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Outokumpu Mines Ltd.

Reverse Circulation Drilling Report
in Eldorado, Adams, and
Deloro Townships

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Niels Hendriks

Niels Hendriks
Outokumpu Mines Ltd.
May, 1997

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1.0 Introduction

Outokumpu Mines Limited holds mining claims in Eldorado, Adams and Deloro Townships. The claims in this area represent a portion of a large group of mining claims which Outokumpu Mines Limited holds on the southern flank of the Shaw Dome. The mining claims in which the present work occurred are as follows: 1201228 (Eldorado Twp.), 1204595 and 1198831 (Deloro Twp.), 1204344 and 1204348 (Adams Twp.)

Bradley Brothers Limited was contracted by Outokumpu Mines Limited to drill 51 reverse circulation drill holes on the above mentioned claims. The reverse circulation drill holes (RC holes) were drilled on lines cut through the bush. In total, five lines were drilled (see table 1).

The claims are located in Eldorado, Deloro, and Adams Townships, Porcupine Mining Division, District of Cochrane, Ontario, Canada. The claims can be divided into three work areas (see table 1). The three work areas are geologically distinct and will, in this report, be treated separately where necessary.

Line No.	Claim No(s).	Township	Total Number of Holes	Work area
1	1201228	Eldorado	8	A
2	1201228	Eldorado	13	A
3	1204595, 1198831	Deloro	13	B
4	1204344	Adams	5	C
5	1204348	Adams	12	C

Table 1 RC drilling lines, claim numbers, and corresponding work areas.

A total of 814.43 metres of RC drilling was completed in 51 RC holes from 25 March to 11 April 1997. For each RC hole, notes were taken on the depth and type of overburden and bedrock samples were collected. Bedrock chip samples were identified in the field by Outokumpu personnel. The samples were then transported to the Outokumpu Mines Limited Office in Timmins, Ontario. Each sample was then mixed to ensure homogeneity. Each sample was then examined using a binocular microscope and the magnetic susceptibility of each sample was determined using a Geoinstruments JH-8 magnetic susceptibility meter. A summary of hole locations, rock types, and magnetic susceptibilities is included as Appendix 1 of this report.

The objective of this program was to test the komatiitic stratigraphy of the work areas. That is, to obtain a shallow bedrock sample from each hole for whole rock analysis. Since the work areas are, for the most part, covered by a thick blanket of overburden, little is known about their bedrock composition and structure. High magnetic anomalies and previous geological mapping nearby were used as targeting information to locate thick komatiitic mesocumulate to adcumulate bodies.

2.0 Location, Access, and Topography

2.1) Work Area A - Lines 1 and 2 (Claim No. 1201228 - Eldorado Township)

Work Area A is located in Eldorado Township (G-4001), District of Cochrane, Porcupine Mining Division, Ontario, Canada. The work area is west of Stringer's road approximately 21 kilometres southeast of the City of Timmins. The work area is located in central Eldorado Township approximately 2 kilometres north of the Redstone Mine (fig. 1).

The property is accessed by 'Knee Deep Road'-a well established winter road. Knee Deep Road runs roughly east-west from Stringer's road, fording the Redstone river, and west to a north-south winter road in Adams Township which runs from Timmins to MacArthur Lake Lodge. Knee Deep road intersects Stringer's road at 491168mE and 5352919mN (UTM Location - Zone 17). Stringer's Road originates in South Porcupine.

The area in which lines 1 and 2 were drilled is of relatively low relief. In the southern end of the work area, a number of outcrop ridges rise out of muskeg swamp. The northern portion of the work area is almost entirely muskeg swamp. Outcrop exposure in the work area is approximately 5 percent and is limited to the outcrop ridges in the southern end of the work area. Vegetation in the southern portion of the work area is dominated by poplar, black spruce, and small stands of white birch. Vegetation in the northern portion of the work area is primarily black spruce, alder and occasional patches of cedar in very wet areas.

2.2) Work Area B - Line 3 (Claim Numbers 1204595 and 1198831 - Deloro Township)

Work Area B is located in Deloro Township (G-3993), District of Cochrane, Porcupine Mining Division, Ontario, Canada. The work area is approximately 5.5 kilometres east of Pine Street South and approximately 6 kilometres south-southeast of the Buffalo - Ankerite Mine. The work area is located in south-central Deloro Township.(fig. 1).

The work area can be accessed from both the north and the south. From the north, a well established winter road originates at the end of the Buffalo - Ankerite access road. This winter road runs south-southeast crossing Shaw creek approximately 5 kilometres south-southeast of the Buffalo - Ankerite Property. Approximately 1 kilometre south of Shaw Creek, the access trail to line 3 runs west from the winter road. From the south, the work area can be accessed by a series of established winter roads which can be accessed from Mountjoy road. Mountjoy road, running east, then south, intersects Pine Street South approximately 12 kilometres south of the City of Timmins. Approximately 8 kilometres along the Mountjoy road from the intersection of Pine Street South is the intersection of the winter road network which eventually (!) accesses the work area (fig. 1). Of the two routes to work area B, the southern route is recommended as the roads are wider and Shaw Creek does not need to be crossed.

The area in which line 3 was drilled is of relatively low relief. The entire area is a poorly drained Muskeg swamp with occasional areas of drier ground. Outcrop exposure in the work area is less than 1 percent although overburden depths in the work area are as little as 3 metres. Vegetation in the work area is dominated by black spruce, alder, poplar, and occasional tamarack. Small, thick stands of white pine also occur in the vicinity of the work area. All vegetation is second growth.

2.3) Work Area C - Lines 4 and 5 (Claim Numbers 1204344 and 1204348 - Adams Township)

Work Area C is located in Adams Township (G-3925), District of Cochrane, Porcupine Mining Division, Ontario, Canada. The work area is approximately 8 kilometres east of Pine Street South and approximately 10 kilometres south-southeast of the Buffalo - Ankerite Mine. The work area is located in extreme northeastern Adams Township.(fig.).

Access to work area C is similar to the southern access to work area B. Please refer to figure for details.

The area in which lines 4 and 5 were drilled is of low relief. The entire area is a poorly drained Muskeg swamp with occasional areas of drier ground. Outcrop exposure in the work area is less than 1 percent and overburden depths are quite deep. Vegetation in the work area is dominated by black spruce, alder, poplar, and occasional tamarack. Small, thick stands of white pine, and occasional open stands of white birch also occur in the vicinity of the work area. All vegetation is second growth.

3.0 Property

The Work Areas are part of a large block of claims held by Outokumpu Mines Limited. This group of contiguous claims, running from north-central Langmuir Township through Eldorado and Adams to southern Deloro Township represents Outokumpu's holdings on the southern margin of the Shaw Dome.

4.0 Regional Geology

The Work Areas are located in the southwestern portion of the Abitibi greenstone belt (fig. 2). The Abitibi greenstone belt is characterised by east-west trending metasedimentary and metavolcanic rocks that have been intruded by a series of felsic to intermediate plutons and diabase dykes.

The area south of the Destor-Porcupine fault in the Timmins camp comprises a series of calc-alkalic mafic to felsic volcanic rocks overlain by a series of thick sulphide and oxide facies iron formations. These in turn are overlain by komatiitic dunites to basalts which are intercalated with minor amounts of tholeiitic volcanics. These rocks are capped by a thick sequence of komatiitic basalts and tholeiitic mafic to intermediate volcanics. The entire sequence has been intruded by numerous granitic and granodioritic intrusions, tholeiitic dykes and sills, and several generations of diabase dykes.

5.0 Work Area Geology

The geology of all three work areas is quite poorly understood. The geology of all three work area has been inferred from previous geophysical work and a limited number of diamond drill holes drilled in the vicinity of the three work areas. The geology of the area is thought to be similar to that of the southern flank of the Shaw Dome. Recent airborne geophysics performed by Outokumpu Mines Ltd outlined several high magnetic anomalies interpreted to be ultramafic units along the southern margin of the Shaw Dome

6.0 Reverse Circulation Drilling

Fifty one reverse circulation drill holes were completed for a total of 814.43 metres. (please see Appendix 1). Rock chips were sorted through a #12 screen. Rock chips retained by the #12 screen were collected, identified and transported to the Outokumpu Mines Limited Office in Timmins, Ontario. The rock chips were then studied under a binocular microscope and a bulk magnetic susceptibility was then determined. A summary of rock types and magnetic susceptibilities are included in appendix 1. A plan map of all three work area is included as appendix 2 of this report and sections of the holes are included as Appendix 2 of this report.

7.0 Results and Conclusions

7.1) *Work Area A - Lines 1 and 2 (Claim No. 1201228 - Eldorado Township)*

7.1.1) Line 1

Line 1 was drilled at 000 degrees (due north) along the major axis of an elliptically shaped high magnetic anomaly. In total, 8 RC holes were drilled at a 40 metre hole spacing. Line 1 was extended to the north and south of the anomaly in order to obtain 'footwall' rock samples and to test the extents of the anomaly. To the north, footwall rocks were not encountered. To the south, RCL1-8 encountered rhyolite. The interpreted high magnetic anomaly is due to the presence of a moderately magnetic, serpentinised, and carbonatised komatiitic Peridotite/Pyroxenite unit. The pyroxenitic nature of this unit and the lack of any appreciable sulphide content make this anomaly an unlikely host for a Mount Keith style Ni - Cu sulphide deposit.

7.1.2) Line 2

Line 2 was drilled at 000 degrees (due north) along the major axis of an elliptically shaped high magnetic anomaly. In total, 13 RC holes were drilled at a 40 metre hole spacing. Line 2 was extended to the north and south of the anomaly in order to obtain 'footwall' rock samples and to test the extents of the anomaly. To the north, footwall rocks were not encountered. To the south, RCL2-12 encountered dacite. The interpreted high magnetic anomaly is due to the presence of a highly magnetic, serpentinised, and carbonatised komatiitic Peridotite/Pyroxenite unit. The pyroxenitic

nature of this unit and the lack of any appreciable sulphide content make this anomaly an unlikely host for a Mount Keith style Ni - Cu sulphide deposit.

7.2) Work Area B - Line 3 (Claim Numbers 1204595 and 1198831 - Deloro Township)

7.2.1) Line 3

Line 3 was drilled at a bearing of 157 degrees along an elliptically shaped, high magnetic anomaly whose major axis trends at roughly 000 degrees (due north). In total, 13 RC holes were drilled at a 60 metre hole spacing. Line 3 was extended to the northwest and to the southeast of the anomaly in order to obtain 'footwall' rock samples and to test the extents of the anomaly. Footwall rocks were not encountered at either end of the line. The interpreted high magnetic anomaly is due to the presence of a highly magnetic, serpentinised, and carbonatised komatiitic Peridotite/Dunite unit. This unit shows a well developed adcumulitic texture but lacks any appreciable sulphide content.

7.3) Work Area C - Lines 4 and 5 (Claim Numbers 1204344 and 1204348 - Adams Township)

7.3.1) Line 4

Line 4 was drilled at 000 degrees (due north) along the major axis of an elliptically shaped high magnetic anomaly. In total, 5 RC holes were drilled at a 40 metre hole spacing. Line 4 was extended to the north and south of the anomaly in order to obtain 'footwall' rock samples and to test the extents of the anomaly. Unfortunately, poor results were obtained from Line 4 and the line was abandoned after having drilled only 5 holes. The ultramafic rocks encountered along line 4 were highly weathered and of poor quality. Further, the occurrence of ultramafic rocks was inconsistent. The interpreted high magnetic anomaly is due to the presence of a weakly magnetic, highly serpentinised, and carbonatised komatiitic Peridotite/Pyroxenite unit. The pyroxenitic nature of this unit, lack of any appreciable sulphide content, high degree of weathering, and inconsistency of the unit make this anomaly an unlikely host for a Mount Keith style Ni - Cu sulphide deposit.

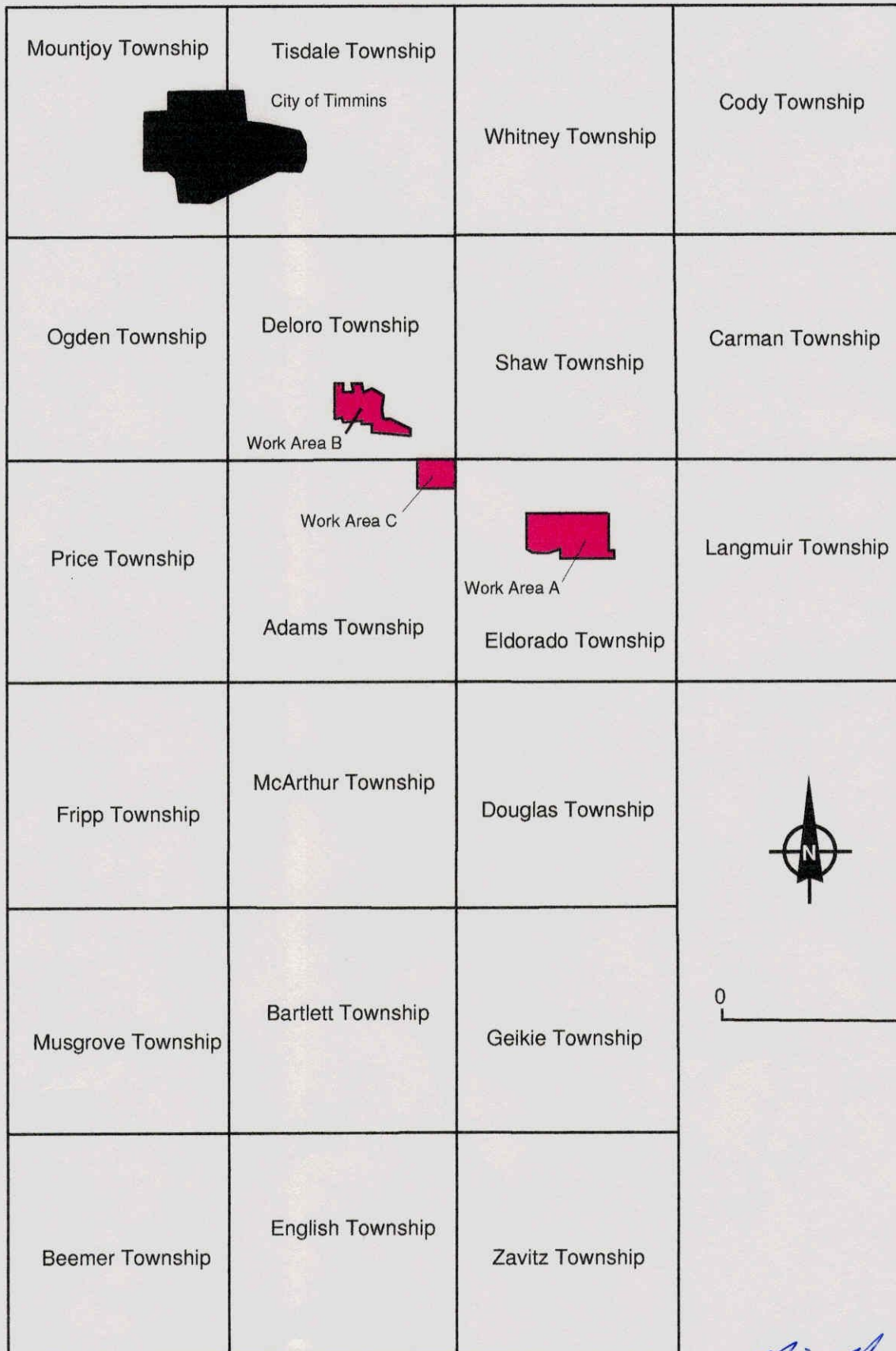
7.3.2) Line 5

Line 5 was drilled at 000 degrees (due north) along the major axis of an elliptically shaped high magnetic anomaly. In total, 12 RC holes were drilled at a 40 metre hole spacing. Line 5 was extended to the north and south of the anomaly in order to obtain 'footwall' rock samples and to test the extents of the anomaly. To the south, footwall rocks were not encountered. To the north, RCL5-8 encountered dacite. The interpreted high magnetic anomaly is due to the presence of a highly magnetic, serpentinised, and carbonatised komatiitic Peridotite/Pyroxenite unit. The unit is quite talc rich and appears to have been completely recrystallised, obliterating any original igneous textures. The lack of any appreciable sulphide content and the high degree of metamorphism make this anomaly an unlikely host for a Mount Keith style Ni - Cu sulphide deposit.

8.0 Recommendations

It is recommended that no further work be done on Work Areas A and C. Further work may be considered on Work Area B (Line 3) in the form of a limited soil sampling programme. This should only be pursued if Whole Rock samples from Line 3 show anomalous Nickel values.

Figure 1, Location Map: Work Areas; RC Drilling 1997



Mick Hendrix

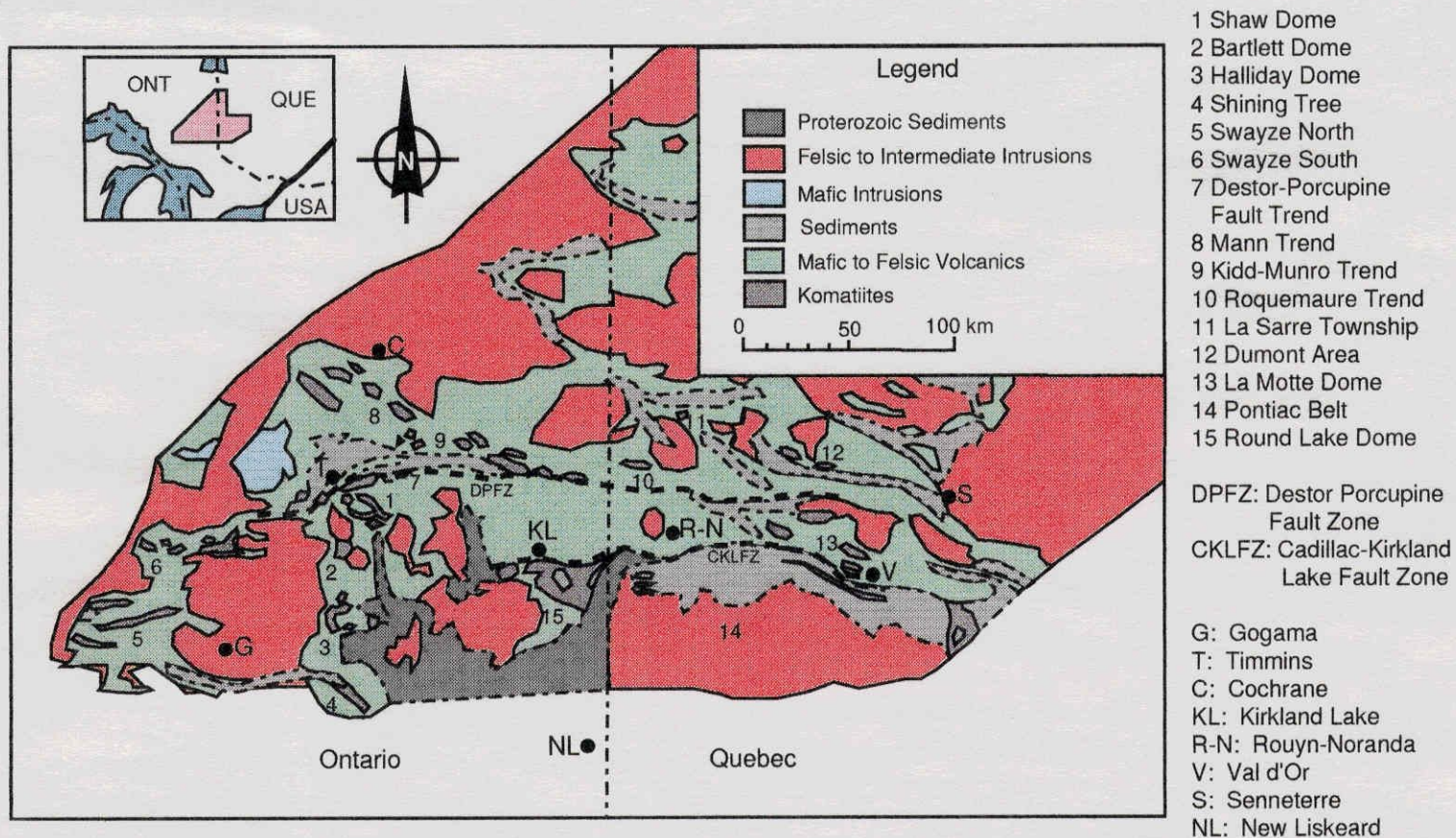
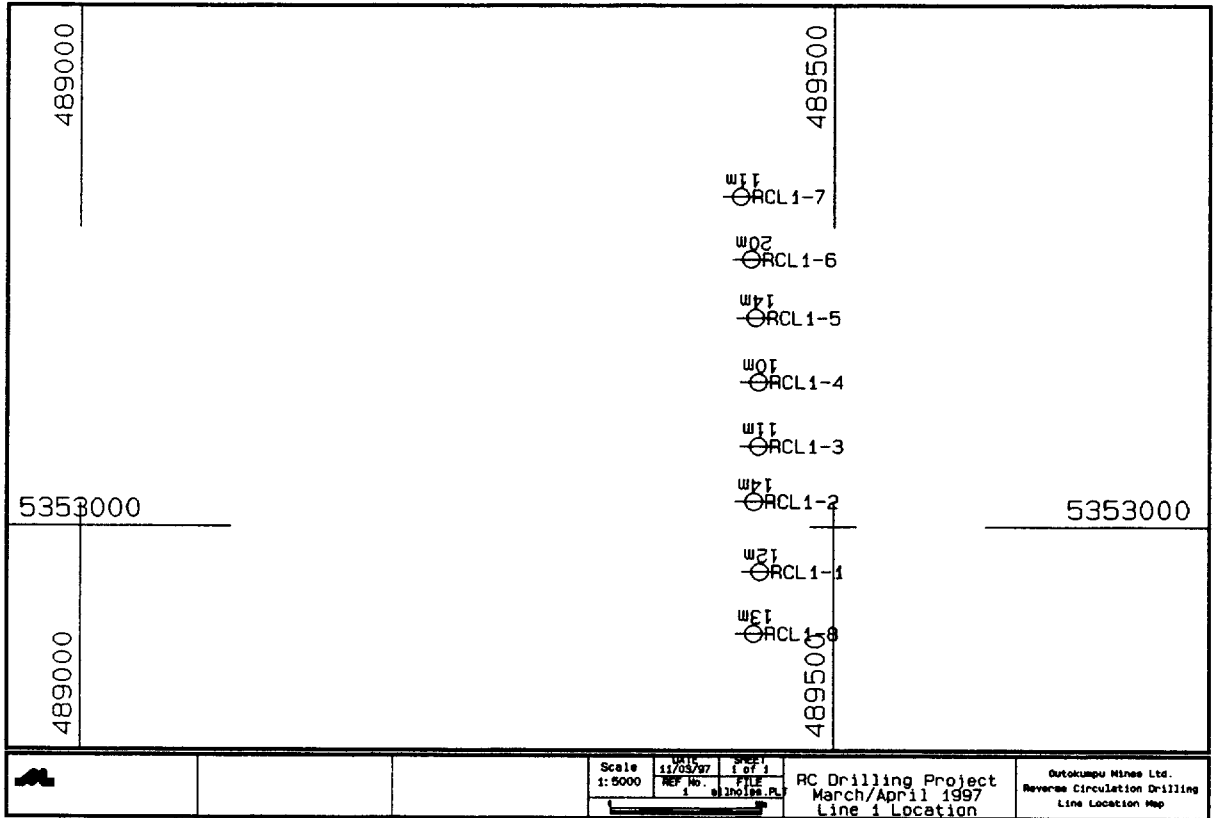


Figure 2: Regional geological map showing the distribution of komatiitic successions in the Abitibi greenstone belt (1-13) and the adjacent Pontiac metasedimentary belt (14) (modified from Goodwin and Ridler 1970; MERQ-OGS 1983; and Heather 1993).

Nick Hendrix

Appendix 1
Plan Maps
of
RC Drill Lines



Nick Honchitz

490000

490500

5353000

5353000

W8
ORCL2-9

W5
ORCL2-8

W0T
ORCL2-7

WPT
ORCL2-6

WIT
ORCL2-5

WPT
ORCL2-4

WGT
ORCL2-3

WPT
ORCL2-2

W/I
ORCL2-1

WBT
ORCL2-10

WIT
ORCL2-11

WPT
ORCL2-12

WGT
ORCL2-13

490000

490500



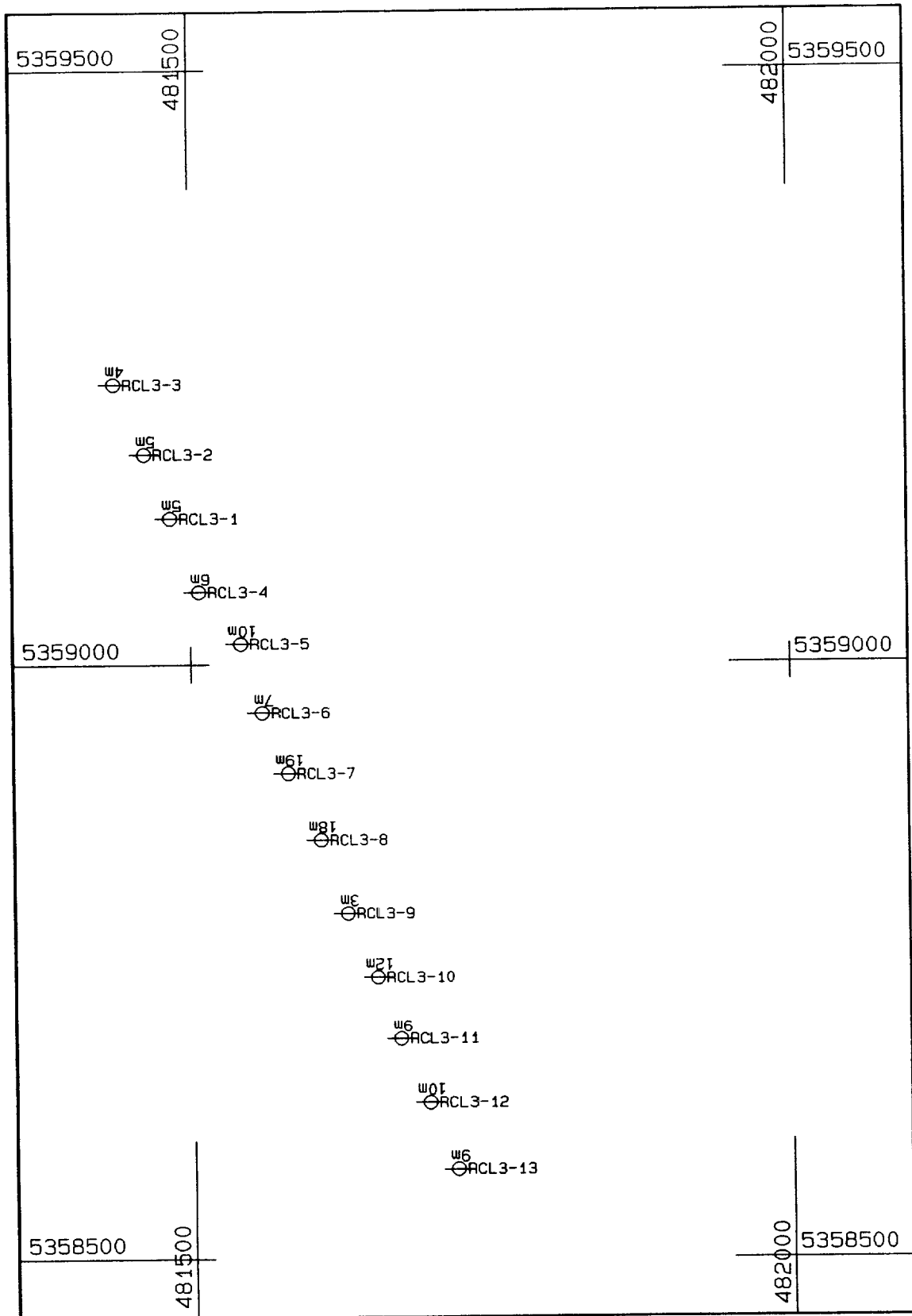
Scale 1: 5000	DATE 11/03/97	SHEET 1 of 1
	REF No. 1	FILE allholes.PLT



AC Drilling Project
March/April 1997
Line 2 Location

Outokumpu Mines Ltd.
Reverse Circulation Drilling
Line Location Map

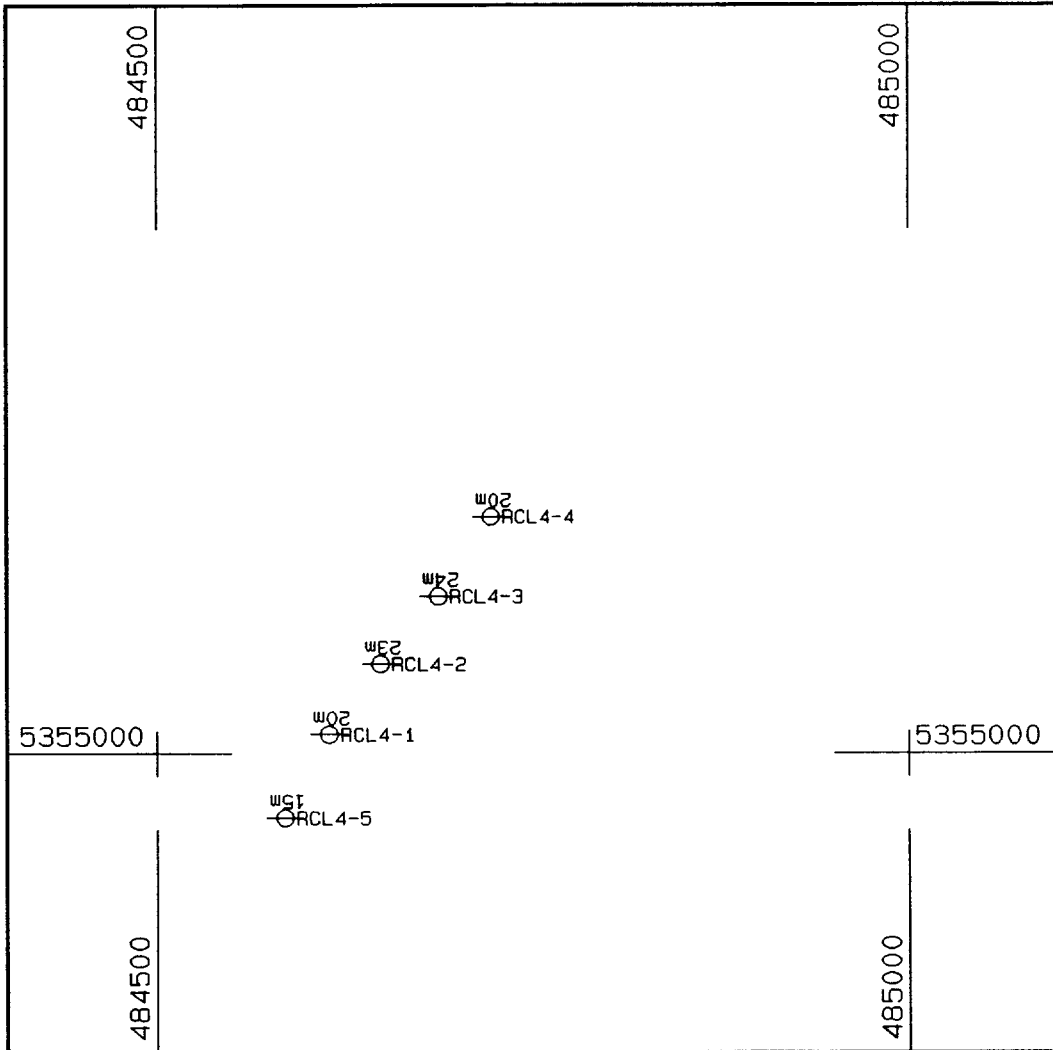


Nick Hendrix



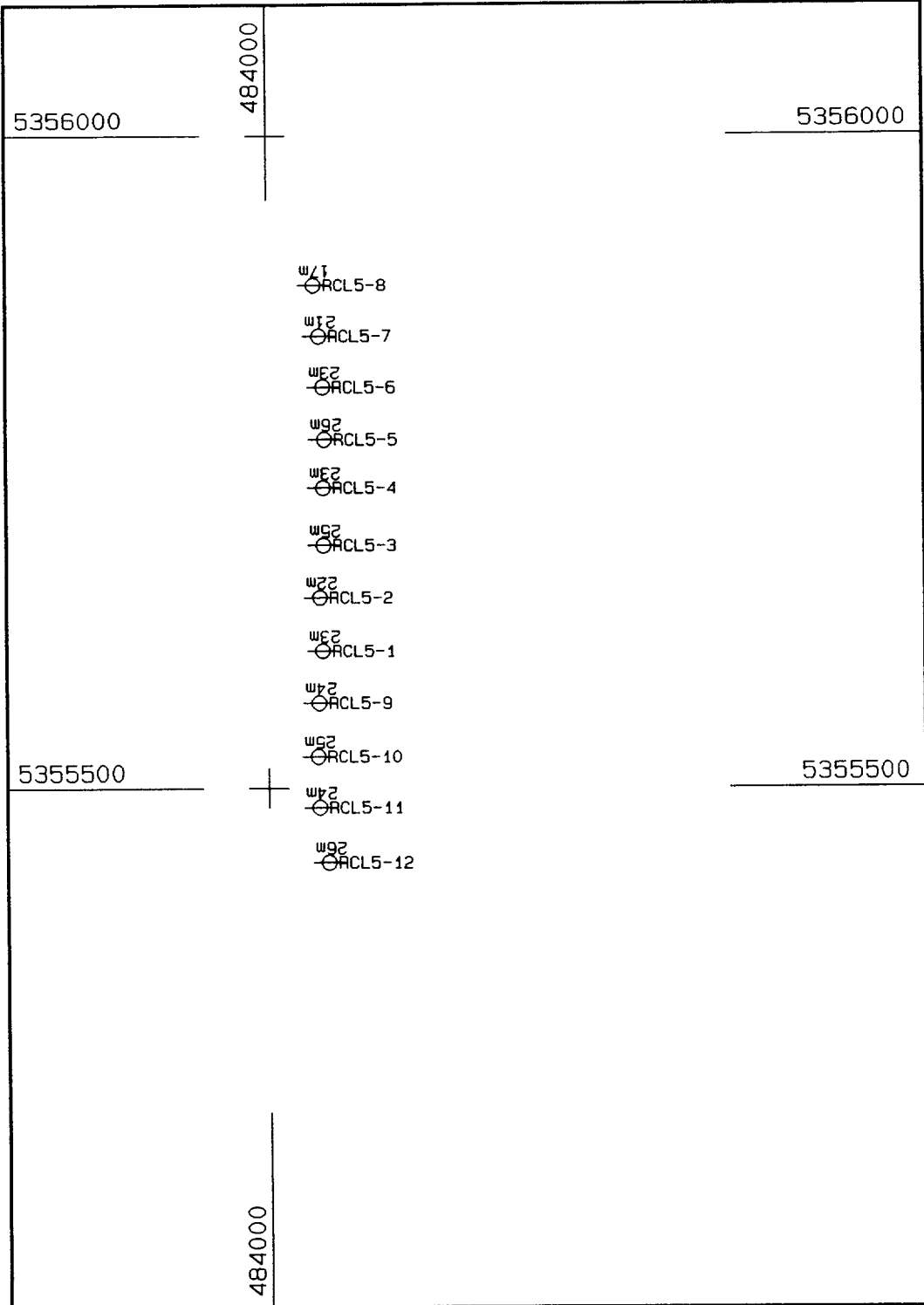
Plotted with  MICROMINE Resources Software Perth, Australia Tel +61 9 366 8722 Fax +61 9 366 7462			DATE 1/03/97	SHEET 1 of 1	RC Drilling Project March/April 1997 Line 3 Location	Dubekumpu Mines Ltd. Reverse Circulation Drilling Line Location Map
	Scale 1: 5000	REF No. 1111388	FILE 1111388.PLT			

Nick Hendry



	DATE	SHEET	RC Drilling Project PT March/April 1997 Line 4 Location	Detconex Hess Ltd. Reverse Circulation Drilling Line Location Map
	Scale: 1:5000	1/03/98		
	REF No.	FILE		
	10110185			

Nick Hendry



A			DATE	SHEET	RC Drilling Project Reverse Circulation Drilling Line 5 Location	Graham Mine Ltd. Reverse Circulation Drilling Line Location Map
			Scale: 1:5000	1 of 1		
			REF No.	FILE	PLT	
			all holes		March/April 1997	
			0 100			

Nick Hondor

Appendix 2
Reverse Circulation
Drilling Project
Summary

RC Drilling (1997) Information Summary

May 2, 1997

Hole No.	Overburden Depth		Sample From		Sample To		Total Hole Depth		Whole Rock #	UTM Location (zone 17)		Rock Type	Magnetic Susceptibility of Rock Chips (nT)
	Feet	Metres	Feet	Metres	Feet	Metres	Feet	Metres		Easting	Northing		
RCL1-1	29	8.84	30	9.14	40	12.19	40	12.19	WR37901	489451	5352970	KPd	0.06
RCL1-2	35	10.67	39	11.89	45	13.72	45	13.72	WR37902	489447	5353017	KBa	0.08
RCL1-3	17	5.18	21	6.40	35	10.67	35	10.67	WR37903	489450	5353054	KPd	0.055
RCL1-4	21	6.40	24	7.32	32	9.75	32	9.75	WR37904	489450	5353097	KPx/Pd	0.08
RCL1-5	34	10.36	37	11.28	45	13.72	45	13.72	WR37905	489448	5353140	KPx/Pd	0.0525
RCL1-6	53	16.15	58	17.68	65	19.81	65	19.81	WR37906	489445	5353179	KPx/Pd	0.04
RCL1-7	22	6.71	25	7.62	35	10.67	35	10.67	WR37907	489438	5353221	KPd	0.03
RCL1-8	33	10.06	34	10.36	35	10.67	42	12.80	WR37908	489447	5352929	Carb/Chl vein	0.0005
RCL1-8	33	10.06	37	11.28	42	12.80	42	12.80	WR37909	489447	5352929	Rhyolite	0.0003
RCL2-1	41	12.50	45	13.72	55	16.76	55	16.76	WR37910	490279	5352885	KPx/Pd	0.045
RCL2-2	37	11.28	40	12.19	47	14.33	47	14.33	WR37911	490276	5352923	KPd	0.06
RCL2-3	35	10.67	40	12.19	50	15.24	50	15.24	WR37912	490268	5352971	KPd	0.0525
RCL2-4	36	10.97	40	12.19	45	13.72	45	13.72	WR37913	490259	5353009	KPd	0.055
RCL2-5	26	7.92	32.5	9.91	35	10.67	35	10.67	WR37914	490257	5353046	KPx/Pd	0.04
RCL2-6	37	11.28	40	12.19	45	13.72	45	13.72	WR37915	490248	5353085	KPx/Pd (?)	0.00055
RCL2-7	29	8.84	31	9.45	34	10.36	34	10.36	WR37916	490238	5353125	KPd/Px	0.05
RCL2-8	24	7.32	27	8.23	31	9.45	31	9.45	WR37917	490223	5353154	KPx/Pd	0.03
RCL2-9	16	4.88	18	5.49	25	7.62	25	7.62	WR37918	490221	5353201	KPd	0.045
RCL2-10	56	17.07	58	17.68	60	18.29	60	18.29	WR37919	490285	5352846	KPd/Px	0.035
RCL2-11	64	19.51	65	19.81	68	20.73	68	20.73	WR37920	490284	5352808	KPd/Px	0.0003
RCL2-12	37	11.28	38.5	11.73	40	12.19	40	12.19	WR37921	490288	5352765	Dacite	0.0008
RCL2-13	45	13.72	47	14.33	50	15.24	50	15.24	WR37922	490292	5352726	Granitic Dyke	0.0004
RCL3-1	11	3.35	12	3.66	15	4.57	15	4.57	WR37941	481484	5359123	KPd	0.032
RCL3-2	9	2.74	10	3.05	15	4.57	15	4.57	WR37942	481463	5359177	KPd/Du	0.025
RCL3-3	8	2.44	9	2.74	13	3.96	13	3.96	WR37943	481438	5359236	KPd/Px	0.045
RCL3-4	17	5.18	18	5.49	20	6.10	20	6.10	WR37944	481507	5359061	KPd/Px	0.035
RCL3-5	30	9.14	31	9.45	33	10.06	33	10.06	WR37945	481541	5359017	KPd	0.043

John Gendron

RC Drilling (1997) Information Summary

May 2, 1997

Hole No.	Overburden Depth		Sample From		Sample To		Total Hole Depth		Whole Rock #	UTM Location (zone 17)		Rock Type	Magnetic Susceptibility of Rock Chips (nT)
	Feet	Metres	Feet	Metres	Feet	Metres	Feet	Metres		Easting	Northing		
RCL3-6	20	6.10	21	6.40	23	7.01	23	7.01	WR37946	481558	5358959	KPd/Px	0.045
RCL3-7	58	17.68	59	17.98	62	18.90	62	18.90	WR37947	481579	5358908	KDu	0.013
RCL3-8	55	16.76	56	17.07	60	18.29	60	18.29	WR37948	481606	5358852	KDu	0.0035
RCL3-9	6	1.83	7	2.13	11	3.35	11	3.35	WR37949	481628	5358790	KPd	0.03
RCL3-10	33	10.06	34	10.36	40	12.19	40	12.19	WR37950	481653	5358736	KPd/Px	0.007
RCL3-11	22	6.71	23	7.01	28	8.53	28	8.53	WR37951	481672	5358682	KDu	0.0035
RCL3-12	31	9.45	32	9.75	34	10.36	34	10.36	WR37952	481696	5358631	KPd/Px	0.022
RCL3-13	26	7.92	27	8.23	29	8.84	29	8.84	WR37953	481719	5358575	KPd	0.004
RCL4-1	61	18.59	62	18.90	64	19.51	67	20.42	WR37935	484615	5355013	KPx	0.0003
RCL4-1	61	18.59	64	19.51	67	20.42	67	20.42	WR37936	484615	5355013	Gabbro	0.002
RCL4-2	71	21.64	73	22.25	75	22.86	75	22.86	WR37937	484649	5355060	Andesite	0.0005
RCL4-3	72	21.95	73	22.25	80	24.38	80	24.38	WR37938	484687	5355105	KPd/Px	0.0015
RCL4-4	63	19.20	64	19.51	67	20.42	67	20.42	WR37939	484722	5355158	KPd (?)	0.022
RCL4-5	44	13.41	45	13.72	49	14.94	49	14.94	WR37940	484586	5354957	KPd	0.05
RCL5-1	69	21.03	72	21.95	76	23.16	76	23.16	WR37923	484042	5355605	KPd/Px	0.02
RCL5-2	67	20.42	69	21.03	71	21.64	71	21.64	WR37924	484040	5355646	KPd/Du	0.0035
RCL5-3	74	22.56	75	22.86	83	25.30	83	25.30	WR37925	484043	5355686	KPd	0.015
RCL5-4	65	19.81	67	20.42	77	23.47	77	23.47	WR37926	484043	5355730	KPd	0.05
RCL5-5	75	22.86	77	23.47	85	25.91	85	25.91	WR37927	484044	5355767	KPd/Du	0.02
RCL5-6	70	21.34	72	21.95	77	23.47	77	23.47	WR37928	484043	5355807	KPd	0.013
RCL5-7	56	17.07	56	17.07	58	17.68	69	21.03	WR37929	484040	5355846	KPd	0.025
RCL5-8	50	15.24	52	15.85	55	16.76	55	16.76	WR37930	484036	5355885	Dacite	0.0005
RCL5-9	72	21.95	73	22.25	78	23.77	78	23.77	WR37931	484039	5355565	KPd	0.03
RCL5-10	78	23.77	79	24.08	82	24.99	82	24.99	WR37932	484038	5355524	KPd	0.0003
RCL5-11	73	22.25	74	22.56	80	24.38	80	24.38	WR37933	484039	5355485	KPd/Px	0.00055
RCL5-12	79	24.08	80	24.38	85	25.91	85	25.91	WR37934	484046	5355443	KPd	0.0175

Total metres drilled= 814.43

Mike Hendrix



Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) 09360.00601
Assessment Files Research Imaging

Personal information Mining Act, the inform Questions about this: 933 Ramsey Lake Rr



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1 66(3) of the Mining Act. Under section 8 of the work and correspond with the mining land holder. Northern Development and Mines, 6th Floor.

PROVINCIAL RECORDING OFFICE - SUDBURY											
R F C E I V E D											
AUG 14 1997											
A.M. <u>10</u> P.M.											
7	8	9	10	11	12	1	2	3	4	5	6

Instructions: - For work performed on Crown Lands before recording, use form 0240. - Please type or print in ink.

2.17802

1. Recorded holder(s) (Attach a list if necessary)

Name <i>Outokumpu Mines Ltd.</i>	Client Number <i>178525</i>
Address <i>P.O. Box 1123, Timmins, ON P4N 7H9</i>	Telephone Number <i>(705) 264-5024</i>
	Fax Number <i>(705) 264-5067</i>
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling, stripping, trenching and associated assays Rehabilitation

Work Type <i>Reverse Circulation drilling to acquire Bedrock chip sample</i>	Office Use
	Commodity
	Total \$ Value of Work Claimed <i>\$ 57,317</i>
Dates Work Performed From <i>25 03 97</i> To <i>11 04 97</i>	NTS Reference
Global Positioning System Data (if available)	Mining Division <i>Porcupine</i>
Township/Area <i>Eldorado, Adams, Deloro Twp.</i>	Resident Geologist District <i>Timmins</i>
M or G-Plan Number <i>G-3993, G-3925, G-4001</i>	

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assigning work; - include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name <i>Niels Hendriks</i>	Telephone Number <i>(705) 264-5024</i>
Address <i>P.O. Box 1123, Timmins, ON P4N 7H9</i>	Fax Number <i>(705) 264-5067</i>
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

4. Certification by Recorded Holder or Agent

I, Paul Davis (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent <i>Paul</i>	Date <i>August 12, 1997</i>
Agent's Address <i>P.O. Box 1123, Timmins, ON P4N 7H9</i>	Telephone Number <i>(705) 264-5024</i>
	Fax Number <i>(705) 264-5067</i>

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AUG 14 1997
4:00 PM
GEOSCIENCE ASSESSMENT

Deemed Nov. 12 1997

W9760.00601

	Mining Claim #	# of Claim Units	Work Performed	Work Applied	Work Assigned	Bank
1	1181900	1	0	400 ✓	0	0
2	1198831	3	573	1200 ✓	0	0
3	1198922	1	0	400 ✓	0	0
4	1198923	2	0	800 ✓	0	0
5	1198924	2	0	800 ✓	0	0
6	1201228	12	21208	4800 ✓	16408	0
7	1204098	3	0	1200 ✓	0	0
8	1204100	4	0	1600 ✓	0	0
9	1204292	8	0	3200 ✓	0	0
10	1204293	7	0	2800 ✓	0	0
11	1204294	1	0	400 ✓	0	0
12	1204304	5	0	2000 ✓	0	0
13	1204305	8	0	3200 ✓	0	0
14	1204306	6	0	2400 ✓	0	0
15	1204307	2	0	800 ✓	0	0
16	1204317	2	0	800 ✓	0	0
17	1204319	5	0	2000 ✓	0	0
18	1204320	1	0	400 ✓	0	0
19	1204323	1	0	400 ✓	0	0
20	1204325	1	0	400 ✓	0	0
21	1204328	2	0	800 ✓	0	0
22	1204329	1	0	400 ✓	0	0
23	1204335	2	0	800 ✓	0	0
24	1204344	4	7451	0	7451 ✓	0
25	1204348	9	20061	3600 ✓	8344	8117
26	1204399	1	0	400 ✓	0	0
27	1204404	1	0	400 ✓	0	0
28	1204405	1	0	400 ✓	0	0
29	1204406	2	0	800 ✓	0	0
30	1204407	6	0	2400 ✓	0	0
31	1204475	14	0	5600 ✓	0	0
32	1204595	4	8024	1600 ✓	6424	0
33	1204597	3	0	1200 ✓	0	0
34	1204599	1	0	400 ✓	0	0
35	1204600	1	0	400 ✓	0	0
	Column Totals		57317	49200	38627	8117

2.17302

Paul

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 AUG 14 1997
 4:00 PM
 GEOSCIENCE ASSESSMENT
 OFFICE



Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use) 69760.00 601

RECEIVED AUG 14 1997

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Table with 4 columns: Work Type, Units of Work, Cost Per Unit of work, Total Cost. Includes entries for Reverse Circulation Drilling and Total Value of Assessment Work.

Calculations of Filing Discounts:

- 1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification.

RECEIVED AUG 14 1997 4:00PM GEOSCIENCE ASSESSMENT

Certification verifying costs:

I, Paul Davis, do hereby certify, that the amounts shown are as accurately as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Project Geologist I am authorized to make this certification.

Signature: Paul Date: August 12, 1997

November 18, 1997

Paul Davis
OUTOKUMPU MINES LTD.
PO BOX 1123
TIMMINS, ONTARIO
P4N 7H9

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (705) 670-5863

Dear Sir or Madam:

Submission Number: 2.17802

Status

Subject: Transaction Number(s): W9760.00601 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in **DUPLICATE** to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at jerome_l@torv05.ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,



ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.17802

Date Correspondence Sent: November 18, 1997

Assessor: Lucille Jerome

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9760.00601	1198831	ELDORADO, ADAMS, DELORO	Deemed Approval	November 12, 1997

Section:
16 Drilling POVERB

Correspondence to:
Resident Geologist
South Porcupine, ON

Recorded Holder(s) and/or Agent(s):
Paul Davis
OUTOKUMPU MINES LTD.
TIMMINS, ONTARIO

Assessment Files Library
Sudbury, ON

MAP SYMBOLOGY

Aerial Cableway	Pipeline (above ground)
Boundary	Railroad
International	Single Track
Interprovincial	Double Track
District Township	Abandoned
Indian Reserve	Turbidite
Approximate	Road
Lot, Concession	Highway, County
Approximate	Township
Park Boundary	Access (road of doubtful maintenance or significant driveway)
Bridge	Trail, Back Road (dotted line)
Building	Rapids
Chimney	Double line river with multiple rapids
Cliff, Pit, Pile	Double line river with multiple rapids
Contours	Reservoir
Interpolated	River, Stream, Canal
Approximate	Approximate
Depression	Direction of Flow
Control Points	Point
Horizontal	No. of
Vertical	Spot Elevation (above sea level)
Culvert	Tower
Falls	Transmission Line
Double line river	Poles
Fence, Hedge, Wall	Pylon
Feature Outline (Constructive Features, etc.)	Tunnel
Flooded Land	Utility Poles
Lock	Wharf, Dock, Pier
Marsh or Swamp	Wooded Area
Mast	
Mine Head Frame	
Outcrop	

TISDALE TWP.



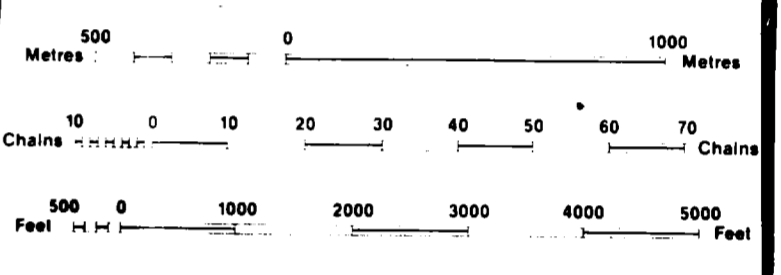
LEGEND

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 PATENTEES BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.



NOTES

- REGISTERED PLAN OF SUBDIVISION
- MINING CLAIMS SHOWN WITHIN THIS AREA ARE SUBJECT TO THE RIGHTS AND PRIVILEGES GRANTED TO DELMITE MINES LTD. UNDER AN EASEMENT ORDER DATED MAY 19, 1937.
- DOMESTIC MINES, LIMITED SURFACE RIGHTS LEASE #103926

DATE OF ISSUE

NOV 18 1997
PROVINCIAL RECORDING OFFICE - SUDBURY

TOWNSHIP
DELORO
M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

Ministry of Land Management
Natural Resources Branch
Ontario
ACTIVATED NOV 24/93 BY: D.C.

ORIGINAL COMPILED: JULY 1984
REVISED CHECKED BY: RW
Number: **G-3993**
Date: Nov 23/97

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
W.P./S.R. NR 92-FEB-24 S.R.O. APPLICATION UNDER THE PUBLIC LANDS ACT FOR A WASTE DISPOSAL SITE	CLM 356	872094		

THE SURFACE AND MINING RIGHTS ARE WITHDRAWN FROM PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990, DATED FEB. 27, 1996 AT 4:01 P.M. ORDER NO. W.P.-11/96 NR.

CLAIMS RELIEVED FROM FORFEITURE ORDER OF THE MINISTER OCT. 9, 1996

THE SURFACE AND MINING RIGHTS ARE RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. C.P. 4/97 NR DATED JAN. 21/97

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

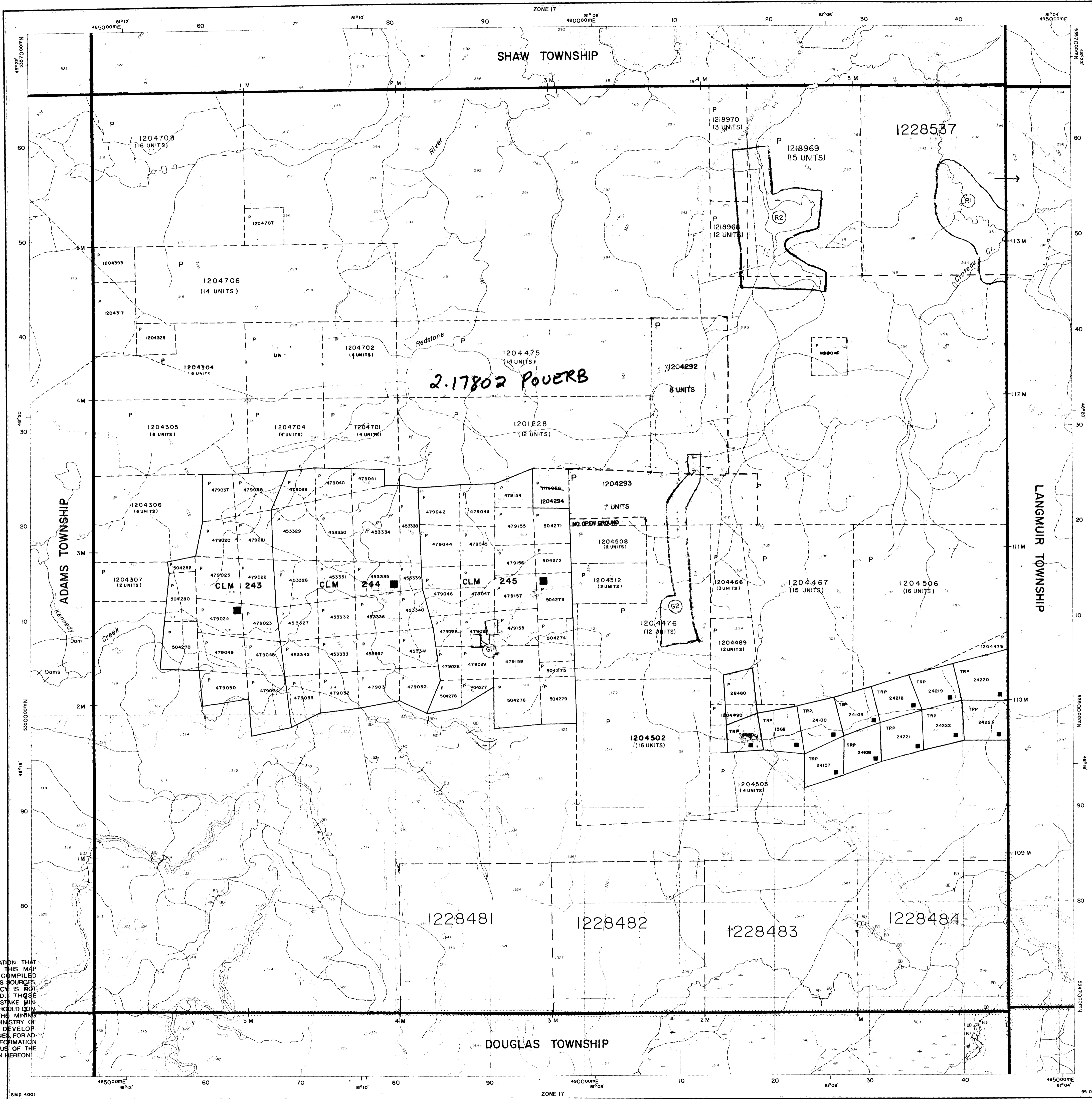
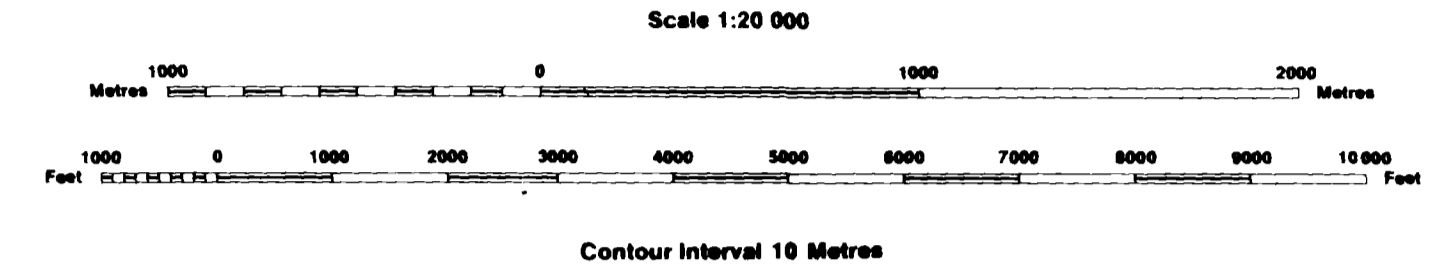


INDEX TO LAND DISPOSITION

PLAN
G-4001
TOWNSHIP

M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES/REGISTRY DIVISION
COCHRANE

ELDORADO



AREAS WITHDRAWN FROM DISPOSITION

Description	Order No.	Date	Disposition	File
MRO - Mining Rights Only				
SRO - Surface Rights Only				
M + S - Mining and Surface Rights				
(G1)			GRAVEL, FILE 192287	
(G2)			GRAVEL, FILE 171598 AND FILE 172954	
(R1)			DUCKS UNLIMITED - PENDING APPLICATION UNDER THE PUBLIC LANDS ACT. S.R.O. WITHDRAWN	
(R2)			DUCKS UNLIMITED - PENDING APPLICATION UNDER THE PUBLIC LANDS ACT. S.R.O. WITHDRAWN	

SYMBOLS

Boundary	
Township, Meridian, Baseline	—
Road allowance, surveyed	—
shoreline	—
Lot/Concession, surveyed	—
unsurveyed	—
Parcel, surveyed	—
unsurveyed	—
Right-of-way, road	—
railway	—
utility	—
Reservation	—
Cliff, Pit, Pile	—
Contour	—
Interpolated	—
Approximate	—
Depression	—
Control point (horizontal)	—
Flooded land	—
Mine head frame	—
Pipeline (above ground)	—
Railway, single track	—
double track	—
abandoned	—
Road, highway, county, township	—
access	—
trail, bush	—
Shoreline (original)	—
Transmission line	—
Wooded area	—

DATE OF ISSUE

NOV 18 1997
PROVINCIAL RECORDING OFFICE - SUDBURY

DISPOSITION OF CROWN LANDS

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	OC
Cancelled	○
Reservation	○
Sand & Gravel	○

ACTIVATED JULY 17, 1995 BY:

ML

Map base and land disposition drafting by Surveys and Mapping Branch, Ministry of Natural Resources.

The disposition of land, location of lot fabric and parcel boundaries on this index was compiled for administrative purposes only.

INFORMATION THAT APPEARS ON THIS MAP WAS COMPILED FROM VARIOUS SOURCES. THE ACCURACY OF THIS MAP IS NOT GUARANTEED. THE MINING DIVISION OF THE MINISTRY OF NORTHERN DEVELOPMENT AND MINES IS NOT RESPONSIBLE FOR ANY LOSS OR DAMAGE TO PROPERTY OR PERSONS ARISING FROM THE USE OF THIS MAP.

C-3925

2MADA

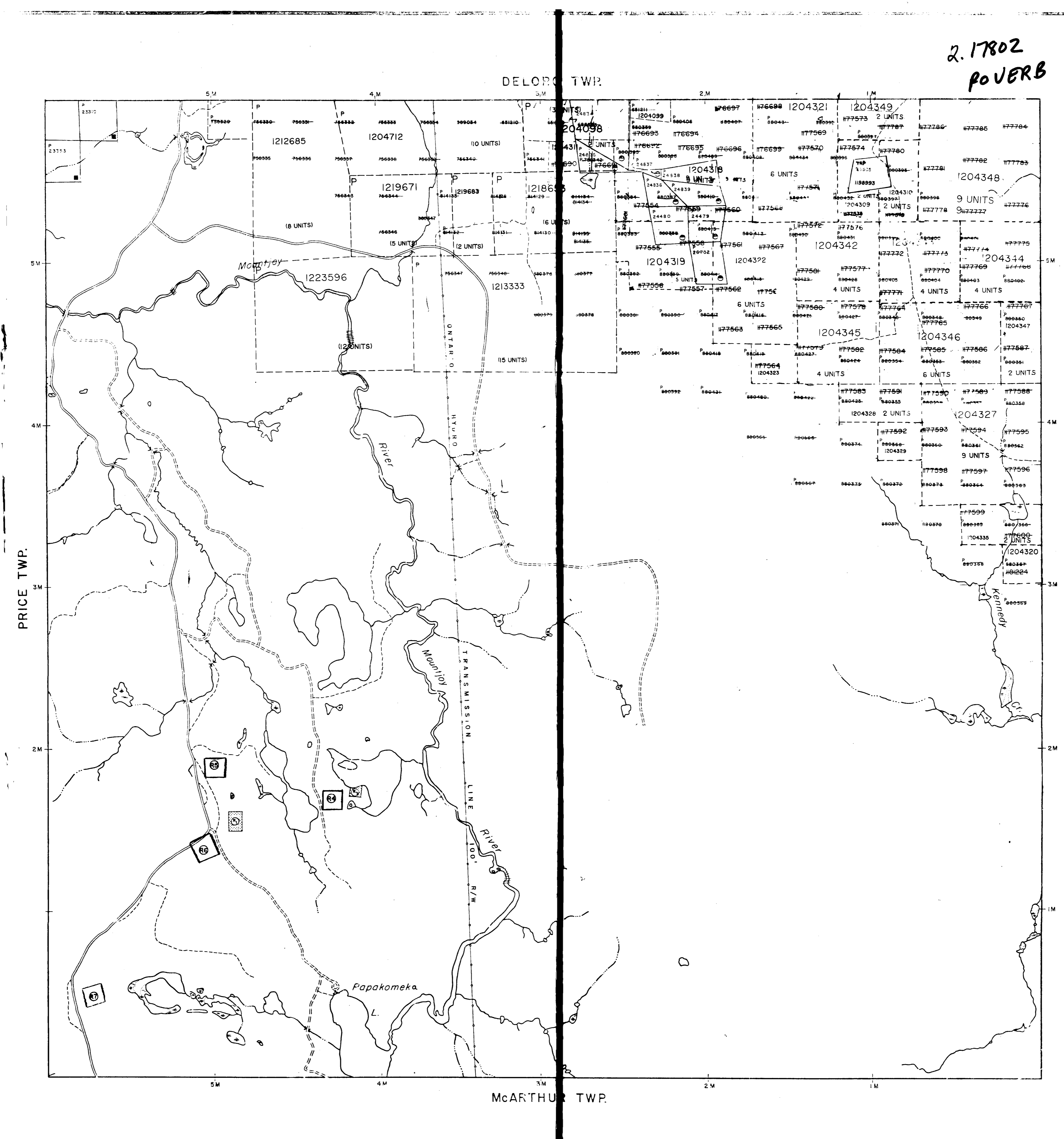
C-3925

M.R.O. - MINING RIGHTS
 S.R.O. - SURFACE RIGHTS ONLY
 M+S. - MINING AND SURFACE RIGHTS

Description Order No. Date Disposition File

- 3.P. UNDER PLAN 8300/1000-SEE LAST
- 14 MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. W-P 56/94 NER DATED 94-MAY-02
- 15 MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. W-P 57/94 NER DATED 94-MAY-02
- 16 MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. W-P 58/94 NER DATED 94-MAY-02
- 17 MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. W-P 59/94 NER DATED 94-MAY-02

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

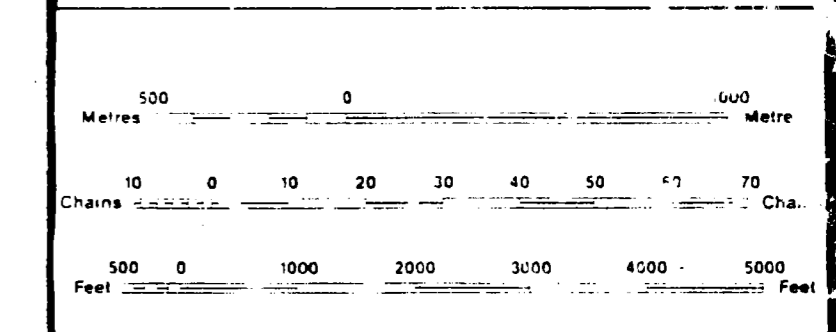


LEGEND

HIGHWAY AND ROUTE NO.	
OTHER ROAD S.	
TRAILS	
SURVEYED LINES	
TOWNSHIPS, BASE LINES, ETC.	
LOTS, MINING CLAIMS, PARCELS, ETC.	
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SUBDIVISION OR COMPOSITE PLAN	
RESERVATIONS	
ORIGINAL SHORELINE	
MARSH OR MUSKEG	
WATER	
TRANSVERSE SECTION	

DISPOSITION OF CROWN LANDS

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



SCALE 1:20 000

THIS TWP. SUBJECT TO FOREST ACTIVITY IN 1994-95. FURTHER INFORMATION AVAILABLE ON FILE.

THIS TWP. SUBJECT TO FOREST ACTIVITY IN 1995-96. FURTHER INFORMATION AVAILABLE ON FILE.

DATE OF ISSUE

NOV 18 1997

PROVINCIAL RECORDING OFFICE - SUDBURY

TOWNSHIP

ADAMS

M.N.R. ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ministry of Natural Resources Ontario

Ministry of Northern Development and Mines

DATE: SEPTEMBER, 1986

CHECKED BY: [Signature]

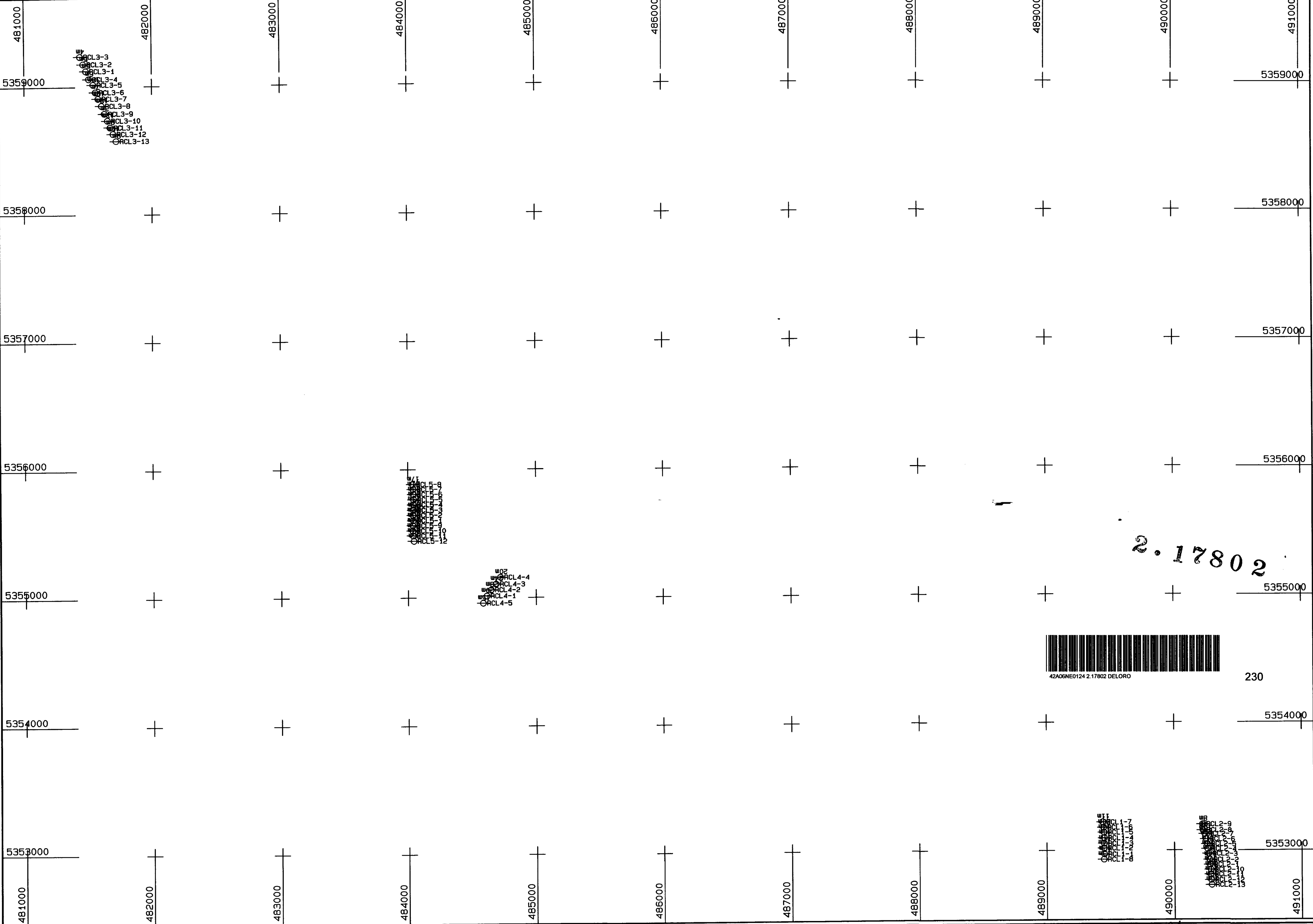
220


G-3925

C-3925

2MADA

C-3925



Plotted with

MICROMINE
 Resources Software
 Perth, Australia
 Tel +61 9 389 8722
 Fax +61 9 386 7462

Nick Hendrix

Scale
 1:20000

DATE 11/03/97	SHEET 1 of 1
REF No. 1	FILE line3ass.PLT

RC Drilling Project
 March/April 1997
 Line 3 Location

4:00 pm *dh*
 Outokumpu Mines Ltd.
 Reverse Circulation Drilling
 Line Location Map

