± odd spot chalco - altered bands show rounded feldspar					
- 180.4	Granite material - mostly feldspar with some banded xxxx sediment (?) ± feldspar bands ± Qtz. stringers ± 0.3 fairly well mineralised chalco @ 172 ± 0.2 L.C. @ 170 ± 1.0 L.C. @ 173.7 and 1.0 @ 176 ± 0.6 diorite (?) @ 179.7 with some chalco band more silicified after 180.3					
180.4 - 195.0	Altered granite gneiss - very highly silicified with bands of quarts and feldspar cutting it. - some breccia trace chalco @ 184.7 - medium grained sediment (?) @ 187.7 - 189.5			% Cu		

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 9 - Page 2

Depth Feet	FORMATION	Sample No.	Width of Sample	~~Gold Oz.~~	Progressive ~~Ft. & Oz.~~	Average Assay
- 205.0	Medium grained schist 40% feldspar ≠ Qtz. to 200.0 ≠	F4745	10.0	~~Xxxx~~		
	(Medium grained sediment) (?) ≠ 25% feldspar and Qtz.			~~Xxxx~~		
	stringers some chalco			.06		
- 211.3	Medium grain sediment (?) ≠ some altered bands(diorite)					
	trace chalco @ 210.7					
- 219.4	Feldspar bands in brecciated - silicified some - (chert					
	feldspar sediment dioritic all mixed in)					
- 221.0	Granite gneiss Mostly feldspar highly silicified					
- 228.0	Medium grained schist and altered material (dioritic					
	70% 1.0 Last Core @ 225 and 0.5 L.C. @ 227.5					
- 240.0	Medium grained sediment odd narrow quartz stringers -					
	2.0 L.C. @ 228.0 ≠ 1.5 L.C. @ 230.5 ≠ 2.0 L.C.@ 233.0					
	≠ 1.2 L.C. @ 235.7 trace chalco @ 237.7 - 238.2					
	badly broken here and no sludge returned in hole					
240.0 - 245.0	Trace granite sediment ≠ quartz stringers ≠ 0.6					
	alteration ≠ 0.5 L.C. ≠ chalco	F4735	5.0	Trace	.40	
- 250.0	Medium grained sediment ≠ qtz. ≠ feldspar stringers	- 36	5.0	"	.53	
	alteration chalco					
- 255.0	Medium grained sediment 0.1 qtz. ≠ feldspar stringers	- 37	5.0	"	.17	
	trace chalco					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 9 - Page 3

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
- 260.0	Medium Grained sediment 0.1 / qtz. / Feldspar stringers	- 38	5.0	trace	.43	
- 265.0	Medium grained sediment / qtz. / altered material some Brecciated / trace chalco	- 39	5.0	"	.48	
- 270.0	Medium grained sediment / qtz. / feldspar / altered material some Brecciated some chalco	- 40	5.0	"	.52	
- 275.0	Mostly altered material (dioritic?) / feldspar / fair chalco	- 41	5.0	"	.80	0.534% Cu / 50.0'
- 280.0	Mostly altered material (dioritic?) / feldspar / trace chalco	- 42	5.0	"	.61	
- 285.0	Mostly altered material (dioritic?) becoming silicified some chalco	- 43	5.0	"	.65	
- 290.0	More granitic - some brecciated / feldspar some chalco broken at end	- 44	5.0	"	.75	
- 291.0	L. C.					
300.0	Coarse grained granite / qtz. / feldspar bands 0.6 L.C. @ 296					
- 309.0	Fine grained pink granite 1.0 L.C. @ 304					
	End of Hole Walter Maybank					

DIAMOND DRILL RECORD

LOCATION: LAT. @ 4490 W and 96400N
DEP.

ELEVATION OF COLLAR

DIRECTION AT START: BEARING N 70° W
DIP - 45°

PROPERTY Glacier Creek

STARTED

COMPLETED

HOLE NO. 10

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz..	Average Assay
0.0 @ 5.0	Casing					
- 99.8	Granite - some alteration L.C. 41.0 - 43.5 well altered 88 - 89					
- 222.0	Diabase - fine grained to 110 and again in last foot					
- 223.8	Fine grained grey sediment (?) with Qts. stringers - some vugs - chalco in stringers					
- 226.0	Altered Granite					
- 227.5	Fault seam					
- 230.5	0.3 breccia + 1.5 Qts-carb + granite 0.1 well mineralised chalco @ 228.3 Change to "E" Core due to open fault					
- 249.3	Altered granite odd qts. str. + 0.5 L.C. @247.3					
-254.3	Brecciated quarts and altered granite 1.e L.C. at end trace pyrite					
- 253.6	Fine grained black sediment (?) some breccia + 30% quarts ~~Oil~~ well mineralised chalco @ 258.0 - trace Pyrite					
- 270.5	Altered granite - some breccia and Qts. stringers					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 10 - Page 2

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
270.5 - 280.5	Granite ~~gneiss~~ gneiss and granite (altered) 0.6 L.C. @					
	278 and 0.9 L.C. @ 279.6					
- 306.3	Grey granitc - not much alteration 0.8 L.C. @ 296.4					
- 350.0	Granite ~~gneiss~~ gneiss / granite (mixed) not much alteration					
	and no mineralization 1.0 L.C. @ 318.7 and 1.2 L.C.					
	@ 323 1.2 L.C. @ 324.6 and 1.2 L.C. 328.2 0.5 L.C.					
	@ 333.8					
	End of Hole Walter Maybank					

DIAMOND DRILL RECORD

LOCATION: LAT. 1200 N.
DEP. 447.4 E. of base line

ELEVATION OF COLLAR

DIRECTION AT START: BEARING E. down picket line (S58°E.)
DIP - 50°

PROPERTY Glacier Creek

STARTED

COMPLETED

HOLE NO. 13

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz..	Average Assay
0.0 - 4.0	Casing					
25.0	Pegmatite - Mostly feldspar 0.8 L.C.@ 23.2					
- 41.6	Med. gr. schist - 1.2L.C. @ 32.7 / 1.0L.C.@ 39.0					
- 54.8	pegmatite - mostly feldspar					
- 103.4	fine to med. grained schist - altered in places to granite phase some Q.S. 0.03 W.M. chalco @ 68.5					
110.9	M. gr. pink - biotite granite					
113.0	M. gr. schist					
- 114.3	M.gr. pink - biotite granite					
- 132.0	fine med. grained schist - granite alteration in places - 70% L.C. 120 - 125					
- 159.0	As above but with 70% biotite - feldspar pegmatite - 0.5 Qtz. with brecc mat. @ 148.1					
- 174.5	fine gr. schist - some Q.S. 0.6 L.C. @ 160.8 & 162.3					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 13 Page 2.

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz..	Average Assay
174.6 - 175.6	Pegmatite					
- 179.5	Med. gr. schist					
- 184.5	Pegmatite					
- 247.6	Mostly medium coarse grained granitised schist odd fine grained band Tr. Chalco @ 192.6 2.5° pegmatite @ 218.0 - 0.5.L.C. @ 243.5					
- 269.6	Pegmatite - 1.1 L.C. @ 248.6 / 0.6 @ 256.1 / 0.7 @ 258.3 - this band of pegmatite has Qtz mica - feldspar - some black mineral or rock / some greenish all specimens from 267.0 and 268.4					
- 299.0	Med. coarse grain granite ~~gniss~~ gneiss					
- 329.1	Pegmatite - 0.4 well mineralised chalco @ 301.7 trace chalco @ 306.0 - mixed schist ~~gniss~~ gneiss 306.0 - 310.4 - 0.8 L.C. @ 316.7 & 0.9 @ 319.1 - 0.2 well mineralised chalco @ 321.1 beside a narrow schist band all specimens					
- 335.4	fine grained schist / 1.4 granite ~~gniss~~ gneiss at end					
- 349-8	granite gniss					
- 346.8	Pegmatite - small amount mica					
- 358.0	Pegmatite 0.1 well mineralised chalco @ 357.0					

DIAMOND DRILL RECORD

LOCATION: LAT. _____ DEP. _____

ELEVATION OF COLLAR _____

DIRECTION AT START: BEARING _____ DIP _____

PROPERTY Glacier Creek

STARTED _____

COMPLETED _____

HOLE NO. 13 - Page 3.

Depth Feet	FORMATION	Sample No.	Width of Sample	Gold Oz.	Progressive Ft. & Oz.	Average Assay
358.0 - 360.6	Fine grain schist					
- 362.2	Pegmatite					
- 364.3	Fine grain schist to 363.4 ± mixed pegmatite and schist fairly well mineralised chalco					
420.5	Pegmatite - some mica - heavy mica 370 - 371.3 - granite gniiss 397.6 - 398.9 and 404.5 -					
-427.7	Highly altered granitic grain gniiss (dioritic)					
- 441.0	Pegmatite some breacia at last foot					
- 460.0	Fine grained schist - medium grained some alteration some Qtz. - feldspar stringers - and breccia - 0.05 well mineralised chalco @ 451.3 last 1.2' 70% feldspar					
- 465.8	Brec. Alt. schist - some chalco ± 0.8 L.C.@ 464.1 - could be fault here	E4747	5.8	1.06% Cu.		
522.0	Fine grained biotite granite - not much alteration					
- 533	Fine grained diabase					

Walter Maybank

DIAMOND DRILL RECORD

LOCATION: LAT. 7545 N DEP. 700 W

ELEVATION OF COLLAR

DIRECTION AT START: BEARING S 60° E DIP - 45°

PROPERTY Glacier Creek

STARTED

COMPLETED

HOLE NO. 11

Depth Feet	FORMATION	Sample No.	Width of Sample	~~Gold Oz.~~	Progressive Ft. & Oz..	Average Assay
0.0 - 4.0	Casing			% Cu		
- 75.0	Grey Granite - odd quarts stringer					
- 92.0	Granite gradually becoming highly altered - some brecciation - refilled with quarts					
- 97.5	Mostly quarts of vein type with some sediment (fine grained grey) (fault filling) some chalco	R4746	5.5	0.35		
-101.4	Altered granite & sediment - 50% lost core					
-133.0	Diabase - pyrite @ 104' - considerable epidote in stringers					

Walter Maybank

DIAMOND DRILL RECORD

LOCATION: LAT. 7355N
DEP. 805W

ELEVATION OF COLLAR

DIRECTION AT START: BEARING S60°E
DIP -45°

PROPERTY Glacier Creek

STARTED

COMPLETED

HOLE NO. 12

Depth Feet	FORMATION	Sample No.	Width of Sample	~~Gold Oz.~~	Progressive Ft. & Oz..	Average Assay
0;0 - 12.0	Casing			⅝ Cm.		
- 83.6	Pink-grey granite - 0.4 L.C. @ 44.0 last few feet shows slight alteration but ~~in~~ no copper at all.					
- 89;0	Fine grained dark rock - cannot see any contact with diabase so presume it may be diabase also - 25% Cts. some chalco - brecciation and a few small vugs	E4748	5.4	0.74		
- 93.0	Diabase a few N.C.S. trace chalco @ 89.8					

Walter Maybank

APPENDIX II

(REPORT BY OJA) (1969)

REPORT ON THE

ELECTROMAGNETIC SURVEY

ADDICKS CANADIAN PROPERTIES INC.

GLACIER CREEK PROJECT

GEORGIA LAKE AREA

THUNDER BAY MINING DIVISION

NTS 42-B-4

The Glacier Creek property lies 100 miles northeast of Port Arthur, Ontario and about 25 miles southeast of Lake Nipigon. The property consists of 31 unpatented claims numbered TB 136907 to 136926 inclusive, TB 138863 to 138871 inclusive, TB 138561 and TB 139631.

The property may be reached by travelling along Highway

17 to a point about 14 miles east of Nipigon, Ontario from where an all weather haulage road leads to Camp 81 about 30 miles north of the highway at Kama Bay. About 1.2 miles beyond Camp 31 a bush road branches to the northeast from the main haulage road. The centre of the Addicks property lies about 3 miles northeast of the main haulage road. Lakes in and around the property are too small for use by conventional aircraft.

The topography in the area of the property is generally gently rolling, Precambrian terrain with a relief of approximately 100 to 150 feet. The surface is more rugged in the northern portion especially along the numerous fault scarps, but the south half of the property is fairly flat. All but the northern portion of the ground has been cut and is covered by a network of timbering roads. The present property was staked in 1968. The last work performed on the property prior to the present endeavours dates back several years and is reported in the Ontario Department of Mines publication PR 1964-6 Summary of Field Work 1964, page 54. Some diamond drilling was performed at this time in the area known as the bornite showing. Prior to that very little work was done despite the fact that the ground had been staked during the lithium staking rush in the Beardmore area in the late 1950's.

An electromagnetic survey, some self-potential checking and additional trenching was performed during the summer of 1969

by Addicks Canadian Properties Inc.

GENERAL GEOLOGY

The Glacier Creek property is underlain primarily by steeply dipping, granitic gneiss striking approximately north 40° east. The formations contain some remnant sedimentary bands as well as areas that are almost completely converted to granitic or pegmatitic phases. (See Ontario Department of Mines Geological Report 31 - Georgia Lake Area 1965). The most important structural feature on the property, and in the immediate area, is the Glacier Creek fault that traverses the property from north to south. The fault zone can be traced along a continuous topographic depression from Nipigon Bay on Lake Superior in a direction north 20° east for a distance of 30 miles through the Addicks property and onward to the vicinity northeast of Barbara Lake. The economic significance of the Glacier Creek fault is the fact that it is bordered by a breccia zone ranging to approximately 100 feet or more in width. Sulphide mineralization, composed of chalcopyrite and pyrite predominantly accompanying the breccia-filling quartz, has been found at many points along the entire length of the Glacier Creek fault zone. Dark grey to black, fine-grained, chloritized, brecciated, dioritic material appears to have welled into the fault zone prior to the final phases of brecciation and quartz and sulphide mineralization.

Numerous northeasterly-and northwesterly-striking fault zones intersect the main fault zone and are considered to be penecontemporaneous. Although movement may have occurred along the multitude of faults at the same time, there appears to be little, if any, offset of the Glacier Creek fault by the transecting faults. On the other hand, it is not known, at present, whether or not the northeast and northwest trending faults are displaced by the main northward striking Glacier Creek fault. If the primary movement along the fault zones had been nearly vertical only slight fault-slip separations would have occurred. Evidence, to date, is too meager to arrive at more definite conclusions.

All the fault zones are economically important since copper mineralization occurs in the brecciated borders of the fault zones. Nowhere can the faults, themselves, be observed, simply because the broken, weakened breccia material has been removed by glaciation and the faults now occupy depressions ranging from a few 10's of feet to an excess of 1000 feet in width.

It is geologically interesting to note, and economically important to consider, the fact that the fault zones intersect all geological formations including the Keweenawan diabase sills and sediments along the length of the Glacier Creek fault. While the early Precambrian formations are some 2500 million

years old, the stresses relieved by the complex faults in the Glacier Creek area must post-date Keweenawan sedimentation and diabase intrusion and must, therefore, be less than 1100 million years, the age determined for the period of intrusion. The sulphide mineralization being even younger than the fault zone may then be related genetically in time and space to the important Keweenawan copper deposits of northern Michigan and to similar copper mineralization occuring in breccia zones at the Tribag Mine north of Sault Ste. Marie, Ontario.

MINERALIZATION

Copper mineralization has been found in four parts of the Addicks property to date. As stated earlier, prospecting is seriously hampered by the fact that the fault traces always occur in depressions and mineralization can only be detected if the breccia zone is extensive enough to be revealed in outcrops along the edges of the fault-controlled depressions. For the present time, the four showings are being designated as the south, bornite, north and northwest showings.

The south showing was discovered by routine prospecting and lies in the west central part of the property. Chalcopyrite and pyrite occur with quartz cutting the granite gneisses and meta-diorite on the edge of a four-foot scarp bordering a north

40° east trending fault depression about 40 feet wide. The sulphide and quartz stringers and veins, as well as the meta-diorite strike parallel to the fault depression. Grab samples of sulphide mineralization from the several trenches exposing this showing for a length of about 100 feet assayed as shown below:

Cu	Au	Ag
8.42	Tr.	0.34
7.79	0.01	Tr.
9.65	0.01	Tr.
3.30	Tr.	Tr.
2.26		

The bornite showing occurs in the north central part of the property. This showing was trenched and diamond drilled prior to 1964. The trenches expose the mineralized zone for a length of about 600 feet in a direction north 20° east, parallel to the main Glacier Creek fault, which lies about 400 feet to the east. Selected grab samples of the bornite and chalcopyrite from the trenches gave the following assay results:

Cu	Au	Ag
1.44	nil	Tr.
5.42	Tr.	0.62
4.44		

The north zone occurs about 600 feet northeast of the bornite showing on the edge of an approximately 100 foot high

hill bordering Glacier Creek. The fault zone transects the residual bedding and gneissosity of the granite, but quartz stringers and chalcopyrite veining and dissemination in the granite follows the main fault zone and transects the gneissosity of the formations. A selected grab sample assayed as follows:

Cu	Au	Ag
3.25	Tr.	0.20

Material similar to that in the south zone occurs in the northwest showing which was found at the close of the prospecting season. Additional work will have to be done on this northwest striking fault zone.

Since several faults are known to intersect the Glacier Creek fault, it is interesting to contemplate the nature and extent of brecciation resulting from the interaction of these intersecting fault zones. Two or more intersecting faults having opposing sides in movement during any one period of geological history will necessarily result in vast brecciation of the rocks in the area of intersection. Even if movement along both fault directions is recurrent, a great deal of shattering will occur at the points of intersection, simply because each fault will be trying to displace the other, creating a large area of brecciation at the point of original intersection. The

only time, two or more faults may intersect one another without a tremendous amount of fracturing at the point of intersection, will occur when all the movement along the fault zones occurs in the direction parallel to the line formed by the trace of the intersection of the various fault planes. Even under these conditions, because rocks are not homogeneous, and because faults are not perfectly planar, considerable additional brecciation will occur at the points of intersecting faults as opposed to other parts of the fault zones.

Because fault planes are sinuous and curved, areas of dilation and compression develop at various points along the fault surfaces. Variations in quantity and quality of brecciation are to be anticipated, therefore, these variations may be very influential in the locating or development of ore bodies.

ELECTROMAGNETIC SURVEY

The Electromagnetic Survey on the Glacier Creek property was performed with a longwire galvanic electromagnetic unit which is described more fully in the appendix to this report. Briefly, however, 270 volts at a current of 0.75 amps was directed into the property at a frequency of 1000 cycles and the electromagnetic response was recorded at 100-foot intervals along lines cut at 300-foot intervals. The baseline was run in a north-south direction through the central part of the property and the electrodes were placed at the north and south ends of the property so that the

bulk of the current was available to the formations underlying the property. A total of 38 line miles were covered by the survey. The northern electrode was originally placed in a lake at the northwest corner of the property but under this configuration, it was found that insufficient current was delivered to the large granitic hill in the northeast part of the property. In order to distribute the current better, the northern electrode was placed in a small lake at the north end of the baseline which provided for more current in the central part of the property as well as in the previously deficient northeast corner.

The enclosed map showing the electromagnetic response in contour form indicates that the bulk of the current was concentrated along the Glacier Creek fault zone which is followed in the most part by Glacier Creek itself. The accumulations of current at the north and south ends of the fault zone are caused by the proximity of the respective electrodes.

Specific tests run over the bornite showing and the south showing did not indicate appreciable increase in conductivity. This is attributed to the fact that the sulphides are generally disseminated within the intrusive meta-diorite and the quartz introduced into the brecciated fault zone. While locally, sufficient sulphides accumulate to create short, narrow, massive bands, apparently these zones are insulated one from the other so that very little conductance is achieved along the mineral zones.

Profiles of the electromagnetic response along lines 27 south and 33 south accompanying the contour map in this report reveal a broad peak about 600 feet wide with "shoulders" on both sides of the central peak which should represent the current flowing along the fault zone. The "shoulders", caused by additional current flowing on both sides of the fault, may represent an accumulation of sulphide mineralization in the breccia. The "shoulders" are exemplified best on line 27 south. It would appear from profile 33 south that additional current is indicated only on the west side of the fault.

Because of the lack of significant electromagnetic response over the known areas of mineralization, self-potential testing was conducted over the same areas. Once again, it was found that an insufficient increase in self-potential response was available over the mineralized area to warrant the completion of a self-potential survey over the entire property.

It was discovered that the meta-diorite was not sufficiantly magnetic to be detected with a magnetometer having a sensitivity of plus or minus 20 gammas. It was decided, therefore, to discard the magnetometer survey also despite the fact that other geological information might be gained through use of the magnetometer.

CONCLUSIONS AND RECOMMENDATIONS

In view of the rather unsatisfactory results obtained through use of electromagnetic, self-potential and magnetometer surveys and testing on the property at present it can be recommended only that at least two diamond drill holes be directed at the electromagnetic anomaly which occurs on the Glacier Creek fault centered about line 24 south. The results of such drilling will naturally indicate what further work should be considered in that area. Because of the rather extensive sand plain in the area of the electromagnetic anomaly, it is impossible to assess the survey results geologically because of the lack of rock outcrops.

As mineralization has been found in areas of only light overburden, generally beside depressions containing faults responsible for the brecciation in which the sulphide mineralization occurs, it is recommended that a detailed investigation of aerial photographs be conducted and geochemical samples obtained along the length of every depression so detected. Because most of the depressions are reasonably well drained and oxidizing conditions are expected to occur within them, positive results should be available if copper mineralization does occur. It is estimated that positive results should be available for about 80% of the fault zones that are presently known to occur. On the other hand, the remaining 20% of the fault zones are overlain by more extensive, wet, bogs as in the case of the Glacier Creek fault. Because of the ground water conditions it is ex-

pected that positive reactions could not occur under these wet, saturated conditions.

Apart from drilling of the main Glacier Creek anomaly, several holes should be directed at each of the three main copper occurrences on the property. It is estimated that a minimum of 1,800 feet of drilling should be distributed approximately equally in each of the three areas. An additional 700 feet should be devoted to the main electromagnetic anomaly on Glacier Creek, bringing the total footage to 2,500 feet. It is estimated that the total cost of drilling will be approximately $12.00 per foot or $30,000. Supervision, geological consulting, mapping, assaying and perhaps additional limited prospecting is estimated at $10,000 resulting in a total estimated expenditure of $40,000.00.

R. V. OJA, PH. D., P. ENG.
OJA LTD.
EXPLORATION MANAGEMENT

Port Arthur, Ontario
November 20, 1969

GLACIER CREEK. OCT. 16, 1989.

- ADDENDUM TO REPORT : RECENT RETURN OF RECONNAISSANCE EVALUATION REPORT BY GOLDFIELDS CANADIAN MINING LIMITED ON BEHALF OF DAVE KUKKER.

NOTE ELEVATED GOLD VALUES WITH THE COPPER AT LOCATIONS EK-1 (.139 ORIGINALLY) TO 0.13 OZ/TON AU ACROSS 2'-0" AT EK-1B, AND 0.13 OZ/TON GRAB SAMPLE AT EK-2 B.

SEE ATTACHMENT.

GOLD FIELDS CANADIAN MINING LIMITED
A Consolidated Gold Fields Group Company

Citibank Place
123 Front Street West, Suite 909
Toronto, Ontario M5J 2M2
(416) 865-0945
Fax (416) 865-0641

September 27, 1989

Mr. David Kukkee
R. R. # 1
South Gillies, Ontario
P0T 2V0

Dear Dave:

Enclosed please find sketch maps, assay sheets, and certified receipts, in duplicate, covering the reconnaissance evaluation carried out by Gold Fields Canadian Mining in August 1989.

Best regards.

Yours truly,

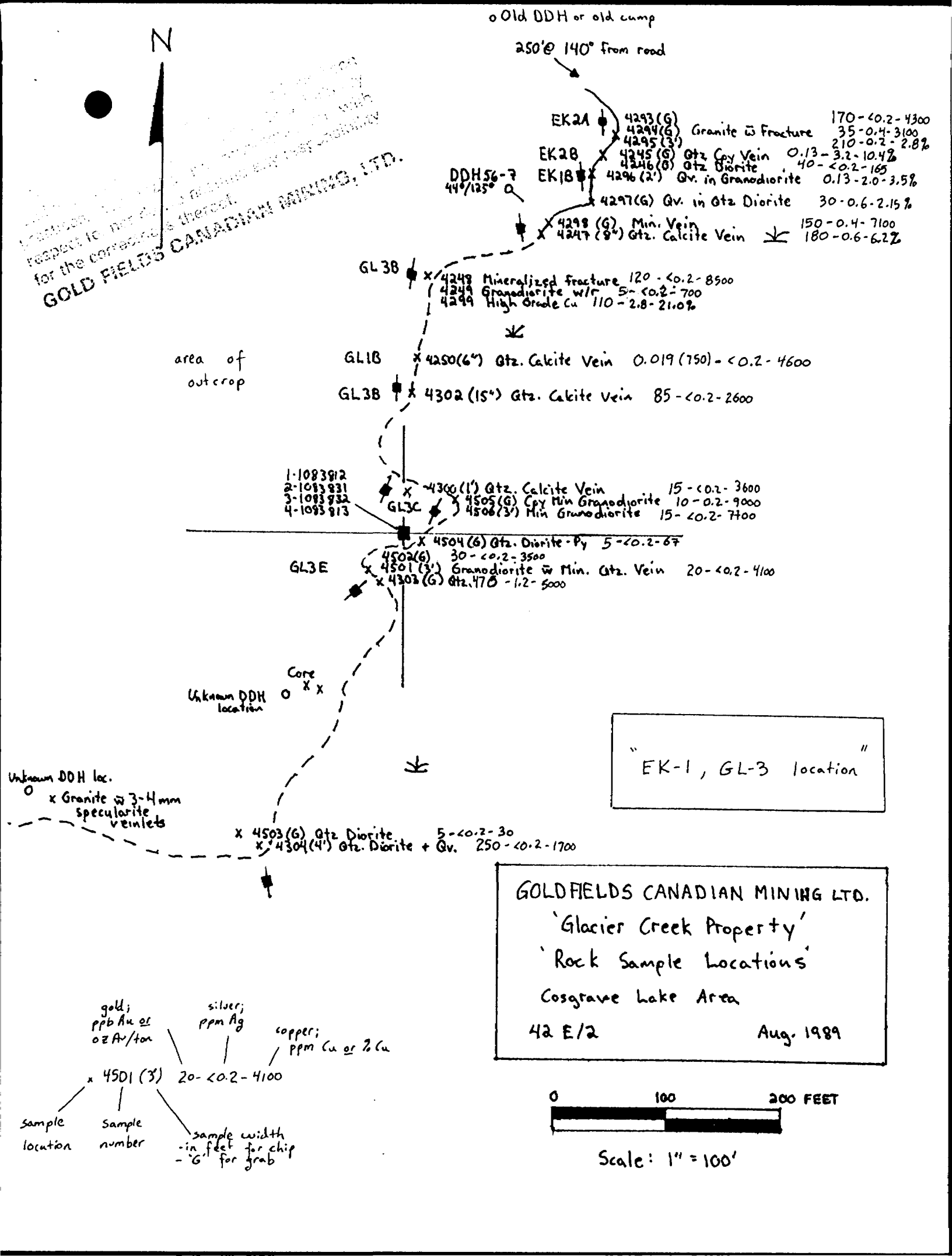
GOLD FIELDS CANADIAN MINING LIMITED

Driffield M. Cameron

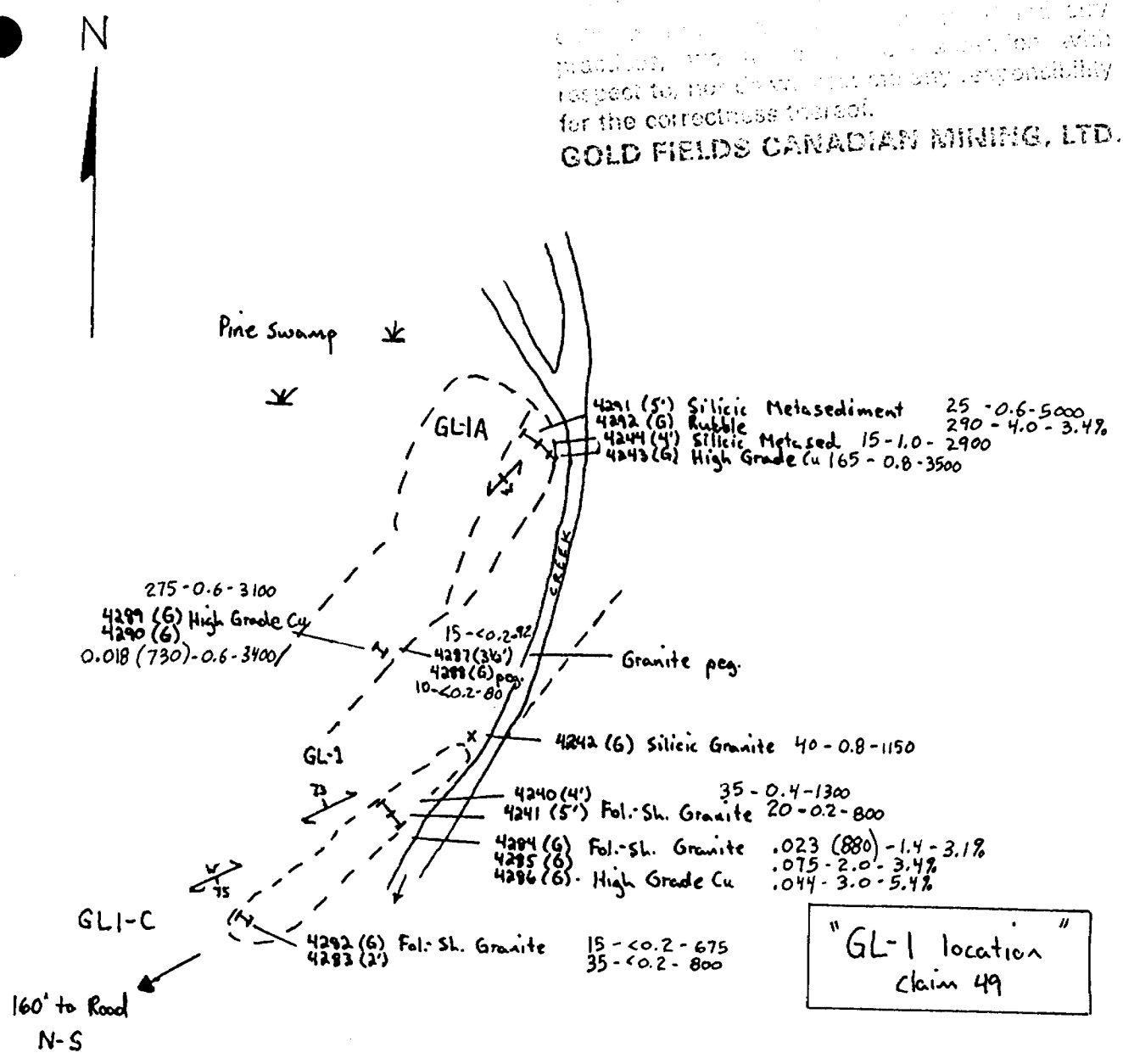
Driffield M. Cameron,
Senior Geologist

DMC/jmc
encl: 20

CC: W. Ewert
C. McLachlan

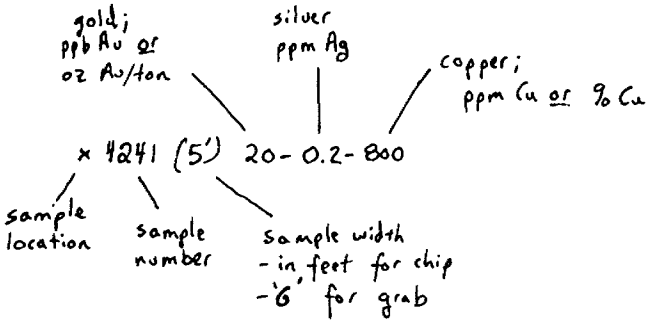

N
o Old DDH or old camp
250'@ 140° from road
EK2A
4293(G)
4294(G) Granite w Fracture
4295(3')
170 - <0.2 - 4300
35 - 0.4 - 3100
210 - 0.2 - 2.8%
EK2B
4245(G) Qtz Cpy Vein
4246(8) Qtz Diorite
0.13 - 3.2 - 10.4%
40 - <0.2 - 165
DDH 56-7
44°/125° O
EK1B
4296(2') Qv. in Granodiorite
0.13 - 2.0 - 3.5%
4297(G) Qv. in Qtz Diorite
30 - 0.6 - 2.15%
4298 (G) Min. Vein
4247 (8") Qtz. Calcite Vein
150 - 0.4 - 7100
180 - 0.6 - 6.2%
GL3B
4248 Mineralized fracture
4249 Granodiorite w/r
4299 High Grade Cu
120 - <0.2 - 8500
5 - <0.2 - 700
110 - 2.8 - 21.0%
area of outcrop
GL1B
4250(6") Qtz. Calcite Vein
0.019 (750) - <0.2 - 4600
GL3B
4302 (15") Qtz. Calcite Vein
85 - <0.2 - 2600
1-1083812
2-1083831
3-1083832
4-1083813
4300 (1') Qtz. Calcite Vein
15 - <0.2 - 3600
GL3C
4505(G) Cpy Min Granodiorite
10 - 0.2 - 9000
4506(3') Min Granodiorite
15 - <0.2 - 7100
4504(6) Qtz. Diorite - Py
5 - <0.2 - 67
4502(6)
30 - <0.2 - 3500
GL3E
4501 (3') Granodiorite w Min. Qtz. Vein
20 - <0.2 - 4100
4303(G) Qtz. 470 - 1.2 - 5000
Core
Unknown DDH location
Unknown DDH loc.
x Granite w 3-4mm specularite veinlets
4503(G) Qtz Diorite
5 - <0.2 - 30
4304(4') Qtz. Diorite + Qv.
250 - <0.2 - 1700
"EK-1, GL-3 location"
GOLDFIELDS CANADIAN MINING LTD.
'Glacier Creek Property'
'Rock Sample Locations'
Cosgrave Lake Area
42 E/2
Aug. 1989
gold; ppb Au or oz Au/ton
silver; ppm Ag
copper; ppm Cu or % Cu
x 4501 (3') 20 - <0.2 - 4100
sample location
sample number
sample width - in feet for chip - 'G' for grab
0
100
200 FEET
Scale: 1" = 100'

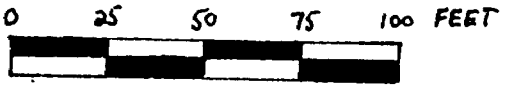
GOLD FIELDS CANADIAN MINING, LTD.



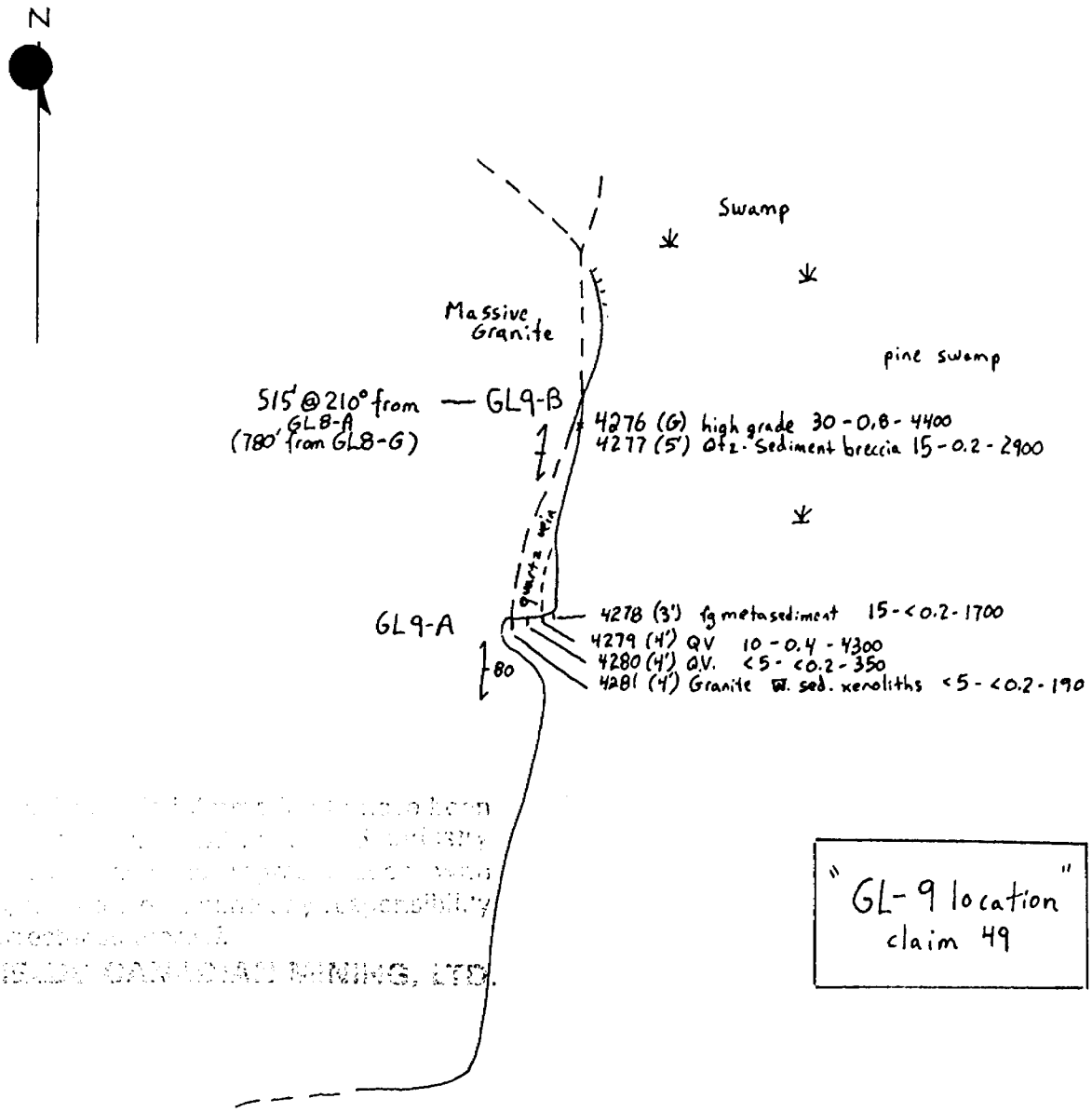
"GL-1 location"
claim 49

GOLDFIELDS CANADIAN MINING LTD.
'Glacier Creek Property'
'Rock Sample Locations'
Cosgrave Lake Area
42 E/2 Aug. 1989





Scale: 1" = 50'



gold; ppb Au or oz Au/ton

silver; ppm Ag

copper; ppm Cu or % Cu

x 4280 (4') <5 - <0.2 - 350

sample location

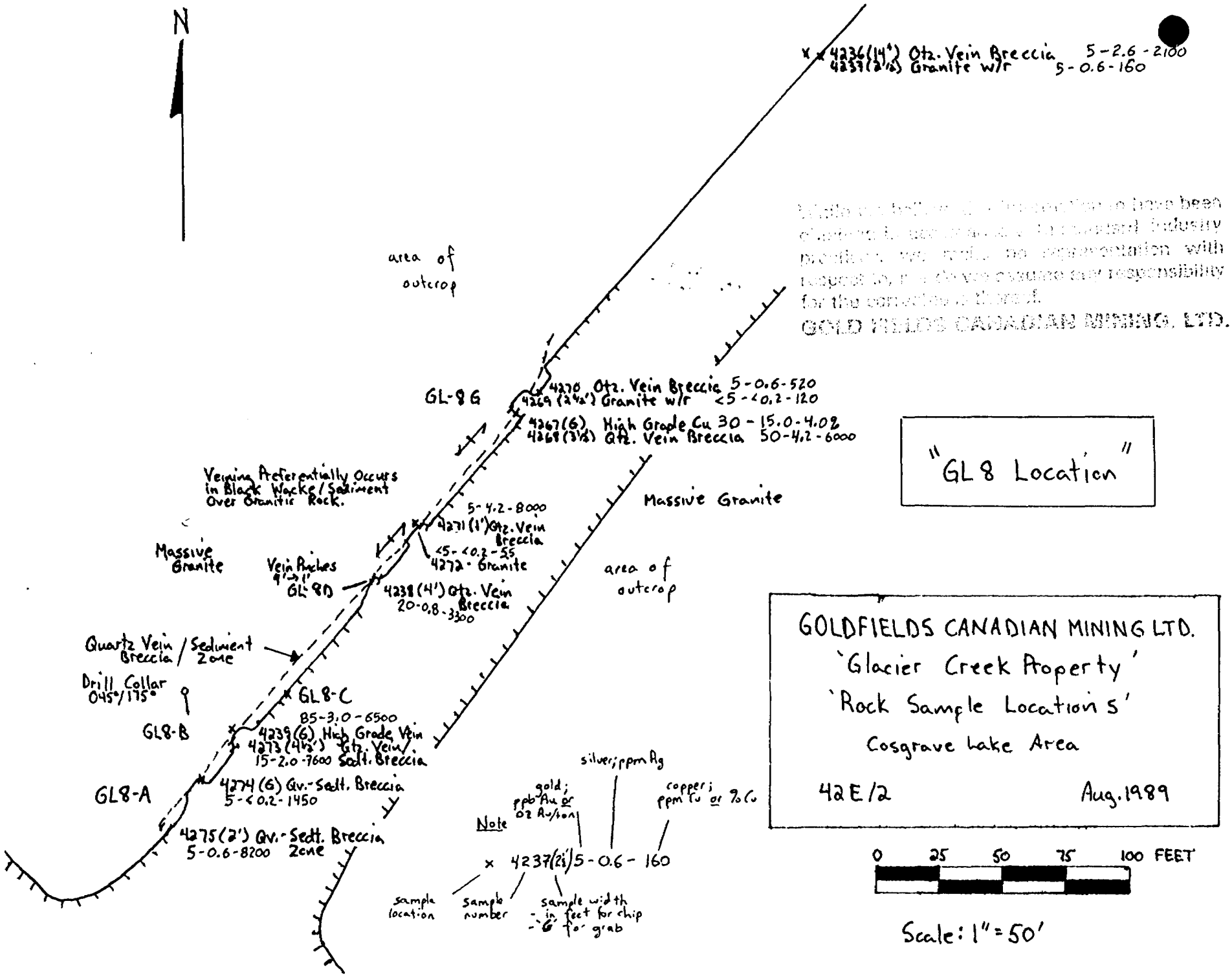
sample number

sample width - in feet for chip - 'G' for grab

GOLDFIELDS CANADIAN MINING LTD.
'Glacier Creek Property'
'Rock Sample Locations'
Cosgrave Lake Area
42E/2 Aug. 1989

0 25 50 75 100 FEET

Scale: 1"=50'



"GL 8 Location"

GOLDFIELDS CANADIAN MINING LTD.

'Glacier Creek Property'

'Rock Sample Locations'

Cosgrave Lake Area

42 E/2 Aug. 1989

TECHNICAL SERVICE LABORATORIES
DIVISION OF BUR IER TECHNICAL ENTERPRISES LIMITED
1301 FEWSTER DRIVE
MISSISSAUGA, ONTARIO
L4W 1A2
(416) 625-1544 FAX: (416) 625-8368

INVOICE

INVOICE NO. 12075M

Aug. 31 1989

TO: Gold Fields Canadian Mining Ltd.
University Place
123 Front Street West, Suite 909
Toronto, Ont. M5J 2M2

REF. NO. M6039
P.O. #
#RC 339 R
G035

CODE		DESCRIPTION	UNIT PRICE	TOTAL
(9)	58	Det. Au by FA/AA	$ 7.35	$ 426.30
(8)	19	Det. Au by FA	7.35	139.65
(8)	4	Det. Au & Ag by FA	13.80	55.20
(9)	58	Det. Ag & Cu - Geochem	3.45	200.10

Paid Sept 21/89
J. Wisson

--------- Please Pay --------- $ 821.25

PLEASE ENCLOSE COPY OF INVOICE WITH PAYMENT - TERMS NET 30 DAYS

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1301 FEWSTER DRIVE
MISSISSAUGA, ONTARIO
L4W 1A2
(416) 625-1544 FAX: (416) 625-8368

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM

Gold Fields Canadian Mining Ltd.
University Place
123 Front Street West, Suite 909
Toronto, Ont. M5J 2M2

REPORT No.
M6039

SAMPLE(S) OF Pulp

INVOICE #:
P.O.:

#RC 339 R

	Gold Au ppb	Gold Au oz/t	Silver Ag oz/t
RC 4236	5		
RC 4237	5		
RC 4238	20		
RC 4239	85		
RC 4240	35		
RC 4241	20		
RC 4242	40		
RC 4243	165		
RC 4244	15	<0.005	
RC 4245	>1000	0.13 (0.13, 0.13, 0.13)	
RC 4246	40	<0.005	
RC 4247	180		
RC 4248	120		
RC 4249	5	<0.005	
RC 4250	750	0.019	
RC 4267	30	<0.005	
RC 4268	50		
RC 4269	<5		
RC 4270	5		
RC 4271	5		

COPIES TO: D.Cameron
INVOICE TO: Toronto

Aug 30/89

GOLD FIELDS CANADIAN MINING, LTD.

SIGNED

CTA

For enquiries on this report, please contact Customer Service Department.
Samples, Pulps and Rejects discarded two months from the date of this report.

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGENER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE
MISSISSAUGA, ONTARIO
L4W 1A2
(416) 625-1544 FAX: (416) 625-8368

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM

Gold Fields Canadian Mining Ltd.
University Place
123 Front Street West, Suite 909
Toronto, Ont. M5J 2M2

REPORT No.
M6039

SAMPLE(S) OF Pulp

INVOICE #:
P.O.:

#RC 339 R

	Gold Au ppb	Gold Au oz/t	Silver Ag oz/t
RC 4272	<5		
RC 4273	15		
RC 4274	5		
RC 4275	5		
RC 4276	30		
RC 4277	15		
RC 4278	15		
RC 4279	10		
RC 4280	<5		
RC 4281	<5		
RC 4282	15		
RC 4283	35	<0.005	
RC 4284	880	0.023	
RC 4285	>1000	0.075 (0.076, 0.076, 0.072)	
RC 4286	>1000	0.044 (0.044, 0.043, 0.044)	
RC 4287	15	<0.005	
RC 4288	10		
RC 4289	275		
RC 4290	730	0.018	
RC 4291	25		

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GOLD FIELDS CANADIAN MINING, LTD.

SIGNED M. Hamm

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Gold Fields Canadian Mining Ltd.
University Place
123 Front Street West, Suite 909
Toronto, Ont. M5J 2M2

REPORT No.
M6039

SAMPLE(S) OF Pulp

INVOICE #:
P.O.:

#RC 339 R

	Gold Au ppb	Gold Au oz/t	Silver Ag oz/t
RC 4292	290		
RC 4293	170		
RC 4294	35		
RC 4295	210	0.006	
RC 4296	>1000	0.13 (0.14, 0.12, 0.12)	
RC 4297	30	<0.005	
RC 4298	150		
RC 4299	110		
RC 4300	15		
RC 4501	20		
RC 4502	30		
RC 4503	5		
RC 4504	5		
RC 4505	10		
RC 4506	15		
RC 4302	85		
RC 4303	470		
RC 4304	250		

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Aug 30/89

GOLD FIELDS CANADIAN MINING, LTD.

SIGNED M. Gunn

CTA

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGENER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE
MISSISSAUGA, ONTARIO
L4W 1A2
(416) 625-1544 FAX: (416) 625-8368

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Gold Fields Canadian Mining Ltd.
University Place
123 Front Street West, Suite 909
Toronto, Ont. M5J 2M2

REPORT No.
M6039

SAMPLE(S) OF Pulp

INVOICE #:
P.O.:

#RC 339 R

	Copper %
RC 4245	10.4
RC 4247	6.2
RC 4267	4.0
RC 4284	3.10
RC 4285	3.40
RC 4286	5.4
RC 4292	3.4
RC 4295	2.80
RC 4296	3.50
RC 4297	2.15
RC 4299	21.0

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INVOICE TO: Toronto

Sep 11/89

SIGNED M. Gunning

CTA

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