

010

KIDD CREEK MINES LTD.
 REPORT ON REVERSE CIRCULATION
 OVERBURDEN DRILLING
 IN
 MACKLEM TOWNSHIP
 NTS: 42 A/7

CLAIMS: P-849499 TO P-849502 INCLUSIVE, P-852390 TO
 P-852413 INCLUSIVE, P-866751 TO P-866758 INCLUSIVE,
 P-867792, P-867796, AND P-871606 TO P-871613 INCLUSIVE

APRIL 1987

PHILIP W. J. ALCOCK

RECEIVED

APR 26 1987

MINING LANDS SECTION

SUMMARY OF COSTS

DRILLING COSTS

Total meterage/footage drilled: 733.7 m/2407.2 feet

Total drilling cost: \$13,704.40

Broken down as follows:

Drill hours: 54.5 @ \$185.00/hr: \$10,082.50

Down Time hours: 4.5 @ \$75.00/hr: \$337.50

Tricone bits: 4.0 @ \$600.00 + 15%: \$2,760.00

Adaptors: 1.0 @ \$456.00 + 15%: \$524.40

Total Cost per metre/foot: \$18.68 per m /\$5.69 per foot

LABOUR COSTS

7 days (@ \$150.00/day) (drill geologist) \$1050.00

3.5 days (@ \$150.00/day) (log and data write-up) \$525.00

SAMPLE PROCESSING COSTS

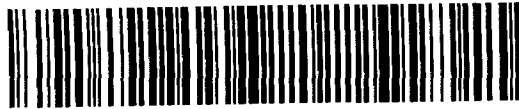
55 samples @ \$15.00: \$825.00

ANALYTICAL COSTS

Total from NAS invoices (40 large @ \$14.00 and \$725.00
15 medium @ \$11.00)

TOTAL COST \$16,829.40

TOTAL ASSESSMENT DONE (Days) 1,122.0



42A07NW0018 2.10023 MACKLEM

010C

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SAMPLE COLLECTION, SAMPLE PREPARATION AND ANALYTICAL METHODOLOGY

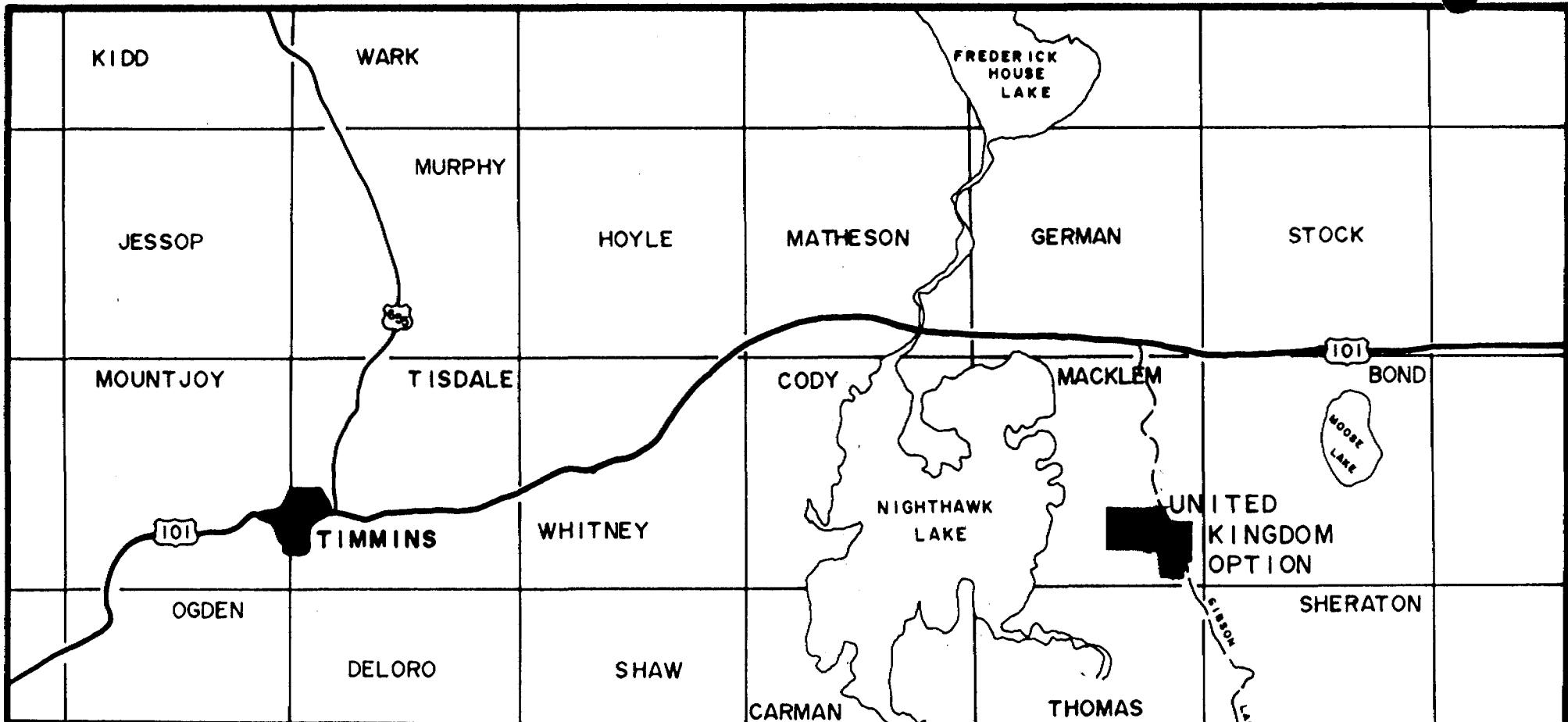
Introduction

Overburden drilling by Kidd Creek Mines Ltd., a wholly owned subsidiary of Falconbridge Ltd., took place on the claim group in Macklem Township (Figures 1 and 2) on October 8 to 17, 1986. Bradley Brothers Ltd. of Timmins, Ontario, were contracted to do the reverse circulation drilling. X-Ray Assay Laboratories Ltd. of Don Mills, Ontario, completed the sample analyses. Invoices of drilling and analytical costs, cheques showing expenses paid and overburden drill logs are provided in the appendices.

Reverse circulation drill holes QT86-122 to QT86-137 inclusive (Figure 3) are being submitted in application for assessment work credits to 46 of the following 48 contiguous claims: P-805786, P-805787, P-849499 to P-849502 inclusive, P-852390 to P-852413 inclusive, P-866751 to P-866758 inclusive, P-867792, P-867796, and P-871606 to P-871613 inclusive in Macklem Township. No additional assessment work credit can be applied to P-805786 and P-805787.

Sample Collection

A Nodwell-mounted Longyear "38" reverse circulation drill rig, belonging to Bradley Brothers Ltd., is employed to obtain samples of overburden and bedrock. A 6.7 cm tricorne bit with tungsten carbide buttons is used to cut through the overburden and bedrock. Sample materials are obtained by pumping water, sometimes with compressed air,



KIDD CREEK MINES LTD.

Exploration Division Timmins, ONTARIO

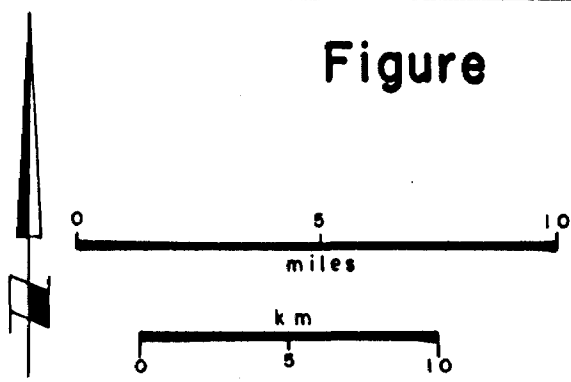
UNITED KINGDOM OPTION
MACKLEM 25
MACKLEM Twp.

PROPERTY LOCATION

SCALE: 1 : 250,000 Date: Alcock

Drawn: DEL Project N°: 8104 Date: 12/02/87

Figure 1



NIGHTHAWK

LAKE



BOND TWP.

Figure 2

KIDD CREEK MINES LTD.

Exploration Division Timmins, ONTARIO

UNITED KINGDOM OPTION
MACKLEM 25
MACKLEM Twp.

CLAIM LOCATION MAP

TRACED FROM GOVERNMENT MAP

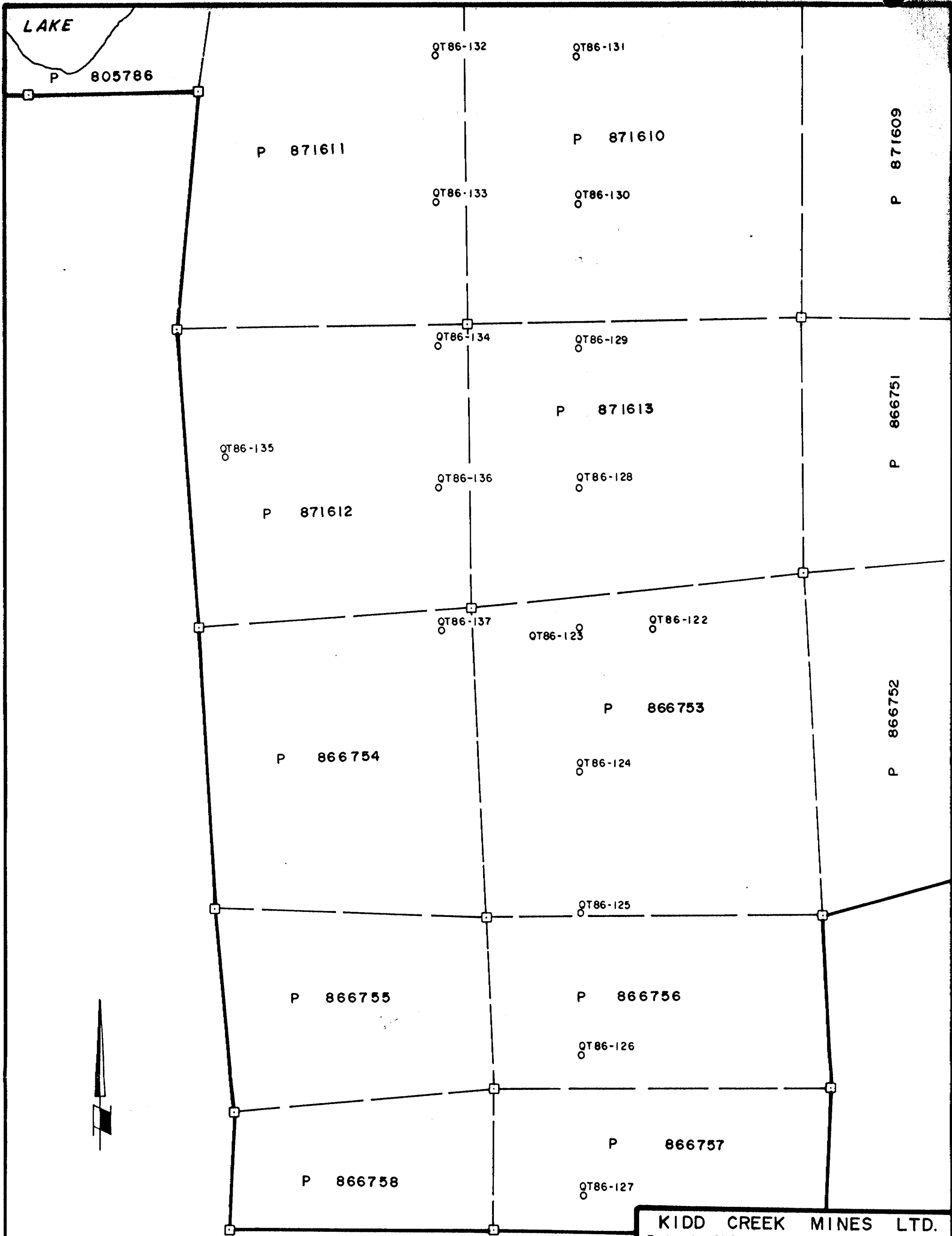
SCALE 1 : 20,000 Date: Alcock

Drawn: DEL Project No: Date: 06/04/87



MACKLEM Twp.

THOMAS Twp.



QT86-122 to 137 KIDD CREEK MINES LTD. OVERBURDEN DRILL HOLES, 1986

KIDD CREEK MINES LTD.		
Exploration Division		Timmins, ONTARIO
UNITED KINGDOM OPTION		
MACKLEM 25		
MACKLEM Twp.		
OVERBURDEN DRILL HOLE LOCATIONS		
SCALE	1 : 5,000	Data : Alcock
Drawn : DEL	Project No :	Date : 06 / 04 / 87

Figure 3

down the outer tube of the dual tube rods to the bit/sediment interface where the water and cuttings of overburden or bedrock are flushed up the inner tube to the surface (Figure 4).

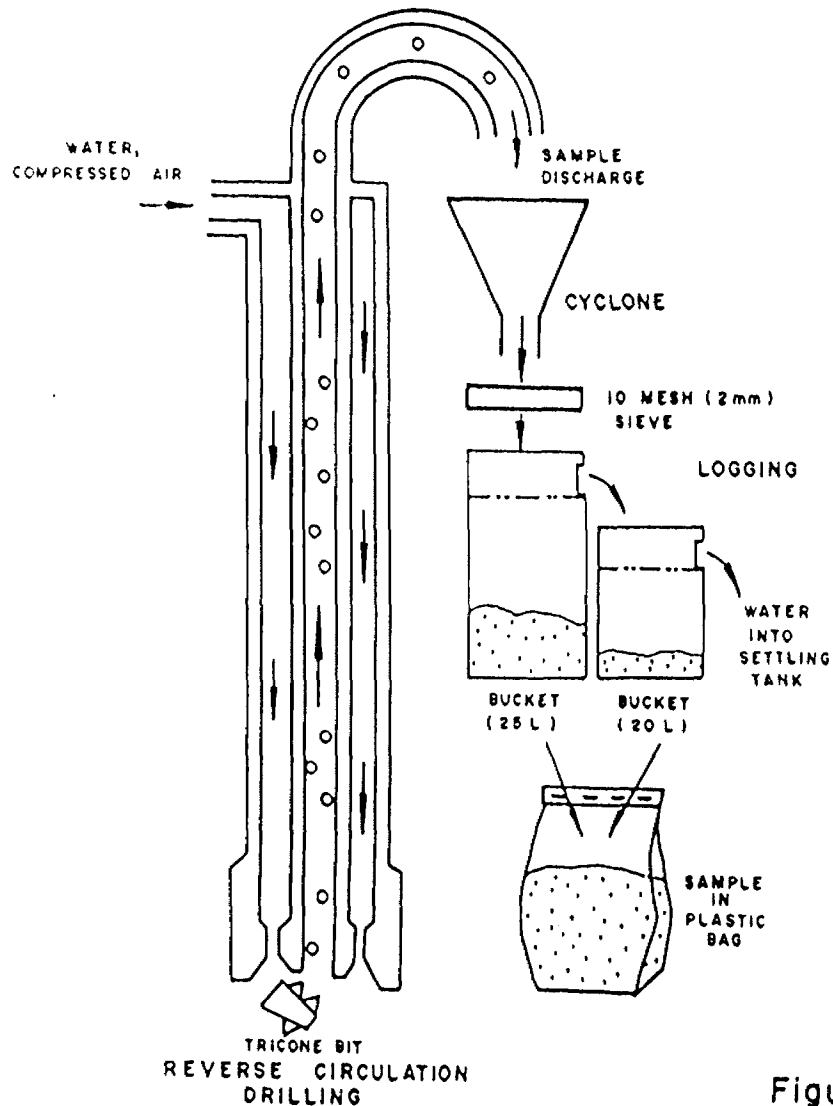
At surface, the sample slurry is discharged into a cyclone to reduce the water pressure and velocity before emptying into a 25 L bucket. A second 20 L bucket receives the overflow from the first bucket, thereby preventing undue loss of fine materials. The overburden sample is allowed to settle in the buckets prior to decanting and bagging. All material in the 25 L and 20 L buckets is included in the sample. Overflow from the second bucket empties into a settling tank and the water is reused in the drilling.

The overburden slurry is examined and logged by the Quaternary geologist as it flows from the cyclone into the first bucket. A 2 mm (10 mesh) sieve is inserted between the cyclone and bucket to obtain material for examination (Figure 4). When sampling, every effort is made to avoid mixing different genetic types of overburden. Accordingly, the interval sampled is controlled by the thickness of the overburden units. Within an overburden type, the maximum sample interval taken is generally no greater than 2 metres (6 to 7 ft). This usually gives about a 5 kg bulk sample and, in most instances, ensures sufficient heavy minerals for geochemical analysis. Lacustrine sands, silts and clays are not sampled because of their lack of usefulness in mineral exploration.

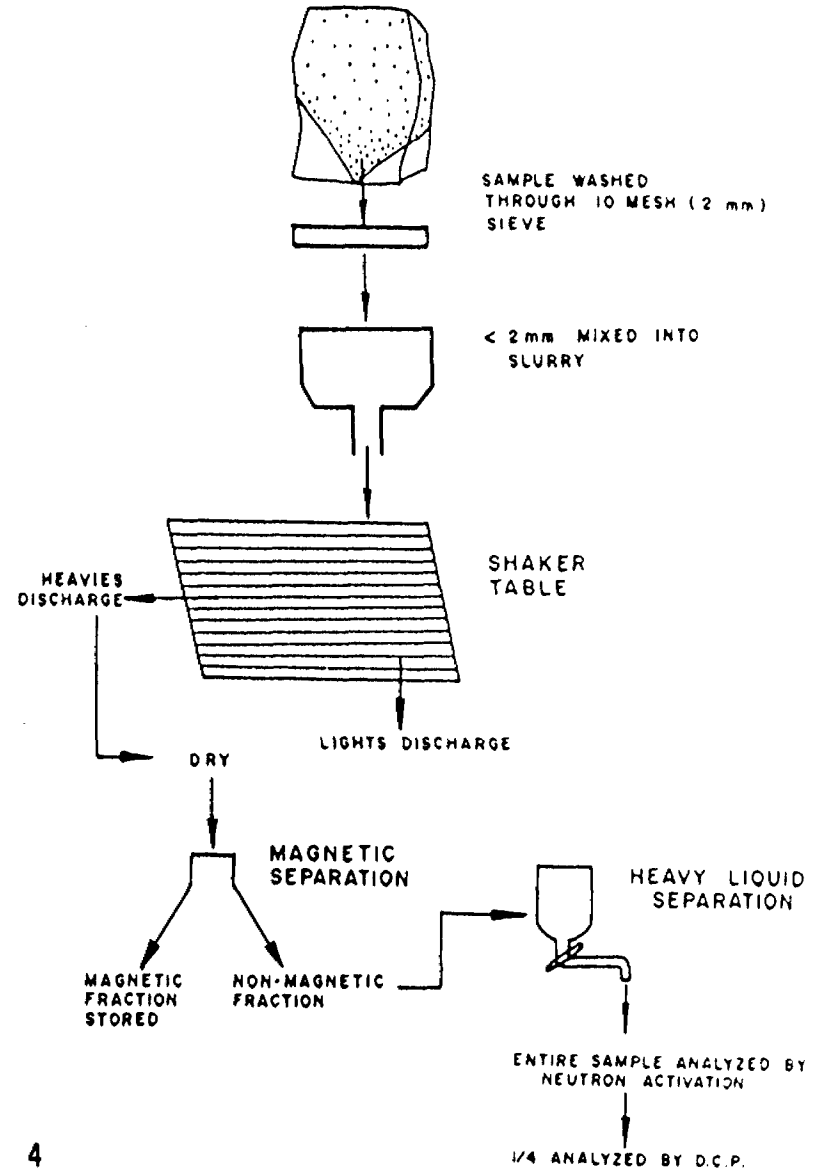
The bedrock sample consists of rock chips which are collected directly from the 2 mm screen and bagged. Usually

REVERSE CIRCULATION DRILLING & HEAVY MINERAL CONCENTRATE PREPARATION TECHNIQUES USED BY Kidd Creek Mines Ltd.

FIELD



LABORATORY



Figure

1.5 metres of bedrock are drilled to reduce the probability of stopping the hole in a boulder. In the course of the sampling, boulders are cut from the overburden samples because they may enhance or dilute trace metal levels in the overburden sample. Boulder chips larger than 2 mm may be sampled separately.

The sample interval is recorded as a depth measurement at the top and bottom of the sample. Depth is determined by counting the number of 10 or 20 foot drill rods as they are added to the rod string, and by noting the amount that the uppermost rod has penetrated the overburden.

The field notes are later transcribed by the geologist into good-copy logs and the geochemical results are added (see Appendix V). The descriptions of the overburden materials are used to classify the sediments as till, glaciofluvial, fluviolacustrine or lacustrine in origin.

Sample Preparation

Heavy mineral concentrates are prepared from the overburden samples in the laboratory at the exploration office in Timmins (Figure 4). All samples are washed through a 2 mm (10 mesh) sieve to remove all material coarser than 2 mm. The less than 2 mm materials are transferred to an elevated holding tank, thoroughly stirred by a mixer into a slurry, and released onto the sloped shaker table below. The heavier materials are separated from the lighter materials by agitation on the shaker table. The tabled heavies are dried, and the magnetic fraction removed, using a plunger magnet, and stored. The

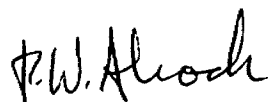
non-magnetic fraction is further concentrated using a heavy liquid (methylene iodide, S.G.= 3.3) separation technique. Occasionally small heavy mineral concentrate samples are combined, if consecutive and from the same sediment type, to ensure sufficient material for analysis.

Analytical Methodology:

The heavy mineral concentrates are routinely analyzed for Gold, Arsenic, Molybdenum, Antimony and Tungsten at Nuclear Activation Services Ltd. in Hamilton through the agency of X-Ray Assay Laboratories Ltd..

Gold, As, Mo, Sb and W are determined by non-destructive, direct irradiation neutron activation analysis on the entire unground heavy mineral concentrate. The detection limits with this method are: Au: 20 ppb; As: 2 ppm; Mo: 5 ppm; Sb: 0.2 ppm; and W: 0.01 ppm.

The heavy mineral concentrates are returned to the exploration office in Timmins when it is safe to do so and archived.



PHILIP W. J. ALCOCK

DECLARATION

I, Philip W. J. Alcock, certify that I graduated from the University of British Columbia in 1979 with a B.A. and from the University of Toronto in 1984 with a Masters of Science. While a student, I was employed during the summer months by Newmont Exploration of Canada Ltd., Labrador Mining and Exploration Company Ltd., the University of British Columbia and the University of Toronto. I was employed by Kidd Creek Mines Ltd., Exploration Division, after graduation in 1984. I have been employed by Falconbridge Ltd. since March 1986.

P.W. Alcock.

PHILIP W. J. ALCOCK

APPENDIX I

Bradley Brothers Ltd. Invoices:

October 8 to 15, 1986

October 16 to 30, 1986

1111
BAC
B&B

LEY

October 15, 1986

D

CONTRACT DIAMOND DRILLING

Kidd Creek Mines Limited
C/O Falconbridge Limited
P.O. Box 1140
Timmins, Ontario P4N 7H9

HOLE No.	TO COVER DIAMOND DRILLING FOR			FOOTAGE COMPLETED		
	FROM	TO	October 8 to 15, 1986			
	Mobilization - 36 miles			\$ 5.00	\$180	00
122	0'	144'	144'			
123	0'	220'	220'			
124	0'	123'	123'			
125	0'	105'	105'			
126	0'	74'	74'			
127	0'	79'	79'			
128	0'	196'	196'			
129	0'	167'	167'			
130	0'	170'	170'			
131	0'	144'	144'			
132	0'	184'	184'			
133	0'	140'	140'			
134	0'	140'	140'			
135	0'	184'	184'			
136	0'	145'	145'			
	Operating hours 46.5 hours			\$185.00	8,602	50
	Travelling time 5 1/2 hours X 3 men X \$25.00				412	50
	Downtime 4.5 hours X 3 men X \$25.00				337	50
	Down the hole consumables					
	4 tricone bits	\$600.00 -	\$2400.00			
	1 Adaptor	456.00 -	456.00			
			<u>2856.00</u>			
	Plus 15%		<u>428.40</u>			
					<u>3,284</u>	<u>40</u>
					<u>\$12,816</u>	<u>90</u>

BRADLEY BROS. LIMITED

October 31, 1986

CONTRACT DIAMOND DRILLING

Kidd Creek Mines Limited
C/O Falconbridge Limited
P.O. Box 1140
Timmins, Ontario P4N 7H9

HOLE No.	TO COVER DIAMOND DRILLING FOR			October 16 to 31, 1986	
	FROM	TO	FOOTAGE COMPLETED		
136	145'	216'	71'		
137	0'	128'	128'		
138	0'	91'	91'		
139	0'	172'	172'		
140	0'	119'	119'		
141	0'	178'	178'		
142	0'	46'	46'		
143	0'	123'	123'		
144	0'	74'	74'		
145	0'	134'	134'		
146	0'	102'	102'		
147	0'	82'	82'		
148	0'	95'	95'		
149	0'	58'	58'		
150	0'	63'	63'		
151	0'	65'	65'		
152	0'	110'	110'		
153	0'	144'	144'		
154	0'	132'	132'		
155	0'	138'	138'		
156	0'	210'	210'		
157	0'	60'	60'		
158	0'	247'	247'		
159	0'	40'	40'		
Operating hours					
119 hours				\$185.00	\$22,015 00
Breakdown -					
6 hours X 3 men X \$25.00					450 00
Travelling					
1 hour X 3 men X \$25.00					75 00
FORWARD					

BRADLEY BROS. LIMITED

October 31, 1986

CONTRACT DIAMOND DRILLING

Kidd Creek Mines Limited
C/O Falconbridge Limited
P.O. Box 1140
Timmins, Ontario P4N 7H9

HOLE No.	TO COVER DIAMOND DRILLING FOR		October 16 to 31, 1986			
	FROM	TO	FOOTAGE COMPLETED			
			Down the hole consumables			
			11 Tricone bits	\$600.00 - \$6600.00		
			1 Adaptor	456.00 - 456.00		
				<u>7056.00</u>		
			Plus 158	<u>1058.40</u>		8,114 40
			Float - October 17			
			68 miles	\$5.00		340 00
						<u>\$30,994 40</u>

APPENDIX II

Falconbridge Ltd. Cheques

to

Bradley Brothers Ltd.

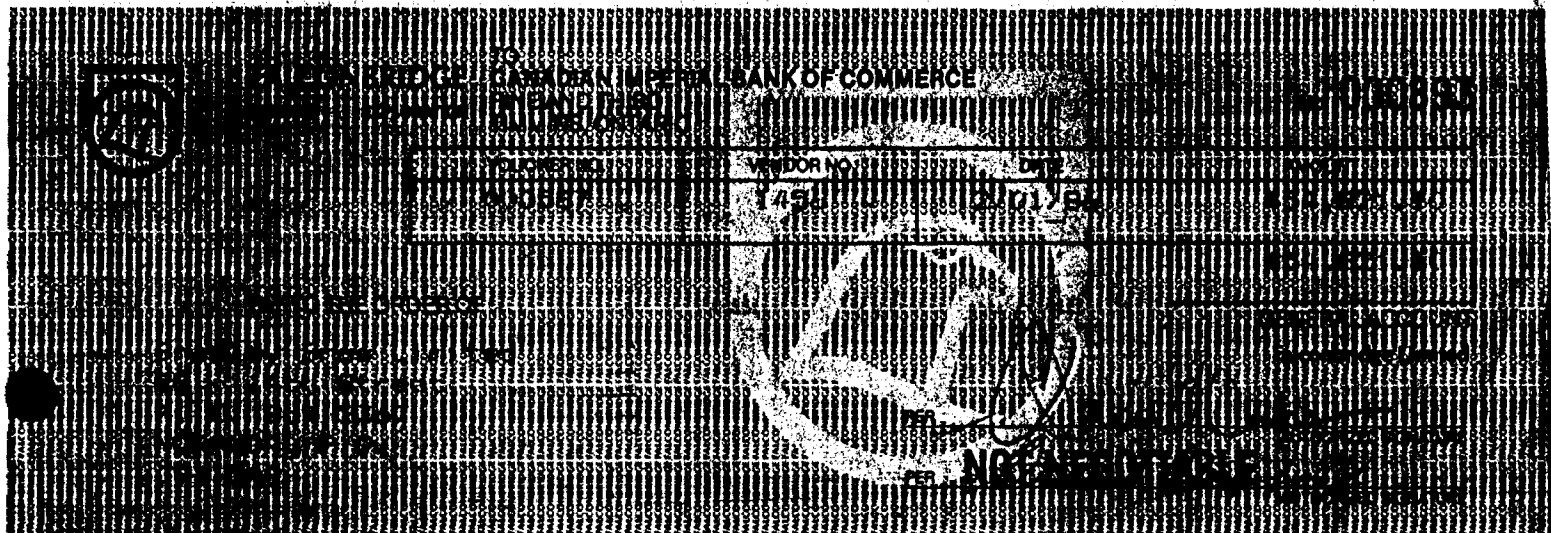
FALCONBRIDGE

THIS VOUCHER SHOULD BE DETACHED AND RETAINED BY PAYEE

No. 000587

No. 000893

INVOICE DATE MO. D. YR.	INVOICE NUMBER	REFERENCE	AMOUNT
11/04/86	151-01		7,037.50
11/05/86	CM-25-01		6,662.50
11/04/86	MD-56-01		5,984.50
11/05/86	H13723723A		22,319.70
11/05/86	07BH122-136		<u>12,816.90</u>
TOTAL			54,821.10



000492=010: 01=00811*



FALCONBRIDGE TO CANADIAN IMPERIAL BANK OF COMMERCE
 TIMMINS EXPLORATION PINE AND THIRD
 TIMMINS, ONTARIO

No. 000893

VOUCHER NO.	VENDOR NO.	DATE	AMOUNT
000587	1456	12/01/86	\$54,821.10
			\$54,821.10

PAY TO THE ORDER OF

Bradley Bros. Limited
 1411 Street
 Timmins, Ont.
 NORANDA P.D.
 TPX 5AP

GENERAL ACCOUNT
 Falconbridge Limited

PER *[Signature]* AUTHORIZED SIGNATURE
 PER *[Signature]* AUTHORIZED SIGNATURE

⑆00492⑆010⑆ 01⑆00811⑆

⑆0005482110⑆

00091-010
 BANQUE DE COMMERCE
 CANADIENNE IMPERIALE
 1986
 Principale & Paré
 Rouyn-Noranda (Québec)

4-0 DEPOSIT ONLY
 LIMITED

C.I.B.C.
 MONTREAL BAY CENTRE
 MONTREAL QUEBEC

00091-010
 BANQUE DE COMMERCE
 CANADIENNE IMPERIALE
 1986
 UEL 4
 Principale & Paré
 Rouyn-Noranda (Québec)
 00091-010

DEPOSIT ONLY
 LIMITED

⑆0005482110⑆

FALCONBRIDGE

THIS VOUCHER SHOULD BE DETACHED AND RETAINED BY PAYEE

No. 000522

No. 000774

INVOICE DATE MO. / YR.	INVOICE NUMBER	REFERENCE	AMOUNT
11/07/84	0/14-138-159		30,994.40
TOTAL			30,994.40

FALCONBRIDGE CANADIAN IMPERIAL BANK OF COMMERCE

FINANCED BY
BANK OF MONTREAL

VOUCHER NO. 14660 DATE 11/13/84

PAY TO THE ORDER OF

PER *[Signature]*

NOT NEGOTIABLE

⑆1800⑉010⑆ 01⑉00811⑆



FALCONBRIDGE
TIMMINS EXPLORATION

TO
CANADIAN IMPERIAL BANK OF COMMERCE
FINE AND THIRD
TIMMINS, ONTARIO

No. 000774

VOUCHER NO.	VENDOR NO.	DATE	AMOUNT
000522	1456	11/13/86	\$30,774.40
			\$30,774.40

PAY TO THE ORDER OF

Bradley Bros. Limited
96 - 14th Street
Rt. 1, Box 282
NORANDA, P.Q.
J6X 5A9

GENERAL ACCOUNT
Falconbridge Limited

PER

PER

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

COPY

⑆00492⑆010⑆ 01⑆00811⑆

⑆0003099440⑆

FOR DEPOSIT ONLY
TO THE CREDIT OF
BRADLEY BROS. LIMITED
22480

⑆0000000⑆

APPENDIX III

X-Ray Assay Laboratories

Invoice: November 28, 1986

XRAL

X-RAY ASSAY LABORATORIES INC.

1885 LESLIE STREET • DON MILLS ONTARIO M3B 3J4 • (416) 445-5755

COPY TO

INVOICE TO:

FALCONBRIDGE LIMITED
ATTN: J. ALCOCK
P. O. BOX 1140
571 MONETA AVENUE
TIMMINS, ONTARIO
P4N 7H9

SUBMITTED TO:

FALCONBRIDGE LIMITED
ATTN: J. ALCOCK
P. O. BOX 1140
571 MONETA AVENUE
TIMMINS, ONTARIO
P4N 7H9

CUSTOMER NO. 1256

INVOICE NO.	INVOICE DATE	WORK ORDER NO.	DATE SUBMITTED
30228	28-NOV-86	25740	10-NOV-86

TERMS

TERMS NET 30 DAYS
1.5% PER MONTH INTEREST ON ACCOUNT OVER 30 DAYS

CLIENTS P.O. NO.	CLIENT PROJECT NO.	TYPE OF SAMPLES SUBMITTED
	008104	HEAVY MINERAL CO

NO. OF PACKS	SHIPPED VIA	WAY BILL NO.	SHIPPED FROM
1 BOX	PURULATOR	64094354.4	TIMMINS

QUANTITY	DESCRIPTION METHOD	XRAL CODE	UNIT COST	AMOUNT
1. 24	M-VIAL, AS, AU, MO, SB, W	14,20, 0, 0, 0	11.00	264.00
2. 50	L-VIAL, AS, AU, MO, SB, W	14,20, 0, 0, 0	14.00	700.00

SUB-TOTAL \$ 964.00

SHIPPING CHARGES	CUSTOM BROKERAGE	TELEX	MINIMUM CHARGES
MISC. CHARGES	OTHER	SURCHARGE - RUSH SERVICE	

TOTAL IN **CDN** \$ 964.00

ORIGINAL INVOICE

APPENDIX IV

Falconbridge Ltd. Cheque

to

X-Ray Assay Laboratories

FALCONBRIDGE

THIS VOUCHER SHOULD BE DETACHED AND RETAINED BY PAYEE

No. 000629

No. 000944

INVOICE DATE MO. D. YR.	INVOICE NUMBER	REFERENCE	AMOUNT
11/12/86	29883		461.75
11/12/86	29890		469.20
11/10/86	29891		44.75
11/12/86	29893		401.25
11/21/86	30067		188.60
11/28/86	30228		964.00
11/07/86	M2121		66.00
12/04/86	302887		1,011.00
12/03/86	303047		783.00
TOTAL			4,257.55

FALCON BRIDGE / CANADIAN IMPERIAL BANK OF COMMERCE

ENDORSE HERE

VENDOR NO. 5758 DATE 12/17/86

AMOUNT \$4,257.55

NO. 000944

⑆00492⑉010⑆ 01⑉00811⑆



FALCONBRIDGE
TIMMINS EXPLORATION

TO CANADIAN IMPERIAL BANK OF COMMERCE
PINE AND THIRD
TIMMINS, ONTARIO

000944

VOUCHER NO.	VENDOR NO.	DATE	AMOUNT
000629	5755	12/17/86	41257.55

41257.55

PAY TO THE ORDER OF

GENERAL ACCOUNT
Falconbridge Limited

X-Ray Assay Laboratories Ltd.
1885 Leslie Street
Brimley
Ontario
M3B 2J4

PER
PER

[Handwritten Signature]
AUTHORIZED SIGNATURE

004920101 01008111

0000425755

DEPOSIT ONLY
DEPOSIT ONLY
DEPOSIT ONLY
C.I.B.C.
ATA CENTRE
TOM ONT.

01502-010

11121212

11121212

APPENDIX V

Overburden Drill Logs:

QT86-122 to QT86-137

REVERSE CIRCULATION DRILL HOLE LOG

BIT NO ^{G000} 290 BIT meterage 43.9 - 111.0

Page 1 of 3

HOLE NO QT86-123 LOCATION Macklem
 DATE Oct 8, 1986 GEOLOGIST J.A. DRILLER R.F.
 DEPTH OF HOLE 67.1m DEPTH OF OVERBURDEN 65.5m ELEVATION _____ (MSL)
220' 215'

MOVE to HOLE 3:30 - 3:38 (8)
 DRILL 4:20 - 4:40 (8); 8:40 - 1:50 (9)
 MECHANICAL DOWN TIME 3:38 - 3:45 (8) change coupling on water h.
 DRILLING PROBLEMS 8:40 - 9:15 : rods plugged w/ sand, pull & clea
 OTHER 3:45 - 4:20 fetch water; 4:40 - 5:00 drain hoses

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS									
					Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	Ag ppm	Pb ppm	As ppm	
0	XXX	0-2.1m		LACUSTRINE										
0.3		0-0.3: organics												
2.1		0.3-2.1: beige gray, moderate compaction, high silt, low (fine) sand, oxidized parts.												
2.1		2.1-49.7m		FLUVIOLACUSTRINE										
2.1		moderate compaction, high (fine) sand, trace (fine) gravel, gray, well sorted												
2.1		2.1-3.0: tan, oxidized												
3.6		3.6: gray clay band												
4.0		4.0-4.6: gray, moderate compaction, high clay.												
4.6		4.6-5.5: high (fine) sand / coarse silt.												
17.1		17.1: large quantity of woodchips, some to 4 cm.												
18.3		18.3: a few woodchips.												
39.6		39.6-43.6: high (fine to medium) sand												
43.6		43.6-49.7: high (fine to coarse) sand, trace (fine to medium) gravel, rounded												

P. W. Flood

REVERSE CIRCULATION DRILL HOLE LOG

Page 2 of 3

HOLE NO QT86-123 LOCATION Macklem
 DATE Oct 8, 1986 GEOLOGIST _____ DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS								
				Sample Number	Sample Interval	Au	As	Mo	Sb	W		
			49.7 - 59.1 m GLACIOFLUVIAL	QT								
30			49.7 - 52.0: moderate to high (coarse) sand, low 80% dark green) gravel, rotted green and brown material	10466	49.7- 51.8	62	56	9	0.2	11		
40			51.2: green rotted block 52.0: brown rotted block	10467	51.8- 52.6	38	24	9	0.4	11		
45			52.0 - 56.8 low to high gravel, low to medium (fine to coarse) sand, rotted rock present 40% greens, 40% black, 5-10% granitics	10468	52.9- 54.6	230	29	<5	0.3	42		
50			52.6 - 52.9: side of dark green hard boulder 54.3: rotted tan brown sedimentary? N.S. 54.4: cobbly: blacks, light greens. 54.6: as 54.3 54.7: dark green intrusive cobble	10469	54.9- 56.8	160	45	10	0.4	9		
55			56.8 - 57.3: high (medium) sand, low gravel, rotted brown blobs	10470	56.8- 59.1	700	40	7	6.7	18		
57			57.3 - 59.1: high (medium to coarse) gravel, low (coarse) sand.	10471	59.1- 61.0	110	46	<5	0.5	8		
70												
75												

P. W. Alcock

REVERSE CIRCULATION DRILL HOLE LOG

Page 3 of 3

HOLE NO QT86-123 LOCATION Macklem
 DATE Oct. 8, 1986 GEOLOGIST _____ DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS						
				Sample Number	Sample Interval	A ₄	A ₅	M ₀	S ₆	W
4		10471	59.1 - 60.7 m FLUVIO-LACUSTRINE light gray, high silt / very fine sand, some sorted sand and gravel bands	QT						
6		10472	60.7 - 64.6 m LACUSTRINE gray, moderate to high compaction, medium to high clay, medium to high (coarse) silt 63.8 - 64.0: green boulder, 1% fine cubic py, N.S.							
7			64.6 - 65.5 m GLACIOFLUVIAL high (medium to coarse) gravel, low (fine to coarse) sand, 90% green lithologies. 65.4 - 65.5 : also green rotted balls, gray high sand, low silt balls.	10472	64.6 - 65.4	410	59	<5	0.5	10
30			65.5 - 67.1 m BEDROCK							

F.W. Alcock

220'
E04
67.1m

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-124 LOCATION Macklem
 DATE Oct. 9 1986 GEOLOGIST J.A. DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS													
					Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	Ag ppm	Pb ppm	As ppm					
FL				sand ad nauseum														
35																		
10																		
15																		
20																		
25																		
30																		

P.W. Alford

REVERSE CIRCULATION DRILL HOLE LOG

Page 1 of 1

HOLE NO QT86-126 LOCATION Macklam, 700w / 1700s
 DATE OCT 10 1986 GEOLOGIST B. HART DRILLER R. FOURNEL
 DEPTH of HOLE 22.5m DEPTH of OVERBURDEN 19.5m ELEVATION _____ (MSL)
 (740ft) (640ft)

BIT NO G002390 BIT meterage 162.5-185.0m

MOVE to HOLE 10:15 - 10:30

DRILL 10:45 - 11:15

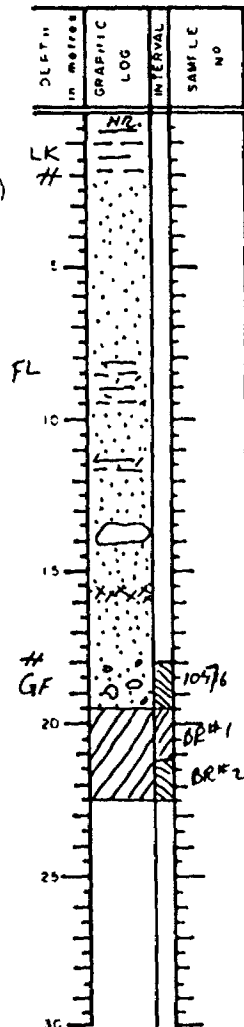
MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER 10:30-10:45: repair pully at top of tower

DESCRIPTIVE LOG

HEAVY MINERAL CONCENTRATE ANALYSIS



0-0.6 m: No return
 0.6-2.0 m: LACUSTRINE
 grey, low compaction, medium to high clay, medium silt.
 2.0-18.0 m: FLUVIOLACUSTRINE
 high (fine) sand, low (coarse) silt; alternating with occasional thin medium to high clay, low silt horizons; low compaction, grey.
 8.2-9.7 m: grey, low compaction, medium to high clay low silt.
 11.4-11.6 m: medium clay, medium silt, gritty, organics
 13.4-14.2 m: dark green/grey boulder.
 15.5-15.7 m: wood chips mixed with fine sand
 18.0-19.5 m: GLACIOFLUVIAL
 high (medium to fine) sand, medium to fine gravel, 80-90% dark green/grey
 19.5-22.5 m: BEDROCK

Sample Number	Sample Interval	Au	As	Mo	Sb	W			
QT	m								
10576	18.0-19.5	350	27	<5	0.3	5			
BR#1	19.5-20.2								
BR#2	21.2-22.5								

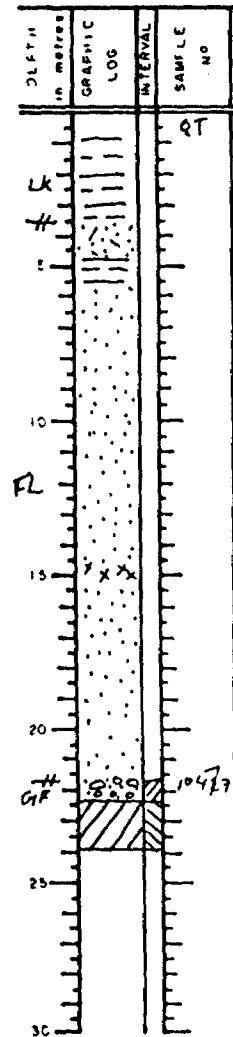
PW flood

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO AT86-127 LOCATION Macklem, 700w/1600S
 DATE Oct 10 1986 GEOLOGIST R. HART DRILLER FOURNEL
 DEPTH of HOLE 29.3 m DEPTH of OVERBURDEN 22.4 m ELEVATION _____ (MSL)
78.5 ft 73.5 ft

BIT NO L000290 BIT meterage 185.0-212.0 m
 MOVE to HOLE 11:15-11:25
 DRILL 11:25-1:30
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH in metres GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS										
			Sample Number	Sample Interval	Au	As	Mo	Sb	W				
RT		0-0.9m: Swamp	RT	m									
		0.9-3.5 m: LACUSTRINE 0.9-2.1m: grey/brown, oxidized, high clay 2.1-3.5m: grey, low compaction, high clay, low silt.											
		3.5-21.8m: FLUVIOLACUSTRINE 3.5-4.6m: grey brown, low compaction, high (fine) sand, medium to low silt. 4.6-5.5m: grey high clay, low compaction 5.5-21.8m: high (fine) sand, occasional thin clay horizon 14.9-15.1m: wood chips											
		21.8-22.4m: GLACIOFLUVIAL low sand, high (medium to fine) gravel, 50-60% dark (30-40% green clasts)	10477	21.8-22.4	15	19	<5	0.2	23				
		22.4-23.9m: BENEVOLENT	0E	22.4-23.4									
		23.9 m (78.5 ft) E.O.H.-											



PWAloch

REVERSE CIRCULATION DRILL HOLE LOG

Page 1 of 2

HOLE NO Q186-128 LOCATION Macklem 700 W / 600 N
 DATE OCT 11 1986 GEOLOGIST B. HART DRILLER R. FOURNEL
 DEPTH OF HOLE 59.7 m (196 ft) DEPTH OF OVERBURDEN 58.2 m (1910 ft) ELEVATION _____ (MSL)

BIT NO 900278 BIT meterage 0-59.7 m

MOVE TO HOLE ~~830~~ 1000-10:20

DRILL 10:20-11:30

MECHANICAL DOWN TIME 8:30-10:00 Fix Front wheel on FN 60

DRILLING PROBLEMS 1:30-4:30 (OCT 10/86): remove track and
change front wheel from FN 60, wait for wheel from Timmins

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS									
				Sample Number	Sample Interval	Au	As	Mo	Sb	W			
0-0.9	NR		No return	AT	M								
0.9-1.8			LACUSTRINE grey/brown, oxidized high clay										
1.8-50.3			FLUVIOLACUSTRINE low compaction, tan/grey, high (fine) sand, low (coarse) silt; occasional thin clay/silt horizon near upper portion of unit. 3.5-4.0 m: grey/brown medium clay medium silt at 11.0 m: wood chips at 23.8 m: wood chips 41.5-50.3 m: medium to coarse sand, very few small pebbles										
50.3-58.2			GLACIOFLUVIAL medium (medium to coarse) sand, medium (medium to coarse) gravel, 50-80% dark; pebble fragments angular; dark pebbles dominantly dark green/grey. 51.4-51.8 m: very coarse; low coarse sand, high coarse gravel, cobbly 51.8-52.1 m: dark green/black cobble 52.1-52.3 m: granitic cobble 54.3-54.9 m: dominantly dark green cobbles mixed with coarse sand 56.7-58.2 m: medium sand, medium gravel, 60-70% dark, cobbly.	10478	50.3-51.4	140	30	8	0.6	65			
				10479	51.4-51.8	260	26	<5	0.4	83			
				10480	52.3-54.6	330	40	8	0.5	14			
				10481	54.6-55.8	580	32	20	0.5	22			
				10482	55.8-57.2	220	35	11	0.6	11			
				10483	57.6-58.2	33	20	<5	0.3	6			

R. Fournel

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-12B LOCATION Macklem
 DATE _____ 19____ GEOLOGIST _____ DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS														
					Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	As ppm	Ag ppm	Pb ppm						
50			QT	58.2-59.7m: BEDROCK															
30																			
FL				59.7m (196 ft) E. D. H.															
40																			
45																			
50																			
50			10478																
			10479 NS																
			10480																
			10481																
			10482																
			10483																
			BE #1																
			BE #2																
60																			

PW Rocks

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-129 LOCATION Macklem, 700W/400S
 DATE OCT 11 1986 GEOLOGIST R. HART DRILLER R. FURNEL
 DEPTH OF HOLE 50.9 m (167.0ft) DEPTH OF OVERBURDEN 49.2 m (161.5 ft) ELEVATION _____ (MSL)

BIT NO G228 BIT METERAGE 57.7-92.4

MOVE TO HOLE 1:30-145

DRILL 145-400

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER 4:00-4:30 pull rods drain water system.

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS									
					Sample Number	Sample Interval	Au	As	Hg	Sb	W			
0				0-0.6m: No return	QT	M								
0.6				0.6-30m: LACUSTRINE grey, low compaction, high clay.										
3.0				3.0-34.7m: FLUVIOLACUSTRINE high (fine) sand, very low compaction, very low silt, occasional thin clay seam near upper portion of unit.										
34.7				34.7-39.6m: GLACIOFLUVIAL medium (medium to coarse) sand, medium (medium to fine) gravel, 50-60% dark (mostly green/grey) small pebbles moderately to moderately well rounded	10484	34.7-36.6	150	29	7	0.3	7			
				35.7-36.0m: medium to fine sand, few small pebbles	10485	36.6-38.4	72	51	11	0.4	8			
				37.2-39.6m: high (medium to coarse) sand, medium to low (fine) gravel, 60-70% dark	10486		CR							
					10487	38.4-39.7	46	36	11	0.5	5			
39.6				39.6-44.5m: FLUVIOLACUSTRINE high (medium to fine) sand, very low gravel										
44.5				44.5-49.1m: GLACIOFLUVIAL 44.5-46.2m: medium (medium to coarse) sand, medium to low (medium to fine) gravel, 50% dark cobbly	10488	44.5-46.2	550	57	9	0.7	12			
				46.2-49.1m: medium to low (coarse) sand, medium to high (medium to coarse) gravel, 60-70% dark	10489	46.2-47.9	50	28	8	0.6	10			
					10490	48.5-49.1	37	33	<5	0.4	9			

R. W. Flocks

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-129 LOCATION Macklem
 DATE _____ 19____ GEOLOGIST _____ DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS									
					Sample Number	Sample Interval	Au	As	Mo	Sb	W			
30				46.9-47.5m: dark green boulder.										
				49.1 - 49.2m: TILL UNDEFINED grey, high compaction, high silt, low sand Very few stones.	10491	49.1-49.2	<34	30	<10	0.6	38			
				49.2-50.9m: BEDROCK	BR(WK)	49.2-50.9								
35				50.9m (167.0ft) E.O.H.										

FWA rocks

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-130 LOCATION Macklem
 DATE Oct-14 1986 GEOLOGIST J.A. DRILLER R.F.
 DEPTH of HOLE 51.8 DEPTH of OVERBURDEN 50.6 m ELEVATION _____ (MSL)
170' 166'

BIT NO G000 BIT meterage 110.6 - 162.5
 MOVE to HOLE 8:40 - 8:55 AM
 DRILL 8:55 - 10:45 a.m.
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER 9:05 - 9:30 PM clean tanks, 0.5m sand hole drilled 0.5m No of picket

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS							
					Sample Number	Sample Interval	Au	As	Hg	Sb	W	
0-47.2	XXX NR			<p>0-47.2m FLUVIOLACUSTRINE</p> <p>0-2.1: No Return, Organics at surface 2.1: thin, tan brown, high clay band 2.1-42.7: high (fine) sand, 2.1-12.2: tan brown, oxidized 4.9: rotted clast? 12.2-18.3: No Return 18.3-30.5: gray, trace silt bands, trace pebbles 36.3: wood chips 30.5-47.2: high (fine to medium) sand 37.6: green cobble, trace wood chips, pebbles 43.0: ultra mafic cobble</p>								
47.2-50.6				<p>47.2-50.6m GLACIOFLUVIAL</p> <p>high (medium to coarse) sand, low (fine, 50% dark green) gravel 47.9-48.8: high (medium to coarse) sand 50.0-50.6: balls of green rotted material</p>								
					10492	47.2-50.0	13	28	14	0.4	4	
					10493	50.0-50.6	14	17	13	0.3	5	

P.W. Alcott

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-130 LOCATION Macklem
 DATE Oct. 14 19 86 GEOLOGIST J.A. DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS														
				Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	Ag ppm	Pb ppm	As ppm						
30			50.6 - 51.8 m	BEDROCK														
25																		
20																		
15																		
10																		
5																		
0																		

P.W. Alrod

REVERSE CIRCULATION DRILL HOLE LOG

BIT NO 6000 278 BIT meterage 162.5 - 206.3m

Page 1 of 2

HOLE NO QT86-131 LOCATION Macklem
 DATE Oct. 14 1986 GEOLOGIST J.A. DRILLER Don B.
 DEPTH of HOLE 43.9m DEPTH of OVERBURDEN 42.5m ELEVATION (MSL)
144' 139.5'

MOVE to HOLE 10:45 - 10:55

DRILL 10:55 - 12:30

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER Hole drilled 15m South of Baseline

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS													
				Sample Number	Sample Interval	Au	As	Mo	Sb	W							
0-3.0	N.R.		LACUSTRINE 0-1.8m: No Return, organics and clay at stc. 1.8-3.0: orange brown, high clay														
3.0-42.1			FLUVIOLACUSTRINE high (very fine to medium) sand 3.0-6.1: orange brown 6.1-12.2: brown, poor return 18.3: woodchips present 28.7: band of clay 33.8: band of pebbles 34.7: band of woodchips 36.6-39.9: high (medium to coarse) sand 39.9-41.5: high (fine) sand 41.5-42.1: high (medium to coarse) sand														
42.1-42.5			GLACIOFLUVIAL medium to high (medium to coarse) sand, low to medium (fine to coarse, 50% green) gravel, rounded P.W. flock	10494	42.1-42.5	37	56	17	1.1	7							

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-131 LOCATION Macklem
 DATE Oct. 14 19 86 GEOLOGIST J. A. DRILLER Don B.
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS															
				Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	Ag ppm	Pb ppm	As ppm							
35			42.5 - 43.9 m BEDROCK																
40																			
45																			
50																			
55																			
60																			
65																			
70																			
75																			
80																			
85																			
90																			
95																			
100																			
105																			
110																			
115																			
120																			
125																			
130																			
135																			
140																			
145																			
150																			
155																			
160																			
165																			
170																			
175																			
180																			
185																			
190																			
195																			
200																			

W. H. H. H. H.

REVERSE CIRCULATION DRILL HOLE LOG

Page 2 of 3

HOLE NO QT86-132 LOCATION Macklem
 DATE Oct. 14 1986 GEOLOGIST J.A. DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS								
				Sample Number	Sample Interval	Au	As	Mo	Sb	W		
			45.1 - 54.9m GLACIOFLUVIAL	QT								
30			45.1 - 45.6: high (medium to coarse) sand, low gravel	10495	45.1 - 48.5	23	34	10	0.4	6		
40			45.6 - 46.2: high (fine) sand									
45			46.2 - 47.2: medium to high (medium to coarse, 40-60% darks) gravel, low to medium (fine to coarse) sand	10496	48.5 - 51.2	42	54	11	0.6	6		
50			46.6: dark green cobble									
55			47.2 - 48.5: high (fine to medium) sand, low gravel, some gravel bands.	10497	51.2 - 53.0	320	87	18	0.6	140		
60			48.5 - 49.7: high (fine) gravel, 30-40% darks, 5-10 granitics, pebbles rounded, low to medium sand									
65			49.7 - 50.6: high (fine) sand									
70			50.6 - 54.9: med. to high (fine to coarse) gravel, 40-60% dark, 5-10% carbonates, 5-10 granitics, low to medium (fine) sand, stratified, after 51.8, cobbly	10498	53.0 - 57.6	150	50	17	10	240		
75			52.4: green cobble									
80			53.0 - 53.1: green cobble to 90%									

Phyllis

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO. QT86-132 LOCATION Macklem
 DATE Oct. 14 1986 GEOLOGIST J.A. DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO. _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH in meters	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS						
				Sample Number	Sample Interval	Au	As	Mo	Sb	W
			45.1-54.9 m GLACIOFLUVIAL (continued)	QT						
			50.6-54.9 m (continued)							
			53.6-53.9: dark green mafic volcanic boulder, N.S.	10499	53.9-54.9	31	21	<5	0.3	57
			54.6: dark green intrusive cobble							
			54.9: sheared ultramafic chips							
			54.9: 1 or 2 tillballs							
			54.9-56.2 m BEDROCK	BK	54.9-56.2					

PWA

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT 86-133 LOCATION Macklem
 DATE Oct. 14 1986 GEOLOGIST J.A. DRILLER R.F.
 DEPTH OF HOLE 42.7m DEPTH OF OVERBURDEN 41.1m ELEVATION _____ (MSL)
 140' 135'

BIT NO G-000 BIT meterage 56.2 - 98.9
 281

Page 1 of 2

MOVE TO HOLE 3:15 - 3:20

DRILL 3:20 - 4:50

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER 4:40 - 4:50 pull rods, drain hoses

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS													
				Sample Number	Sample Interval	Au	As	Mo	Sb	W							
0 - 0.9	N.R.		LACUSTRINE 0-0.6: No Return 0.6-0.9: gray brown, high clay														
0.9 - 13.7	N.R.		FLUVIOLACUSTRINE high (fine) sand, some very low silt and sandballs 6.1-13.4: No Return														
13.7 - 16.8	N.R.		LACUSTRINE tan gray, moderate to high compaction, high silt, low clay, possibly banded														
16.8 - 40.7	LX		FLUVIOLACUSTRINE high (fine) sand, organic flecks 22.2: lots organic flecks 27.4: wood chips 31.7: wood chips 33.5: band of pebbles and wood chips. 39.6: band of pebbles														
40.7 - 41.1	FL		GLACIOFLUVIAL medium to high (60-80% dark) ^{gravel} , low to medium (medium to coarse) sand	10500	40.7- 41.1	83	34	8	0.6	15							
41.1 - 42.7	FL		BEDROCK														

E.O.H.
140'
42.7m

P.W. flood

REVERSE CIRCULATION DRILL HOLE LOG

HOLE NO QT86-133 LOCATION Macklem
 DATE Oct. 14 19 86 GEOLOGIST J.A. DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH in metres	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS															
					Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	As ppm	Ag ppm	Pb ppm							
0																				
1																				
2																				
3																				
4																				
4.1																				
5																				
10																				
15																				
20																				
25																				
30																				

P.W. Hlood

REVERSE CIRCULATION DRILL HOLE LOG

Page 2 of 2

HOLE NO Q186-134 LOCATION Macklem
 DATE OCT 15 1986 GEOLOGIST B.H. DRILLER R.F.
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT NO _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DESCRIPTIVE LOG

HEAVY MINERAL CONCENTRATE ANALYSIS

DEPTH in metres	GRAPHIC LOG	INTERVAL	SAMPLE NO	HEAVY MINERAL CONCENTRATE ANALYSIS															
				Sample Number	Sample Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm	As ppm	Ag ppm	Pb ppm							
30) FL(12) NR TI(S)WOC# 30) 02800) 0501																
29																			
28																			
27																			
26																			
25																			
24																			
23																			
22																			
21																			
20																			
19																			
18																			
17																			
16																			
15																			
14																			
13																			
12																			
11																			
10																			
9																			
8																			
7																			
6																			
5																			
4																			
3																			
2																			
1																			

P. W. Flood

REVERSE CIRCULATION DRILL HOLE LOG

Page 1 of 2

HOLE NO QT86-135 LOCATION Macklem 12W / 560S
 DATE Oct 15 1986 GEOLOGIST R. HART DRILLER R. Fournel
 DEPTH OF HOLE 56.1 m (184.0 FT) DEPTH OF OVERBURDEN 54.1 m (177.5 FT) ELEVATION _____ (MSL)

BIT NO G000279 BIT meterage 0-56.1 m
 MOVE TO HOLE 11:15 - 11:45 (Move to line 1200W)
 DRILL 11:45 - 3:10
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH IN METERS	GRAPHIC LOG	INTERVAL SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS								
				Sample Number	Sample Interval	Au	As	Mo	Sb	W		
0-0.9			SWAMP									
0.9-7.2			LACUSTRINE									
0.9-2.4			grey/brown, oxidized high clay									
2.4-4.9			grey, uncompact, high clay gritty to 3.6m									
4.9-7.2			rhythmites; grey high clay alternating with grey brown medium clay medium silt									
7.2-9.4			FLUVIOLACUSTRINE									
			grey high (fine) sand, very low (coarse) silt, mixed with some horizon of high silt, low sand and some clay horizons									
9.4-14.0			LACUSTRINE									
			rhythmites as above									
14.0-49.7			FLUVIOLACUSTRINE									
			high fine sand, low coarse silt									
			33.8 m: wood chips									
49.7-54.1			GLACIOFLUVIAL									
			medium sand, medium to high (medium to fine) gravel 60-80% dark; dominantly dark green chips with limonite staining.									
			51.1-51.2m: orange/brown muck with green black chips									
			51.2-52.4m: orange brown muck mixed with glaciofluvial material									
			53.3-53.4 m: 10-25% green/grey silt balls									
				10502	49.7-51.1	160	24	<5	0.3	24		
				10503	51.1-53.0	710	110	<5	1.0	8		
				10504	53.0-54.1	230	110	<5	0.6	4		

R. Hart

REVERSE CIRCULATION DRILL HOLE LOG

Page 1 of 2

HOLE NO GT 86-136 LOCATION MACKLEM 900W/600S
 DATE OCT. 15/16 1986 GEOLOGIST R. HART DRILLER R. FURNEL
 DEPTH of HOLE 65.8m DEPTH of OVERBURDEN 64.6m ELEVATION _____ (MSL)
 (216.0') (212.0')

BIT NO G000229 BIT meterage 59.1-125.0

MOVE to HOLE (15) 3:10-3:40 ; (16) 8:40-9:05

DRILL (15) 3:40-4:40 ; (16) 9:05-12:50

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER _____

DEPTH in METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS												
					Sample Number	Sample Interval	Au	As	Mu	Sb	W						
0	XXX	QT		0-1.5m: SWAMP	QT	m											
1.5				1.5-12.6m: LACUSTRINE 1.5-3.3m: grey/brown high clay, low silt 0% pabs. 3.3-8.5m: grey, high clay, uncompact 8.5-12.6m: rhythmites; grey high clay alternating with grey brown medium clay medium silt.													
12.6				12.6-44.5m: FLUVIOLACUSTRINE grey, uncompact, high sand (fine), very low coarse silt, very few pebbles, occasional thin clay horizon near upper portion of unit. 23.2m: wood chips 33.8-34.4m: grey high clay medium silt 44.2-44.5m: green grey boulder													
44.5				44.5-51.5m: GLACIOFLUVIAL coarse: medium to high (medium to coarse) gravel, medium to low (coarse) sand, 60-70% dark, Cobbly, small pebbles moderately to well rounded, 5-10% exotics	10505	44.4-46.3	180	48	<5	0.5	12						
					10506	46.3-48.2	1500	45	11	0.6	24						
					10507	48.2-49.4	1300	35	<5	0.4	15						
					10508	49.4-51.2	370	26	<5	0.5	8						
					10509	51.2-51.8	53	15	<5	0.3	4						
					10510	51.8-53.0	430	22	7	0.4	5						
					10511	53.0-54.9	20	14	7	0.2	4						
51.5				51.5-53.9m: ABLATION TILL grey, moderate to high compaction, high sand, medium to low silt, 40-50% clasts, 76% dark 5-10% grey till balls 51.8-52.3m: light green boulder													
53.9				53.9-55.2m: GLACIOFLUVIAL low (coarse) sand, high (medium) gravel; 60-70% dark													

PW Alcock

REVERSE CIRCULATION DRILL HOLE LOG

Page 2 of 2

HOLE No QT86-136 LOCATION MACCLEM 900W/600S
 DATE _____ 19____ GEOLOGIST _____ DRILLER _____
 DEPTH of HOLE _____ DEPTH of OVERBURDEN _____ ELEVATION _____ (MSL)

BIT No _____ BIT meterage _____
 MOVE to HOLE _____
 DRILL _____
 MECHANICAL DOWN TIME _____
 DRILLING PROBLEMS _____
 OTHER _____

DEPTH in meters	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS									
					Sample Number	Sample Interval	Au	As	Mo	Sb	W			
30				55.2 - 55.8m: LACUSTRINE grey, high clay, medium to low silt, low to moderate compaction										
35				55.8 - 57.0m: LODGEMENT (?) TILL TW 55.8 - 56.1m: grey, moderate to high compaction, high silt low sand, few clasts 56.1 - 56.2m: medium sand, medium gravel 56.2 - 57.0m: grey, high sand, low silt, 40-60% clasts, 70% dark after 56.4m: blue/grey medium to high silt some clay, low sand, 10-20% small clasts	10512	55.4-55.2 55.8-56.7	280	29	<5	0.4	6			
40														
45				57.0 - 64.6m: GLACIOFLUVIAL medium to low (coarse) sand, medium to high (medium to coarse) gravel, 70% dark, cobbly, stratified with medium to high sand, low gravel 60.4 - 60.7m: coarse: cobbly dominantly dark green + black clasts (boulders?) 61.3 - 61.6m: dark green to green pebbles 62.2 - 63.1m: very coarse: dominantly chips of light green pebbles + boulders 63.1 - 63.5m: dark green boulder	10513	56.7-58.5	36	55	<5	0.5	6			
50					10514	58.5-60.4	910	85	<5	0.9	7			
55					10515	60.4-61.5	180	76	6	1.2	5			
60					10516	61.5-63.1	45	67	<5	1.0	65			
65					10517	63.4-63.6	5400	310	5	1.7	60			
64.6 - 65.8m				BEDROCK										

ΦW Fleoch

REVERSE CIRCULATION DRILL HOLE LOG

Page 1 of 2

HOLE NO QT86-137 LOCATION MACKLEM 900W/800S
 DATE OCT 16 1986 GEOLOGIST B. HART DRILLER R. FOURNEL
 DEPTH of HOLE 39.0m DEPTH of OVERBURDEN 37.4m ELEVATION _____ (MSL)
 (128.0 ft) (122.5 ft)

BIT NO G229 BIT meterage 125.0-164.0

MOVE to HOLE 12:50 - 1:00

DRILL 1:00 - 2:30

MECHANICAL DOWN TIME _____

DRILLING PROBLEMS _____

OTHER 2:30 - 3:15 (clean up + prep drill for move to Lucas Top.)

DEPTH IN METERS	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG	HEAVY MINERAL CONCENTRATE ANALYSIS									
					Sample Number	Sample Interval	Au	As	Mo	Sb	W			
0	XXX XXX	QT		0 - 1.8m: SWAMP.	QT	m								
1.8				1.8 - 2.9m: LACUSTRINE grey, uncompact, high clay										
2.9				2.9 - 30.5m: FLUVIOLACUSTRINE grey, uncompact, high (fine) sand, some silt; occasional clay lamination, locally gritty, <5% small pebbles										
23.5				23.5m: wood chips										
29.1				29.1 - 30.5m: light green boulder										
30.5				30.5 - 32.0m: GLACIOFLUVIAL medium sand, low gravel, 70% dark	10518	30.5-32.0	170	25	5	0.5	11			
31.7				31.7 - 32.0m: green boulder										
32.0				32.0 - 36.3m: FLUVIOLACUSTRINE high (fine) sand, uncompact, <2% small clasts										
36.3				36.3 - 37.4m: GLACIOFLUVIAL low (medium to fine) sand, high (medium to coarse) gravel, >70% dark (mostly green/grey)	10519	36.3-37.4	29	18	8	0.3	4			
37.2				37.2 - 37.3m: 90-95% angular green chips.										
37.4				37.4 - 39.0m: BEDROCK	Be(wr)	37.4-39.0								

RWHerb



42A07NW0018 2.10023 MACKLEM

900

File
2.10023

Date
June 30, 1987

Mining Recorder's Report of
Work No.
99/87

Recorded Holder
KIDD CREEK MINES LTD

Township or Area
MACKLEM TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<p>Geophysical</p> <p>Electromagnetic _____ days</p> <p>Magnetometer _____ days</p> <p>Radiometric _____ days</p> <p>Induced polarization _____ days</p> <p>Other _____ days</p>	<p>\$16,644.40 SPENT ON OVERBURDEN DRILLING TAKEN FROM MINING CLAIMS:</p> <p>P 866753-54 866756-57 871610 to 13 inclusive</p>
<p>Section 77 (19) See "Mining Claims Assessed" column</p>	
<p>Geological _____ days</p>	
<p>Geochemical _____ days</p>	<p>1109.6 ASSESSMENT WORK DAYS ARE ALLOWED WHICH MAY BE GROUPED IN ACCORDANCE WITH SECTION 76(6) OF THE MINING ACT.</p>
<p>Man days <input type="checkbox"/> Airborne <input type="checkbox"/></p>	
<p>Special provision <input type="checkbox"/> Ground <input type="checkbox"/></p>	
<p><input type="checkbox"/> Credits have been reduced because of partial coverage of claims.</p>	
<p><input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.</p>	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.

June 30, 1987

Your File:99/87
Our File:2.10023

Mining Recorder
Ministry of Northern Development and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

RE: Data for Assaying submitted under Section 77(19)
of the Mining Act R.S.O. 1980 on Mining Claims
P 866753, et al, in Macklem Township

The enclosed statement of assessment work credits for Assaying
have been approved as of the above date.

Please inform the recorded holder of these mining claims and
so indicate on your records.

Yours sincerely,

Gary L. Weatherson, Manager
Mining Lands Section
Mineral Development and Lands Branch
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

DK/mc

cc: Kidd Creek Mines Ltd
P.O. Box 1140
571 Moneta Avenue
Timmins, Ontario
P4N 7H9
Attention: Philip W.J. Alcock

Resident Geologist
Timmins, Ontario

Encl.

MAP SYMBOLOLOGY

Aerial Cableway	Pipeline (see ground)
Boundary	Railroad
International	Single Track
Interprovincial	Double Track
District, Township	Abandoned
Indian Reserve	Territory
Approach	Road
Lat. Concession	Highway, Cavalry
Approach	Trail
Post Boundary	Access Road at essential
Bridge	distances of
Beam, Railroad	significance of
Building	Trails, Main Road
Chimney	(single, strip)
Cliff, Pit, Pile	Rapids
Contours	Double line river
Interpreted	with multiple rapids
Approximate	Reservoir
Diagrams	River, Stream, Canal
Control Points	Approximate
Horizontal	boundary
Vertical	Control Point
Culvert	Spot Elevation
Falls	(see elevation)
Double line river	Tower
Fence, Hedge, Wall	Transmission Line
Feature Outline	Pole
(Construction features, etc.)	Pylon
Flooded Land	Tunnel
Lock	Utility Pole
Marsh or Swamp	Wharf, Dock, Pier
Mast	Wooded Area
Mine Head Frame	
Outcrop	

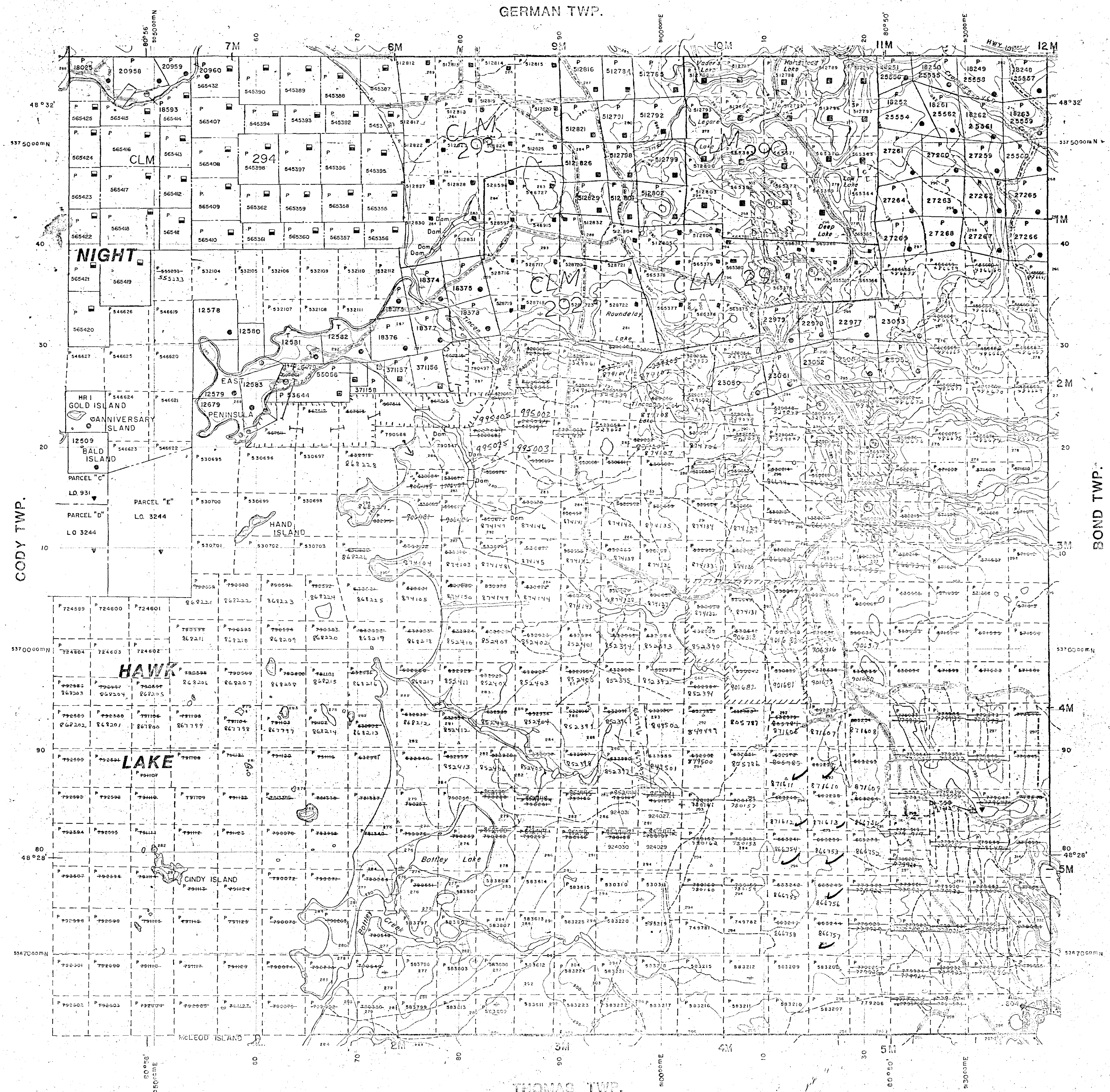
AREAS WITHDRAWN FROM DISPOSITION

M.R.O. - MINING RIGHTS ONLY				
S.R.O. - SURFACE RIGHTS ONLY				
M.S. - MINING AND SURFACE RIGHTS				
Description	Order No.	Date	Disposition	File
Site Protection	05/02/83			7709 M.V.

SAND and GRAVEL

- ① GRAVEL FILE 103301
- ② M.T.C. P11 121
- ③ QUARRY PERMIT

GERMAN TWP.



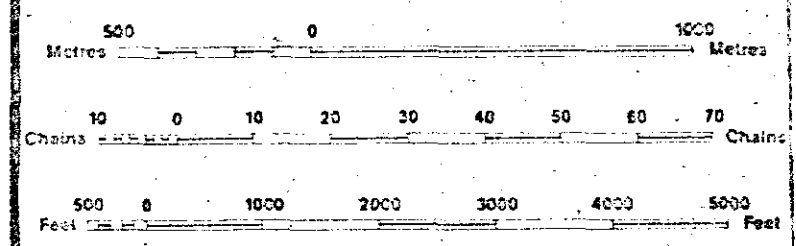
LEGEND

HIGHWAY AND ROUTE No.	
OTHER ROADS	
TRAILS	
SURVEYED LINES:	
TOWNSHIPS, BASE LINES, ETC.	
LOTS, MINING CLAIMS, PARCELS, ETC.	
UNSURVEYED LINES:	
LOT LINES	
PARCEL BOUNDARY	
MINING CLAIMS ETC.	
RAILWAY AND RIGHT OF WAY	
UTILITY LINES	
NON PERENNIAL STREAM	
FLOODING OR FLOODING RIGHTS	
SUBDIVISION OR COMPOSITE PLAN	
RESERVATIONS	
ORIGINAL SHORELINE	
MARSH OR MUSKEG	
MINES	
TRAVERSE MONUMENT	

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

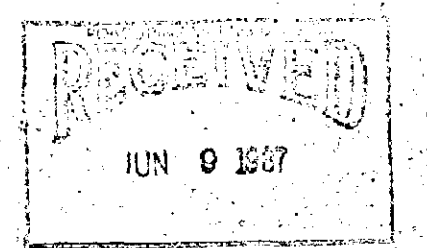
NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1910, CHAP. 310, SEC. 63, SUBSEC. 1.



SCALE 1:20 000
GRID ZONE : 17

Reserve flooding rights on Night Hawk Lake to Ontario Hydro to elevation 903.9', T.B.N.O.R. datum.

Area Withdrawn (M.R. & S.R.)
from Staking 9 Section 36 Mining Act.
R.S.O. 1980
See N.R.W. 10/85



Received June 23/85

TOWNSHIP
MACKLEM

M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS

MINING DIVISION
PORCUPINE

LAND TITLES / REGISTRY DIVISION
COCHRANE

Ministry of Natural Resources
Land Management Branch
Ontario

ORIGINAL COMPILATION JULY 1984
REVISED
Number
3997

