

ORIGINAL

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28 JAN 1987	
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Action Officer	Initials
Resubmit to	Date

EXPLORATION LICENCE 22/74

MARIONOAK

TASMANIA

REPORT ON SOIL GEOCHEMICAL SURVEY

NORTHERN PORTION OF BASTYAN DAM GRID

DISTRIBUTION

BILLITON AUSTRALIA
ABERFOYLE - BUNNIE
ABERFOYLE - HAWTHORN: RGP/KERD

ISSUED BY:

J. R. SISE
REGIONAL MANAGER

JANUARY 1987.

87-2628

T A B L E O F C O N T E N T S

INTRODUCTION

GRID CUTTING

SOIL GEOCHEMISTRY

DISCUSSION

A P P E N D I X

SOIL GEOCHEMICAL ANALYSES AND SAMPLE DESCRIPTIONS

P L A T E S

1. E.L. 22/74 - MARIONOAK
2. BASTYAN DAM GRID - E.L. 22/74

F I G U R E S

NORTHERN PART OF BASTYAN DAM GRID - SOIL GEOCHEMISTRY

1. COPPER
2. LEAD
3. ZINC
4. SILVER
5. IRON
6. MANGANESE

NO FILMED

INTRODUCTION

This report describes the results of a soil geochemical sampling programme undertaken at the northern end of the Bastyan Dam grid on E.L. 22/74 (Marionoak) during May 1986.

The Exploration Licence of 37 square kilometres is situated approximately 5 kilometres north-west of Rosebery in Western Tasmania (Plate 1). Currently, the main area of activity is the Bastyan Dam grid, which straddles the sealed Lower Pieman Dam road.

The licence is current until 26 February, 1987 and may be renewed for a further year through to the final expiry date of 26 February, 1988. No reduction in area is required during this period. The annual expenditure commitment is \$18,500.

The licence is explored under the terms of the Marionoak Joint Venture between Billiton Australia and Aberfoyle Resources Limited. Currently both parties hold a 50% interest with Aberfoyle acting as manager.

GRID CUTTING

To facilitate a CSAMT survey over the northern portion of the Bastyan Dam grid, five grid lines, each 800 metres in length and 400 metres apart, were cut from line 00N to 1600N and connected by a 1600 metre base line (Plate 2). This amounted to 5.6 line kilometres of grid

002

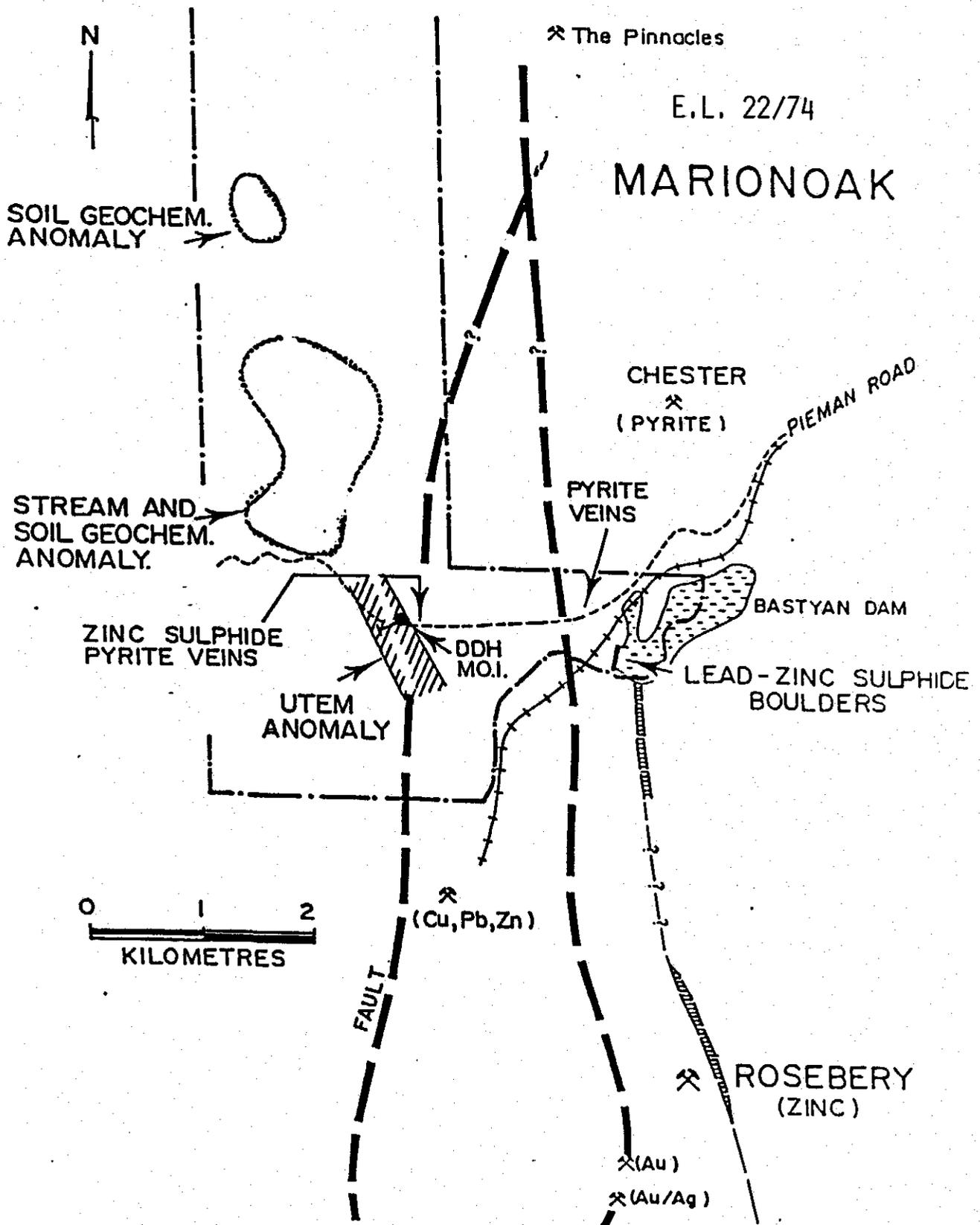


PLATE NO. 1.

BASTYAN DAM GRID

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003

E.L. 22/74

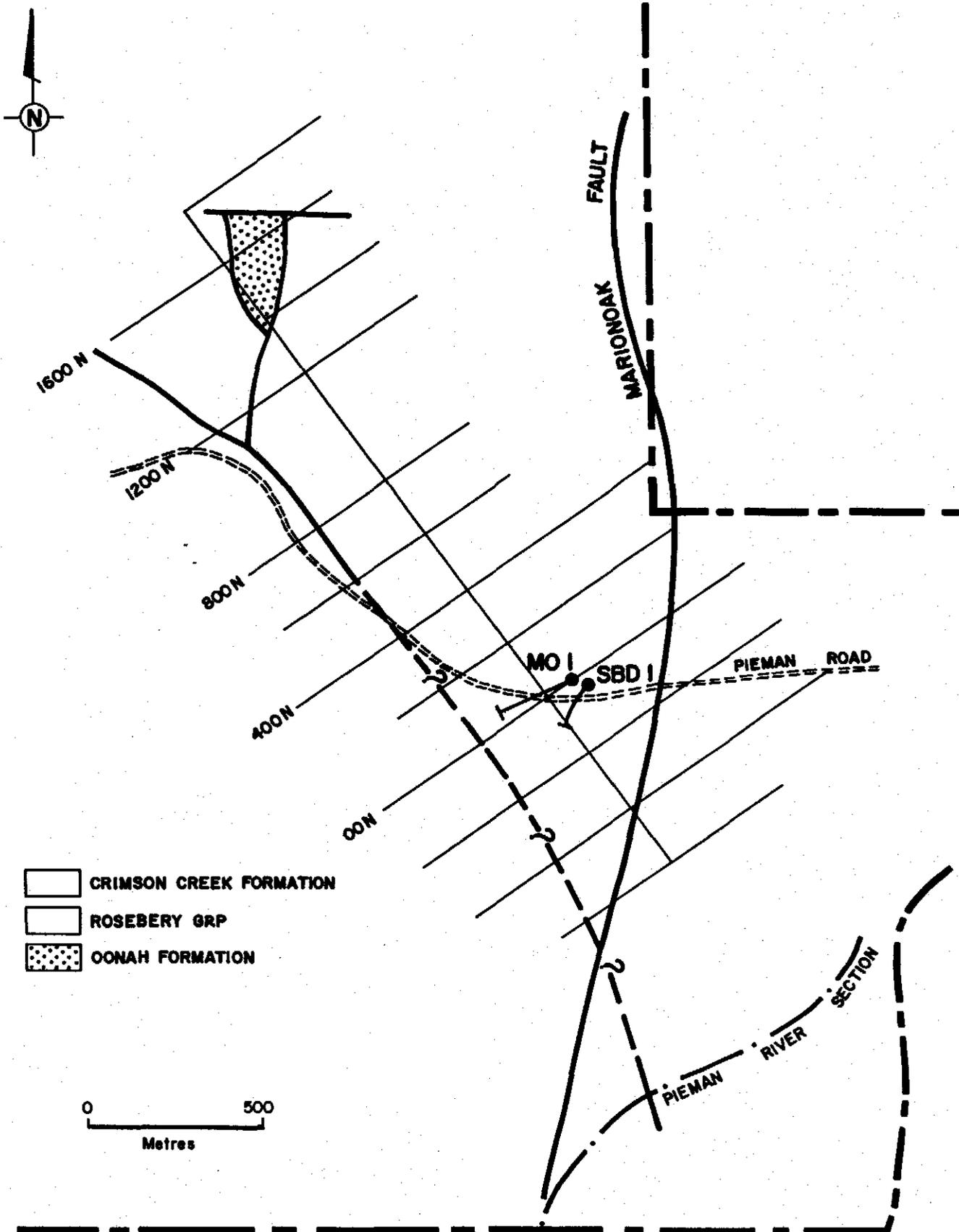


PLATE No. 2.

5 cm

004

2.

cutting. Following interpretation of the CSAMT survey (Zonge, 1986) two extra grid lines were cut (1800N and 1400N) to permit geological, geochemical and geophysical exploration over a zone where the deep and large conductor was interpreted from the CSAMT data to be closest to surface.

SOIL GEOCHEMISTRY

Grid lines 1200N, 1400N, 1600N and 1800N were covered by soil geochemistry. Lines to the south were not sampled due to extensive glacial cover. Samples were collected at 25 metre intervals by hand auger penetrating to the C-horizon. The 93 samples taken were pulverised and despatched together with Aberfoyle internal standards to Analabs in Coee for analysis by AAS for Cu, Pb, Zn, Ag, Fe, Mn. Results are reported in the Appendix and plotted on Figures 1-6.

DISCUSSION

No substantial base metal anomalies were revealed on the grid area sampled. Cu, Pb, Zn, Fe and Mn values are all elevated on 1800N between 00N and 200W. This zone is underlain by Crimson Creek Formation and cut by faults. Gossanous float was found here during geological mapping. A further zone of weakly anomalous Cu, Pb and Zn occurs on 1600N centred at 100E. Quartz-fuchsite-pyrite veining in Rosebery Group sediments was noted at this location. At the western ends of 1200N and 1600N weakly elevated Cu, Pb, Zn and Mn values occur, with Mn defining a fault bounded zone from 1400N, 75W to 1200N, 275W.

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3.

Fe values exceed five percent for most of the grid with one low trend from 1600N, 50W to 1200N, 375W being evident. This zone is also depleted in base metals and very closely outlines the outcrop area of Precambrian Oonah Formation.

In summary, the soil sampling revealed several iron sulphide-bearing shear zones with associated weakly elevated base metals. Follow-up mapping and rock sampling confirmed this, and demonstrates that soil sampling in this particular environment is an effective exploration technique.

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APPENDIX

SOIL GEOCHEMICAL ANALYSES AND

SAMPLE DESCRIPTIONS

ANALABS

956009 ^①

Phone (09) 458 7999

52 Murray Road, Waltham, W.A. 6106

Telex AA92560

ANALYTICAL REPORT NO.

23.3 08 3735

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
Burnie Tas 7320

ORDER No.	PROJECT
295	
DATE RECEIVED	RESULTS REQUIRED
26.5.86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	98

SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
	DRY	CHISEL	SPLIT	PULVERISE	OTHER	OTHER	OTHER	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
272101-307				1				Cu Pb Zn Ag Fe Mn		101 101

RESULTS TO: Re Above
Attn: R. de Bomford

RESULTS TO:

REMARKS

MARION OAK
SOIL SAMPLS.

1200 N
1400 N
1600 N
1800 N

STATE OF SAMPLES	ANALYSIS — PREPARATION				ANALYSIS — METHOD	
WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
PU	HF mixture	A6	ignition	IG	titration	TTN
WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical means	CHEM
TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
SS					fluorescence	FLUOR
HM					inductively coupled plasma	ICP

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ANALABS

Division of Macdonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		23.3 08 3735				30.5.86		295		1 Of 1	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Pg	Fe	Mn				
1	383201	35	175	165	x	4.15%	245			* STD.	
2	383202	175	155	325	x	10.90%	2800				
3	383203	175	220	375	x	11.50%	2600				
4	383204	120	100	260	x	11.50%	1550				
5	383205	200	45	350	x	11.50%	1550				
6	383206	145	60	180	x	12.00%	520				
7	383207	130	55	220	x	9.90%	1050				
8	383208	225	550	350	x	11.50%	2600				
9	383209	150	230	310	x	2.85%	125				
10	383210	65	45	60	x	7.10%	150				
11	383211	50	30	70	x	5.80%	100				
12	383212	90	30	60	x	8.85%	95				
13	383213	65	80	65	x	6.55%	75				
14	383214	x	135	x	x	5050	10				
15	383215	45	50	35	x	5.30%	80				
16	383216	65	55	55	x	6.90%	85				
17	383217	60	55	55	x	7.70%	100				
18	383218	55	50	50	x	6.80%	125				
19	383219	90	60	50	x	9.10%	260				
20	383220	40	40	30	x	4.65%	30				
21	383221	45	75	80	x	6.85%	90				
22	383225	90	85	195	x	12.00%	250				
23	383226	100	35	150	x	8.60%	310				
24	383227	95	40	180	x	8.35%	395				
25	383228	85	50	125	x	9.50%	180				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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009

956011

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		23.3 08 3735			30.5.86		295		2 of 5	
TUBE No.	SAMPLE No.	Cu	Pb		Ag	Fe	Mn			
1	383229	30	180	155	x	4.10%	250		* STD	
2	383232	35	40	45	x	8.20%	175			
3	383233	90	35	110	x	8.50%	185			
4	383234	80	40	100	x	7.95%	320			
5	383235	75	90	85	x	12.00%	245			
6	383236	100	100	85	x	9.15%	170			
7	383237	70	75	90	x	6.65%	120			
8	383238	x	55	10	x	7200	40			
9	383239	100	55	40	x	5.90%	65			
10	383240	x	30	x	x	3400	45			
11	383241	x	35	x	x	2700	10			
12	383242	x	30	x	x	4900	20			
13	383243	10	40	x	x	3350	15			
14	383244	35	170	145	x	3.95%	225		* STD.	
15	383245	5	30	10	x	3450	15			
16	383246	5	35	x	x	1700	x			
17	383247	5	50	x	x	4600	15			
18	383248	80	80	90	x	9.30%	110			
19	383249	75	120	105	x	7.60%	175			
20	383250	155	80	180	x	9.35%	255			
21	383251	65	175	85	x	6.15%	110			
22	383252	65	95	75	x	7.00%	80			
23	383253	100	50	60	x	11.50%	385			
24	383254	90	50	55	x	10.50%	245			
25	383258	5	45	x	x	1.15%	10			

Results in ppm unless otherwise specified
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 - = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3 08 3735

30.5.86

295

3 OF 4

LINE NO.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Mn		
1	383259	40	55	130	x	9.75%	230		
2	383260	80	40	45	x	7.85%	1050		
3	383261	55	35	115	x	9.10%	670		
4	383262	100	40	80	x	9.50%	590		
5	383263	90	35	160	x	9.35%	3000		
6	383264	30	40	75	x	12.00%	495		
7	383265	110	85	95	x	11.50%	1050		
8	383266	100	60	50	x	11.00%	520		
9	383267	60	60	55	x	8.90%	200		
10	383268	105	60	140	x	9.55%	2850		
11	383269	75	55	65	x	7.50%	1700		
12	383270	35	175	160	x	4.25%	245		* STD.
13	383271	75	30	55	x	8.30%	230		
14	383272	35	40	135	x	9.50%	495		
15	383274	30	45	75	x	8.05%	95		
16	383275	90	115	110	x	8.65%	1250		
17	383276	100	55	85	x	9.65%	285		
18	383277	120	50	195	x	12.00%	1500		
19	383278	110	25	120	x	7.65%	1150		
20	383279	90	50	90	x	8.45%	315		
21	383280	135	30	130	x	7.55%	265		
22	383281	75	35	50	1.0	5.95%	55		
23	383282	85	75	60	1.0	7.75%	510		
24	383283	40	120	55	0.5	4.00%	85		
25	383284	15	35	25	0.5	1.95%	15		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to report
 X = element concentration is below detection limit
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SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

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PAGE

23.3 00 3735

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295

4 OF 5

TEST No.	SAMPLE No.		Cu	Pb		Pg	Fe	Mn		
1	383285		5	45	25	x	1.75%	25		
2	383286		85	40	90	0.5	9.15%	200		
3	383287		80	55	20	1.0	8.80%	1050		
4	383288		85	60	70	0.5	9.45%	2700		
5	383289		95	35	90	0.5	9.60%	1400		
6	383290		40	40	45	x	8.20%	550		
7	383291		80	40	70	0.5	9.55%	2450		
8	383292		85	45	60	0.5	8.95%	370		
9	383293		80	35	65	x	8.50%	465		
10	383294		45	40	45	x	7.80%	210		
11	383295		20	40	35	x	6.25%	100		
12	383296		20	25	30	0.5	4.65%	100		
13	383297		x	25	15	0.5	1.60%	40		
14	383298		35	40	50	0.5	4.80%	215		
15	383299		30	30	50	0.5	4.30%	100		
16	383300		45	35	50	0.5	6.25%	80		
17	383301		50	45	50	0.5	5.45%	130		
18	383302		40	30	55	1.0	6.15%	120		
19	383303		35	35	75	0.5	7.95%	210		
20	383304		45	25	95	0.5	8.35%	255		
21	383305		60	20	110	0.5	8.60%	1400		
22	383306		60	35	65	1.0	10.50%	275		
23	383307		50	30	75	x	9.20%	265		
24										
25										

Results in ppm unless otherwise specified
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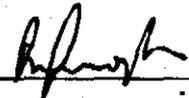
295

5 OF 5

TIME No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Mn		
1	STD 3036	175	605	250	2.0	6.25%	820		
	RPT 383201	35	185	170	x	4.10%	250		
3	RPT 383220	40	50	35	x	4.75%	30		
	STD 3036	180	595	240	2.0	6.40%	795		
	RPT 383241	x	30	5	x	2850	10		
6	RPT 383260	80	40	45	x	8.05%	1000		
	STD 3036	180	610	245	3.0	5.50%	805		
8	RPT 383281	75	45	50	0.5	6.05%	60		
	RPT 383300	50	45	55	1.0	6.50%	80		
10									
11									
13									
15									
17									
19									
20									
22									
23	DETECTION	5	5	5	0.5	50	5		
24	DIGESTION								
25	METHOD	101	101	101	101	101	101		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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①

Project Merionak

Analysis for Cu, Pb, Zn, Mn, As, Fe

Ordinate	Sample No.	Depth	Colour
1200N			
600W	383275	80c	OR/OR
575	76	30c	OR/OR
550	77	95c	OR/OR
525	78	30c	OR/OR
500W	79	70c	OR/OR
475	383280	30c	OR/OR
450	81	70c	OR/OR
425	82	30c	OR/OR
400W	83	70c	YW/OR
375	84	50c	YW/OR
350	85	60c	YW/OR
325	86	50c	BR
300W	87	60c	BR
275	88	50c	OR/OR
250	89	70c	OR-OR
225	383290	50c	dk-BR
200W	91	80c	OR-OR
175	92	70c	OR/OR
150	93	80c	OR/OR
125	94	50c	OR/OR
100W	95	70c	OR/OR
075	96	50c	OR/OR
050	97	80c	Lgt BR
025W	98	40c	OR/OR
000	99	70c	Lgt BR
025E	383300	50c	Lgt BR/Lgt
050	01	70c	Lgt BR
075	02	50c	WH
100E	03	70c	OR/OR

Lo Ordinate	Sample No.	Depth	Colour
1200N			
125E	383304	50c	WH
150	05	40c	OR-OR
175	06	50c	dk-OR
200E	383307	80c	OR/OR

①

Project Maicaoak

Analysis for Cu, Pb, Zn, Mn, Fe

Ordinate	Sample #	Depth	Colour
1600N			
600W	383222	50c	OR/OR
575	23	no sample	
550	24	no sample	
525	25	no sample	
500W	26	50c	OR/OR
475	27	50c	OR/OR
450	28	50c	OR/OR
425	29	no sample *	
400W	383230	no sample	
375	31	no sample	
350	32	50c	dk-b/y
325	33	60c	OR/OR
300W	34	60c	OR/OR
275	35	50c	yw/OR
250	36	50c	yw/OR
225	37	30c	yw/OR
200W	38	50c	OR/OR/y
175	39	40c	OR/OR
150	383240	40c	gy
125	41	40c	gy/WH
100W	42	40c	gy/WH
075	43	30c	gy/WH
050	44	no sample *	
025W	45	30c	gy/OR
00'	46	40c	gy/WH
025E	47	50c	gy/WH
050	48	50c	yw/OR/OR
075	49	50c	yw/OR
100E	383250	50c	yw/OR

3 STD.

3 STD.

Ordinate	Sample #	Depth	Colour
1600N			
125E	383251	60c	OR/OR
150	52	60c	OR/OR
175	53	40c	gy OR/OR
200E	383254	30c	OR/OR

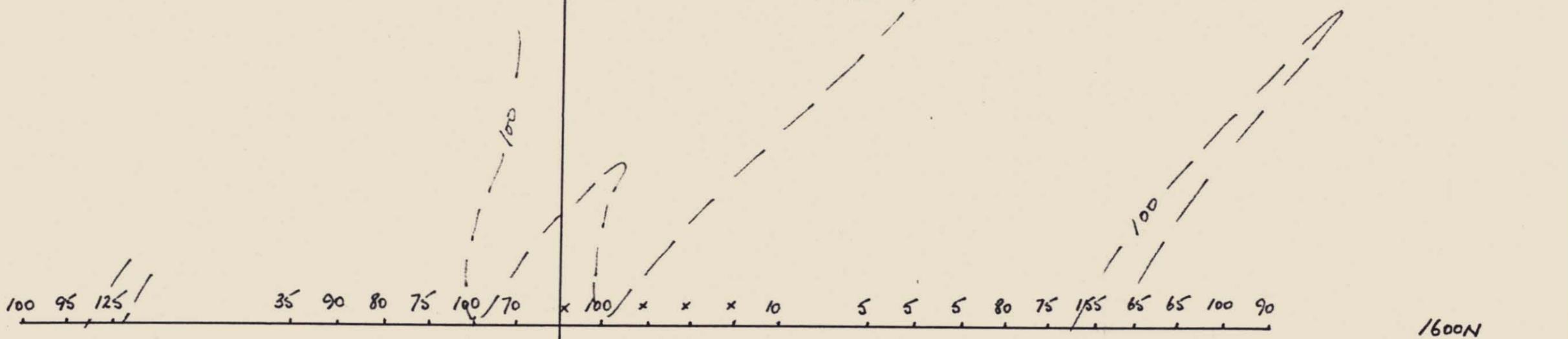
017

956019

FIGURES 1 - 6

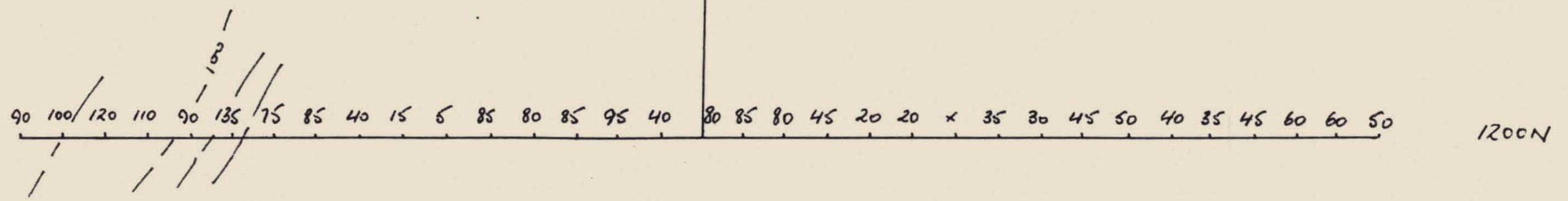
600W
018+
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500W 400W 300W 200W 100W 00 100E 200E 300E
+ + + + + + + +
175 175 120 200 145 130 225 150 65 50 90 65 x 45 65 60 55 90 40 45



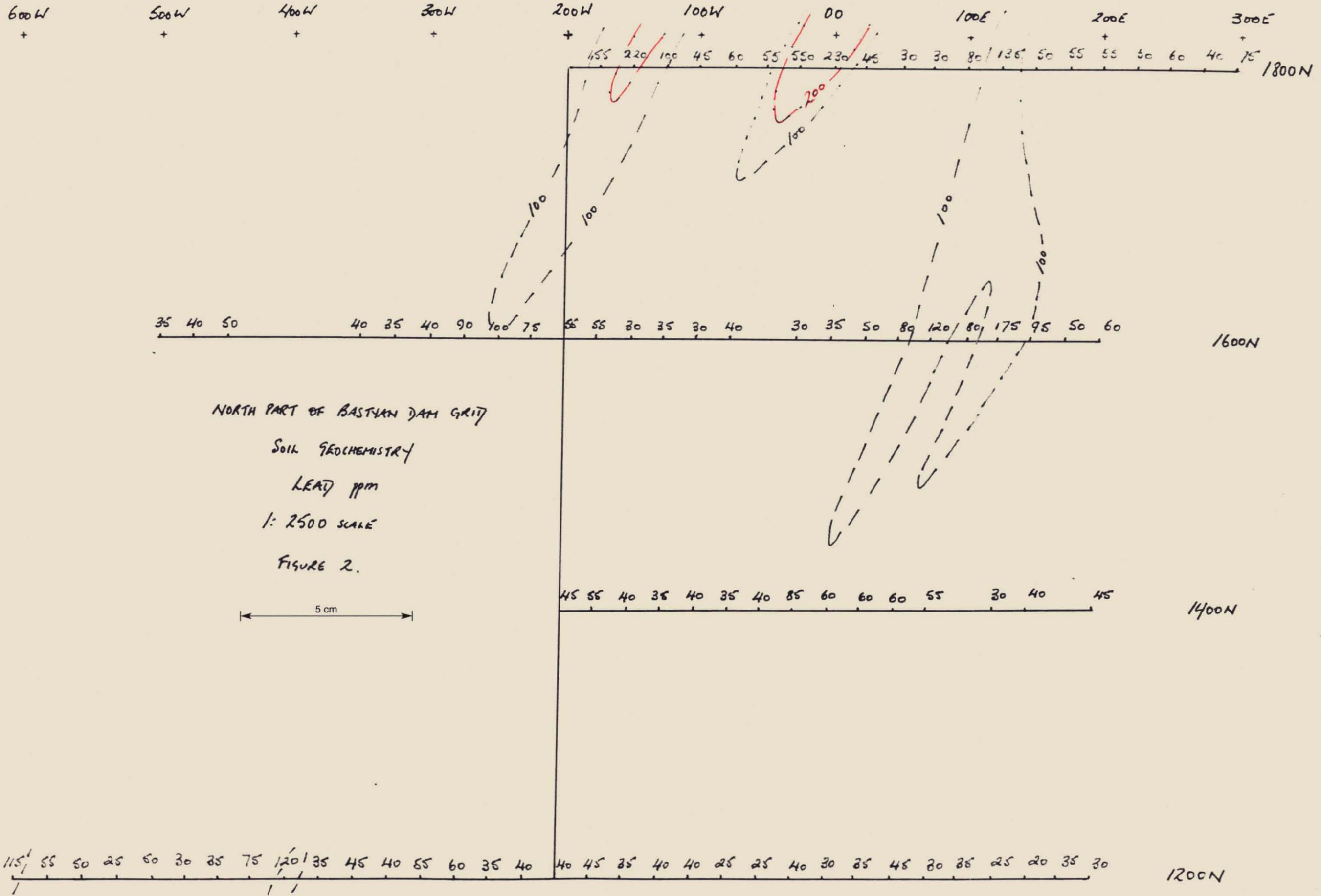
NORTH PART OF BASTIAN DAM GRID
SOIL GEOCHEMISTRY
COPPER ppm
1: 2500 SCALE

FIGURE 1.
5 cm



810

956021



610

956022

600W
+

500W
+

400W
+

300W
+

200W
+

100W
+

00
+

100E
+

200E
+

300E
+

325 375 260 350 180 220 350 310 60 70 60 65 * 35 55 55 50 50 30 80 1800N

150 180/85 45 110 100/85 85 90 10 40 * * * * 10 * * 90 105 180 85 75 60 55 1600N

NORTH PART OF BASTIAN DAM GRID

SOIL GEOCHEMISTRY

ZINC ppm

1: 2500 SCALE

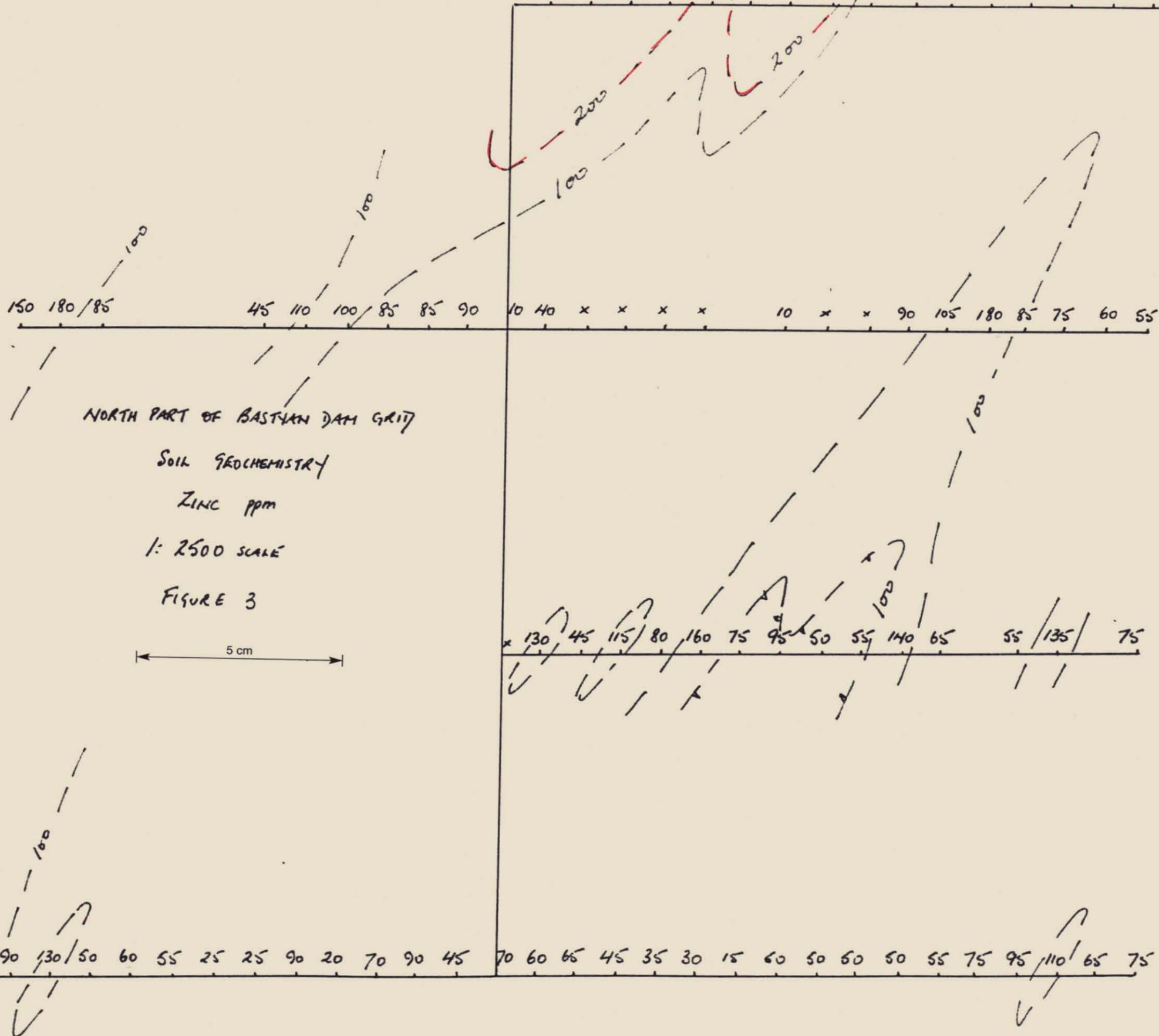
FIGURE 3

5 cm

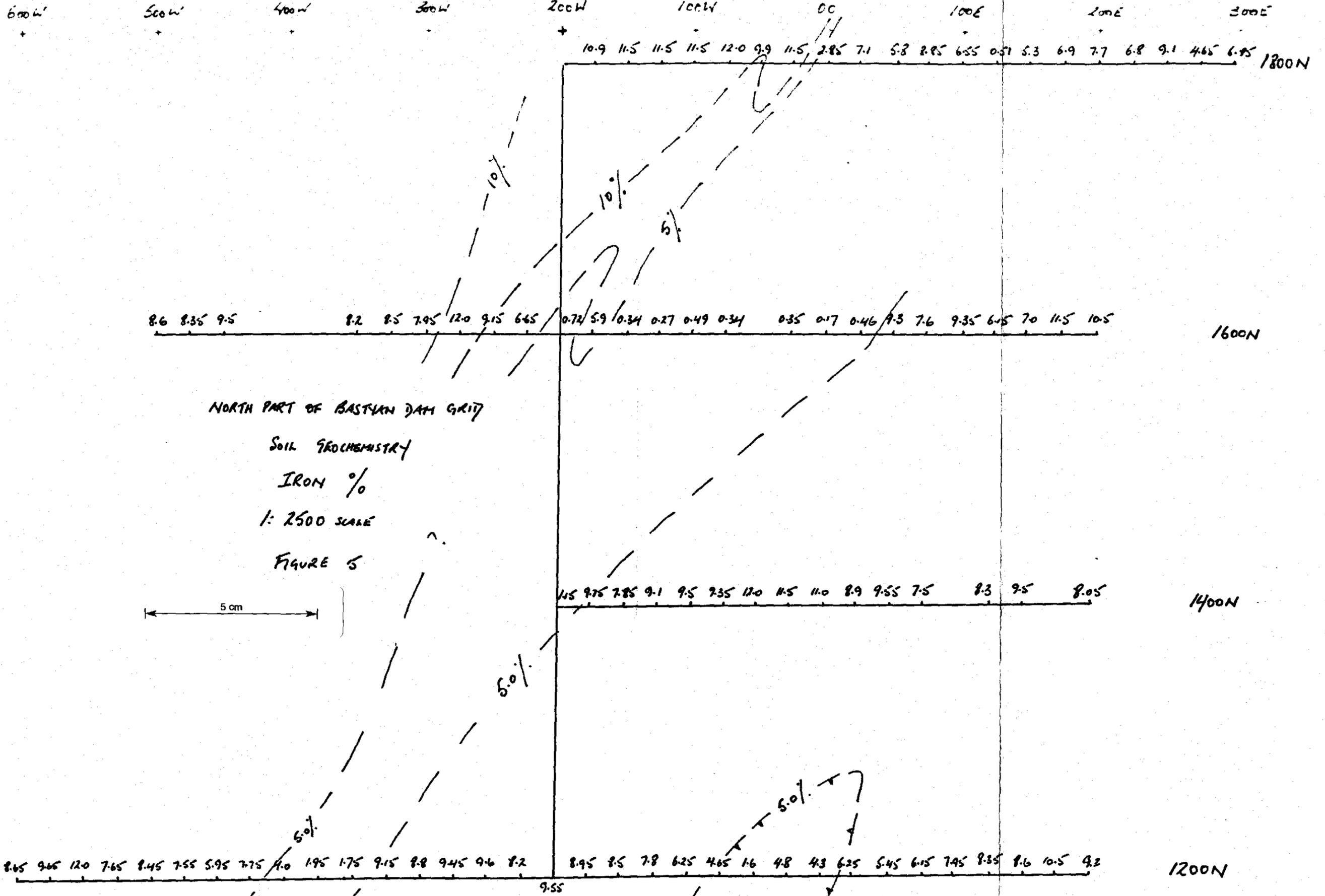
* 130 45 115 80 160 75 95 50 55 140 65 55 135 75 1400N

110 85 195 120 90 130 50 60 55 25 25 90 20 70 90 45 70 60 65 45 35 30 15 60 50 50 50 55 75 95 110 65 75 1200N

020



956024



NORTH PART OF BASTIAN DAM GRID

SOIL GEOCHEMISTRY

IRON %

1: 2500 SCALE

FIGURE 5

022

600W 500W 400W 300W 200W 100W 00 100E 200E 300E

2800 2600 1550 1550 1520 1050 2600 125 150 100 95 75 10 80 85 100 125 260 30 90

310 395 180 175 185 320 245 170 120 40 65 45 10 20 15 15 x 15 110 175 225 110 80 385 245

NORTH PART OF BASTIAN DAM GRID

SOIL GEOCHEMISTRY

MANGANESE ppm

1: 2500 SCALE

FIGURE 6

5 cm

10 230 1050 670 590 3000 495 1055 520 200 2850 1700 230 495 95

1250 285 1500 1150 315 265 55 510 85 15 25 200 1050 2700 1400 550 370 465 210 100 100 40 215 100 80 130 120 210 255 4100 275 265

023

1200N

1400N

1600N

1800N

