C.R.A. EXPLORATION PTY. LIMITED

OPEN FILE

EL 1878 MILLIONAIRES WELL, N.T.

ANNUAL REPORT

PERIOD ENDING 19th OCTOBER 1981

Submitted by: G.P. Jenke .....

Accepted by: W.H. Johnston ..... WHJ

Copy to: N.T. Department of Mines & Energy

Date: December 1981

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NORTHERN TERRITORY
GEOLOGICAL SURVEY

CR82/064

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1. SUMMARY

During the third year of tenure of EL 1878, reprocessing of data from an earlier aeromagnetic survey was completed and a ground magnetometer survey was carried out to better define a broad magnetic response, the southern edge of which is marked by an outcrop of a calc-silicate rock containing magnetite and anomalous tungsten. Further geochemical drainage sampling down-graded the anomalies previously detected.

2. CONCLUSIONS

Follow-up of the previous year's geochemical drainage survey has not produced results warrenting further attention. The magnetic data from the ground survey is "noisy" because of either an erratic distribution of magnetite in the bedrock or the development of magnetic weathering products. A closer line spacing would be needed to establish accurate correlations within the high amplitude zone.

The major magnetic responses in the area remain as yet untested.

3. INTRODUCTION

Previous work by CRAE on Millionaires Well EL 1878 included a detailed airborne magnetic and radiometric survey with the subsequent investigation of radiometric responses (Snelling, 1979) and a drainage geochemistry survey. No significant radiometric responses were found, but during the follow-up programme, an isolated prominent outcrop was visited, sampled and found to be anomalous in tungsten.

Five anomalous samples, one of gold and four of tungsten were found by the drainage survey and recommended for follow-up. The tungsten responses did not include the outcrop mentioned above because of the poorly developed drainage in that area.

4. TITLE

EL 1878 was renewed for an area of 203.57 square miles (527.25km^2) on 19.10.80 for a further period of 12 months (Plan No. NTd 1521).

5. GEOCHEMICAL DRAINAGE SURVEY FOLLOW-UP

The location of samples collected as follow-up to the previous year's survey are shown on Plan No. NTa 418 and the sampling

ledgers in Appendix 2. Panned concentrate from gravels at some of the sites was also assayed. No further work is warrented on the basis of the results.

Samples were not taken in the headwaters region of Adnera Creek where 15ppmW was previously reported because no satisfactory sample material could be found in this alluvium covered area.

6. AEROMAGNETIC SURVEY

The maps provided from the airborne geophysical survey of 1979 were included in an earlier report (Snelling, 1979). The standard of presentation of the magnetic contours, and the levelling of the data, were subsequently considered to be unacceptable, and the data has been recompiled by a different processing bureau at the airborne contractor's expense. The resultant maps were used to produce a composite reduction at a scale of 1:100 000 (Plan No. NTa 318).

7. GROUND MAGNETOMETER SURVEY

A ground magnetometer survey was undertaken to improve the definition of the response in the vicinity of the outcrop anomalous in tungsten and within the broad, high magnetic zone which extends up to 1km NE of the outcrop under cover.

From a point accurately identified on the flight path recovery photographs of the earlier airborne survey, a baseline designated 5000mN was chained, pegged and permatagged at 50m intervals by backsighting on a bearing of 120° magnetic from 3800mE to 6000mE. 19.6km of traverse lines were established 200m apart by topofil distance measurement and compass with flagging every 50m and permatagged pegs at 200m intervals from 4800mN to 5800mN.

...../3.

round magnetometer measurements were taken at an interval of 10m and the data corrected for diurnal variations by repeated base station readings at regular intervals and reference to a tie line along 5000mN.

The approximate location of the grid with respect to the aeromagnetic contours is shown in Appendix 1 together profiles of the corrected magnetic data which were used to compile a magnetic contour map (Plan No. NTa 335).

The data included much "noise", presumably from very shallow sources, and a filter was applied to the profiles to assist the compilation of the contours. Even with smoothing, magnetic features cannot be reliably traced from line to line within the higher amplitude zone, and should this be required, additional lines would have to be run at closer spacings and with shorter station intervals.

Interpretation of the results using two dimensional dyke models has not been successful other than in demonstrating that the southern margin of the source is coincident with the line of outcrop between 5000mN and 5100mN.

No work to determine the nature of and map the sources of the prominent magnetic responses trending NW across the EL in alluvium covered areas has yet been carried out.

8. ACCESS

After the completion of the ground magnetometer survey, an old track running SSE from Ooralingie Bore was regraded for approximately 6km, and access to the outcrop then graded 3km to the east. Around the outcrop and over the magnetic zone to the north, the land is level and free of dense vegetation such that no further access tracks or drill site preparation would be needed for future programmes.

...../ 4.

9. REFERENCES

Fraser, W.J.	1980	EL 1878 Millionaires Well, N.T. Annual Report CRAE report 10352 (unpublished) November 1980
Snelling, A.A.	1979	EL 1878 Millionaires Well, N.T. Annual Report CRAE report 9901 (unpublished) November 1979.

10. KEYWORDS

Airborne, geophys-mag

11. LOCALITY

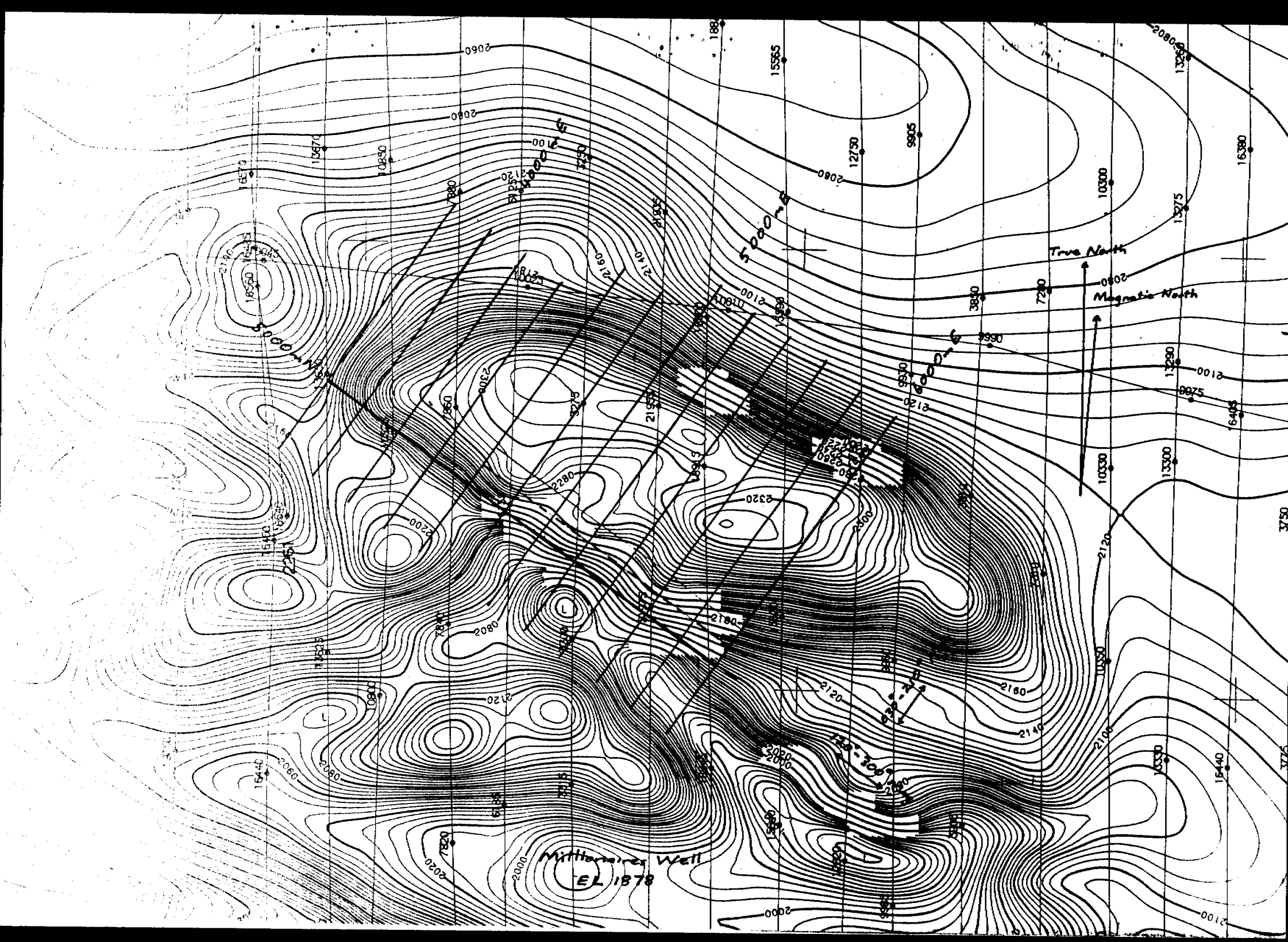
Barrow Creek SF53-6

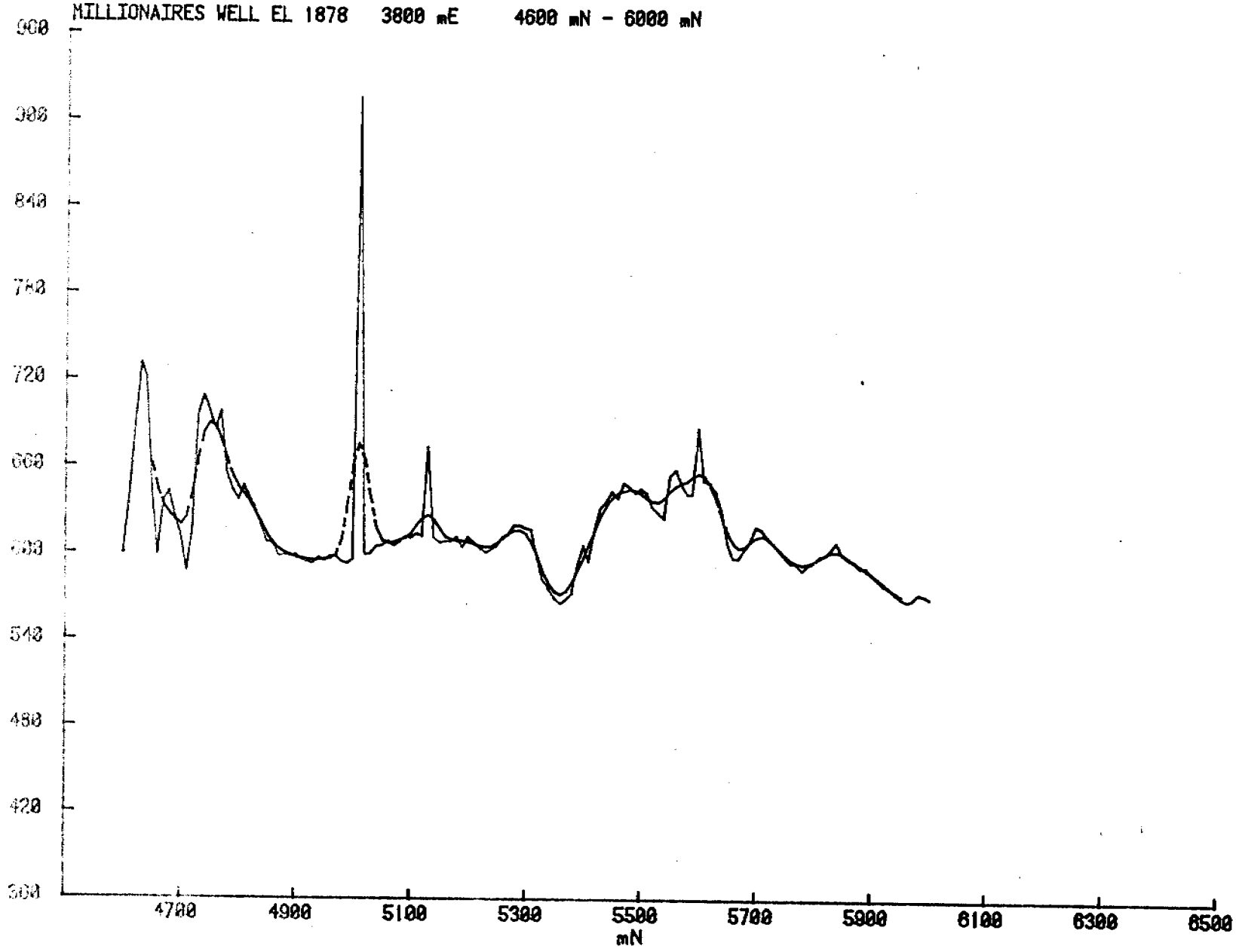
12. LIST OF PLANS

Plan No.	Title	Scale
NTd 1521	Partial relinquishment. EL 1878 Millionaires Well, NT.	1:250 000
NTa 318	Contours of Magnetic Intensity. EL1878, EL1879, EL1880	1:100 000
NTa 335	Contours of Total Magnetic Intensity Millionaires Well EL 1878.	1:10 000
NTa 418	1981 Follow-up Geochemical drainage sample locations. Millionaires Well EL 1878.	1:100 000

APPENDIX 1

GROUND MAGNETOMETER SURVEY PROFILES


True North
Magnetic North
Millionaires Well
EL 1878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900
840
780
720
660
600
540
480
420
360
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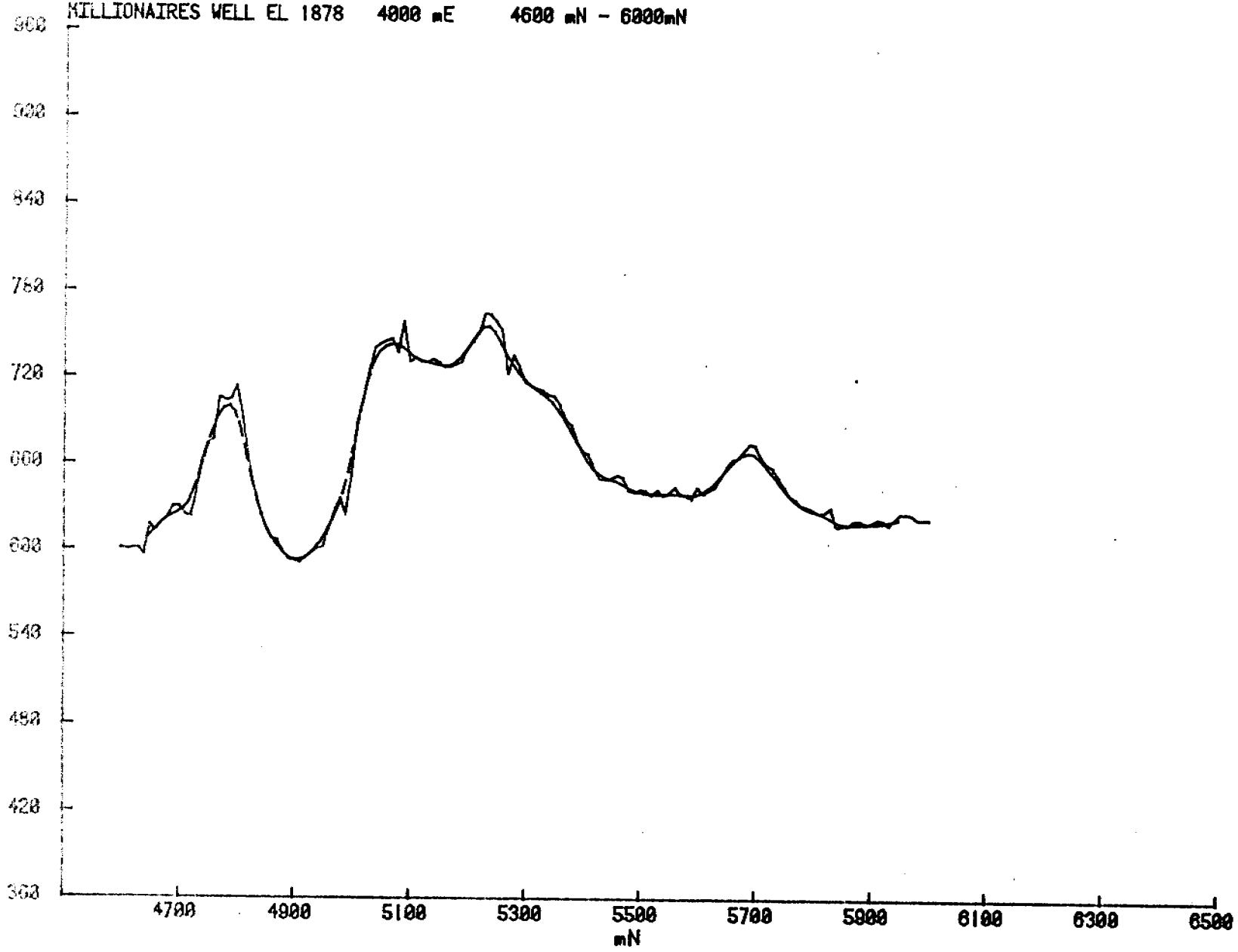
5900
6100
6300
6500
mN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840
780
720
660
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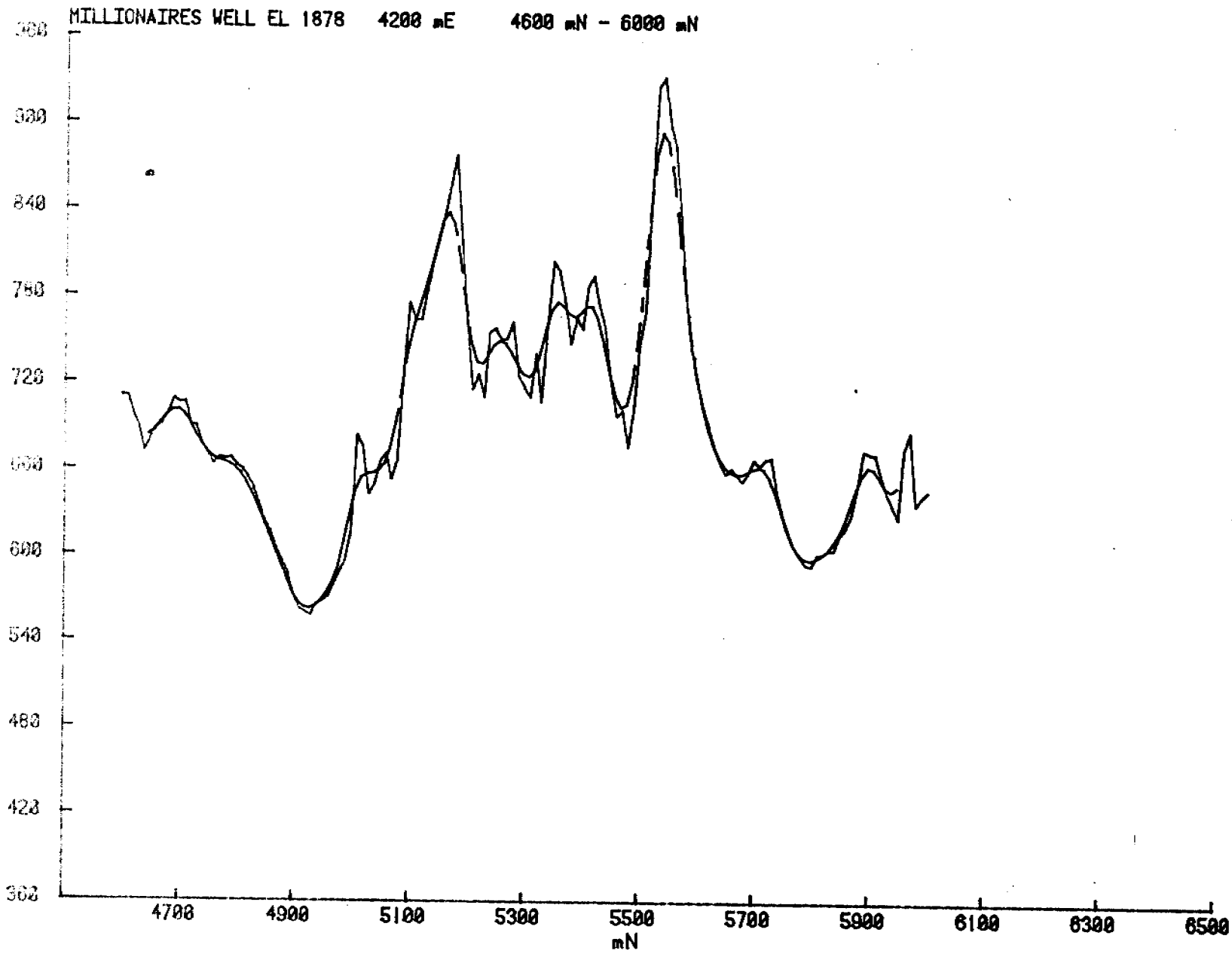
mN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780
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420
360
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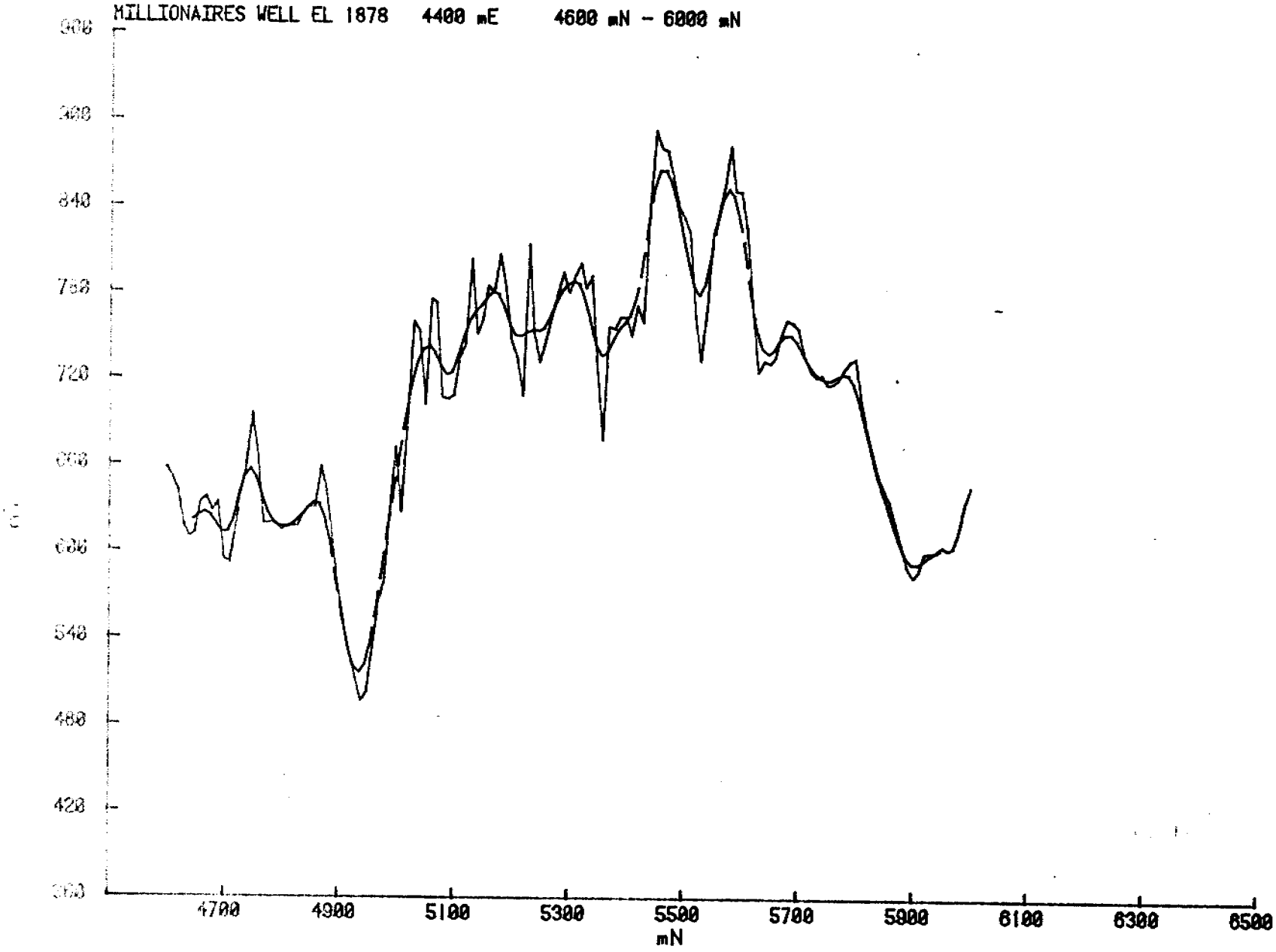
6100
6300
6500
mN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848
748
720
548
488
428
4700
4900
5100
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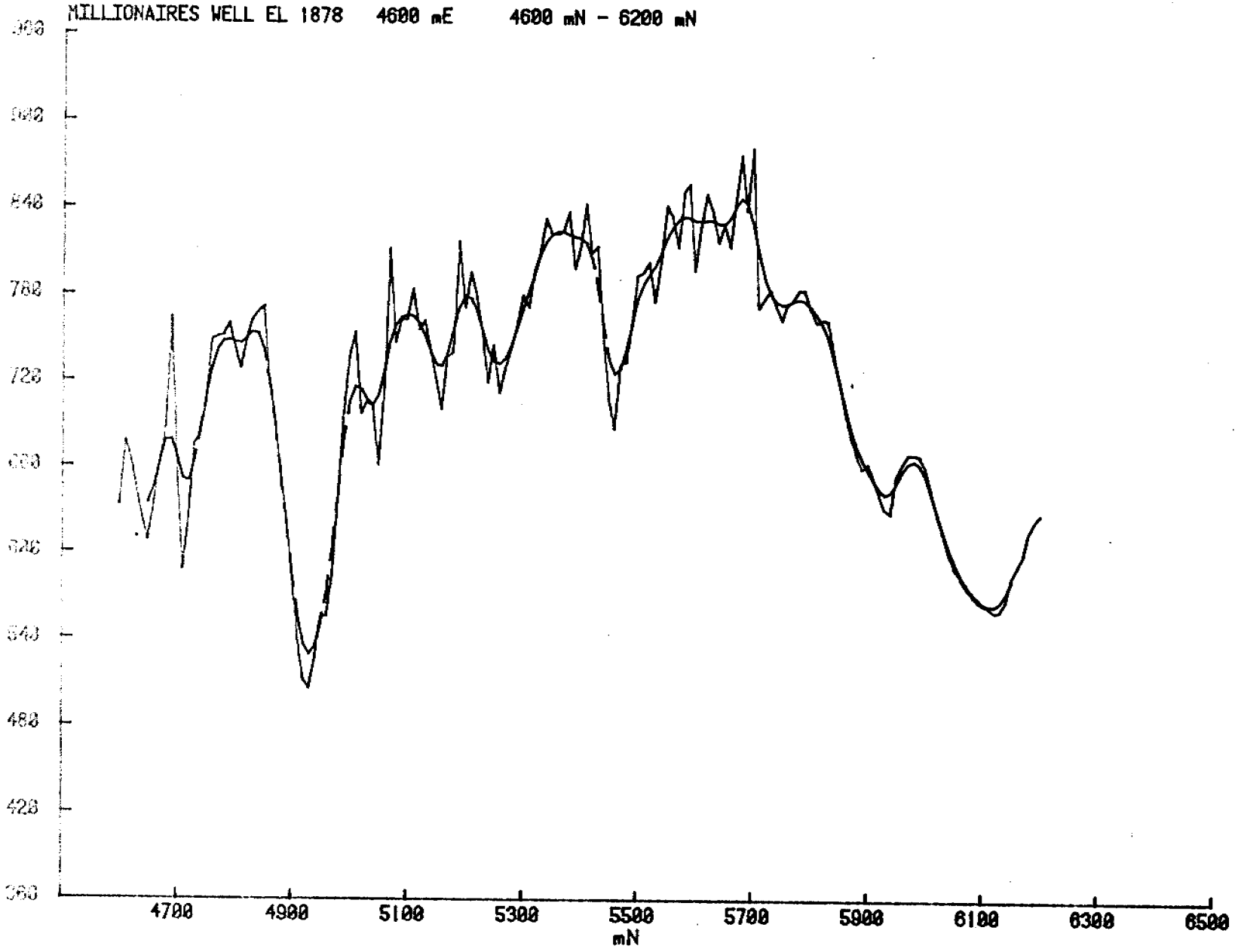
6100
6300
6500
mN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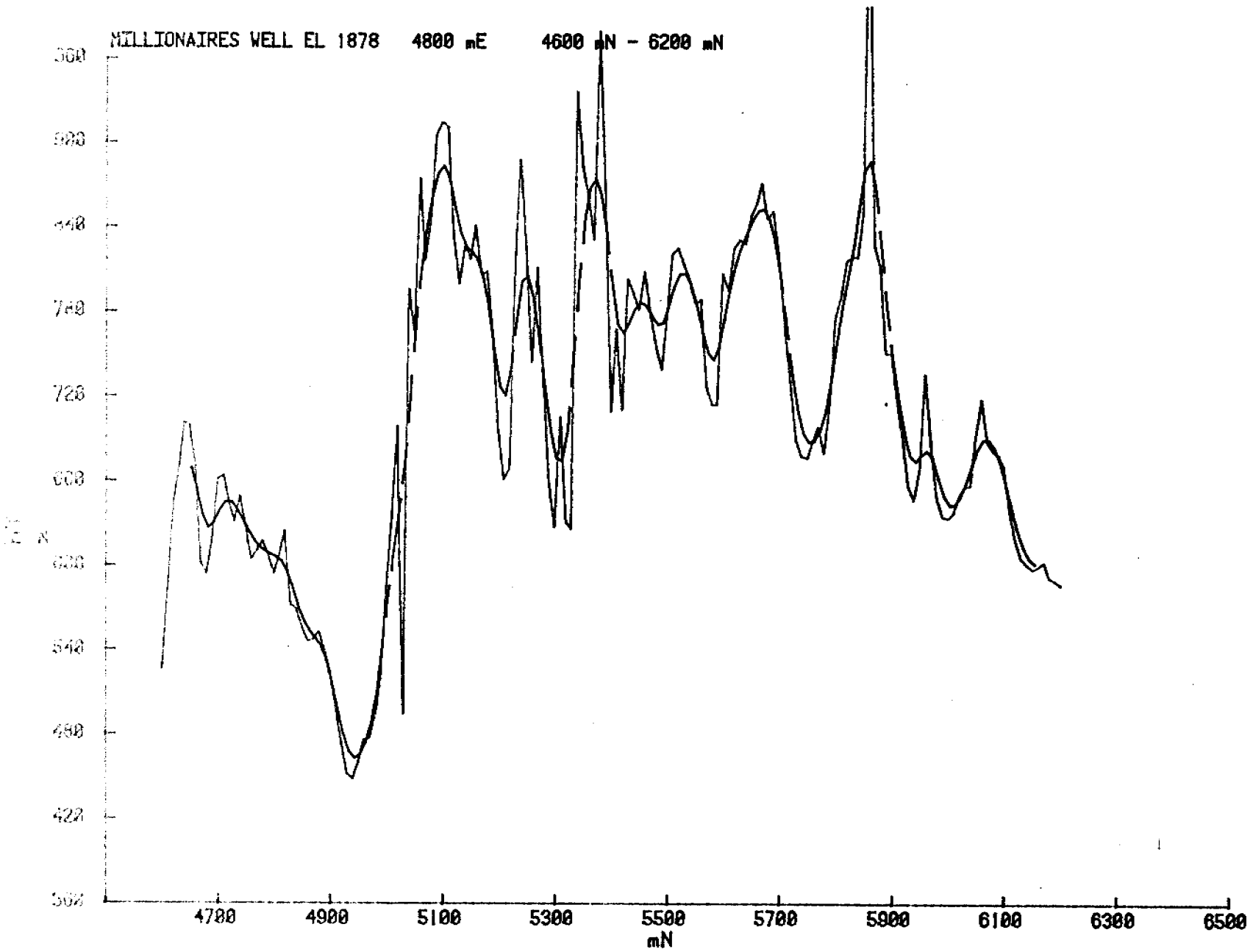
6300
6500
mN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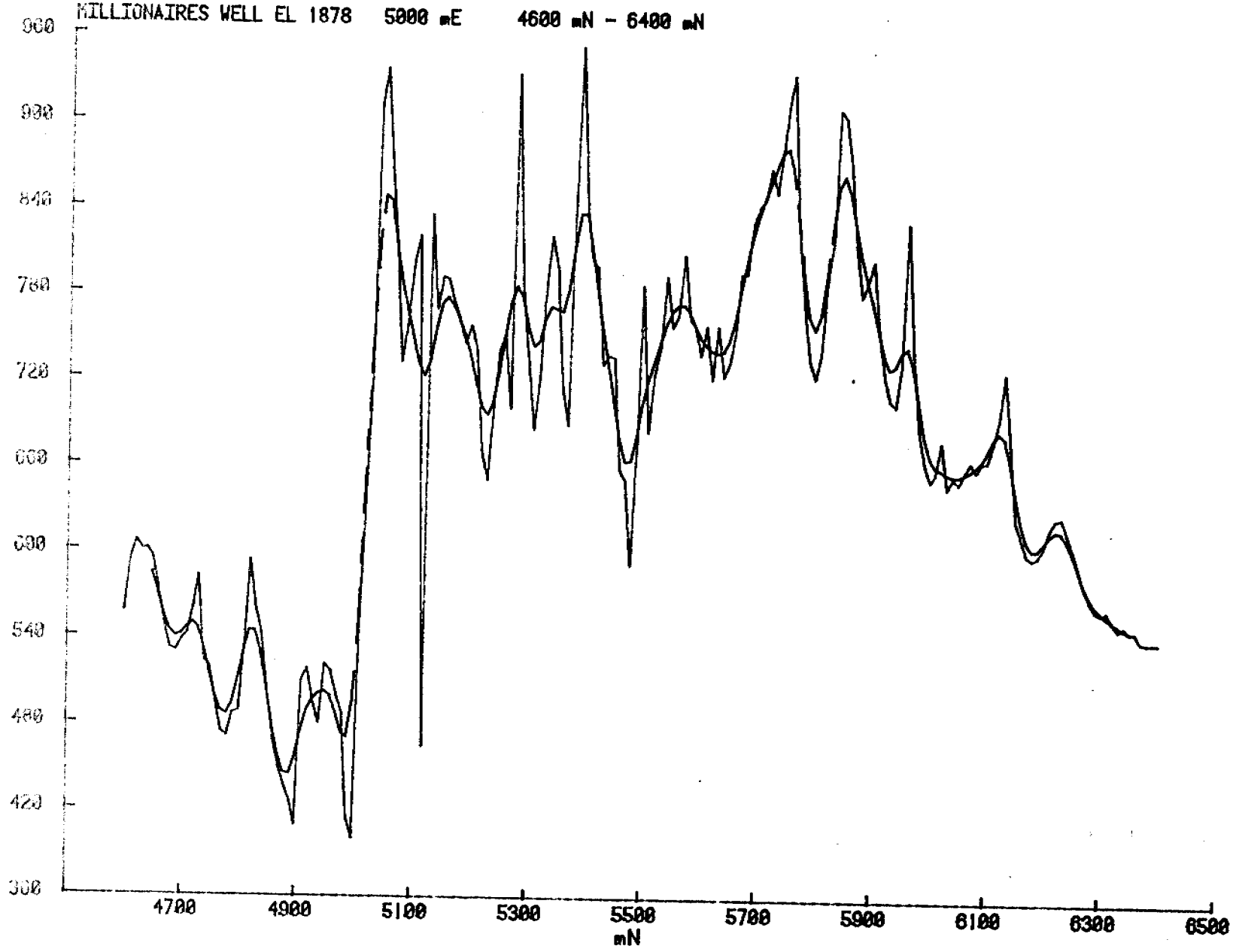
6500
mN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840
780
720
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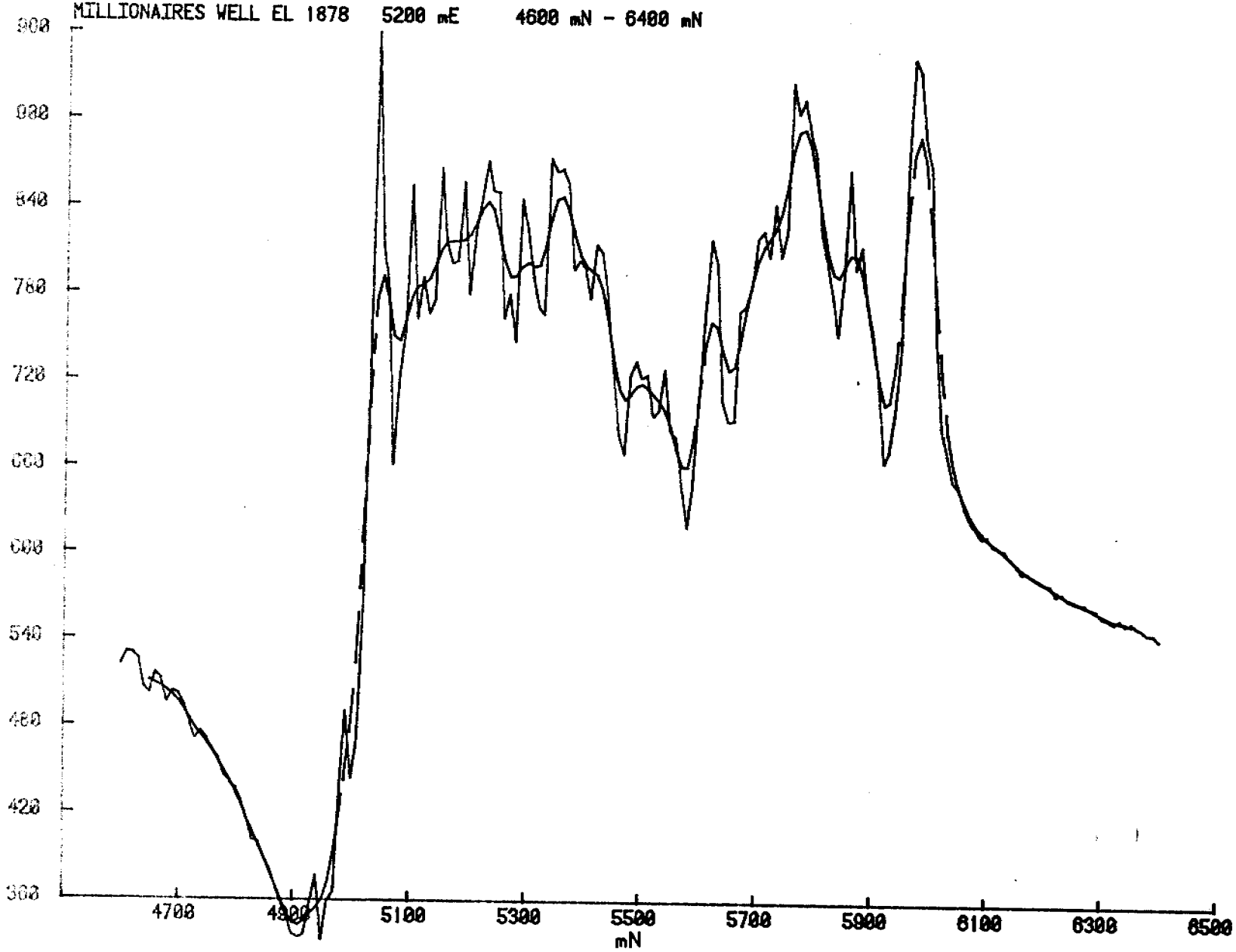
6100
6300
6500
mN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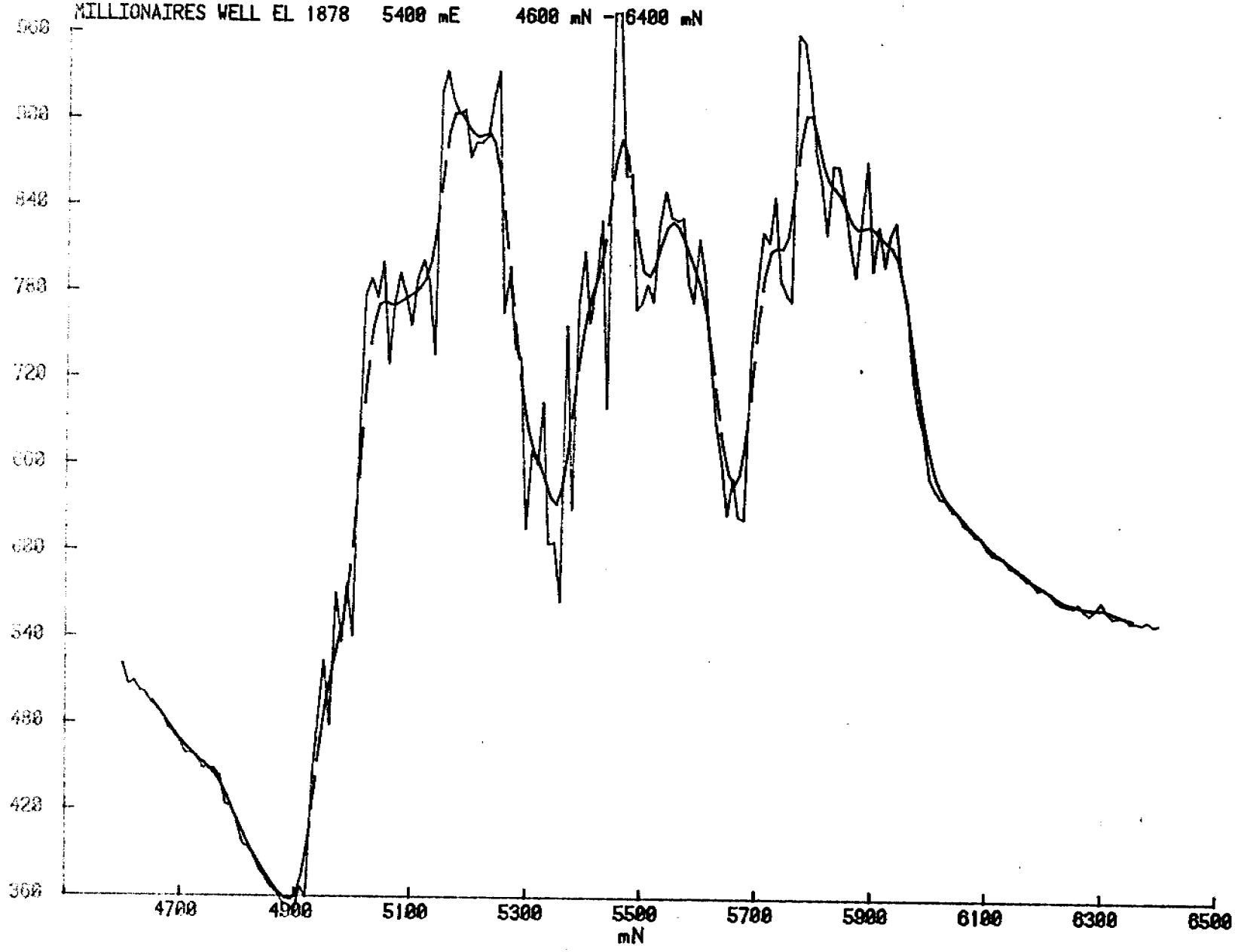
6100
6300
6500
mN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6100
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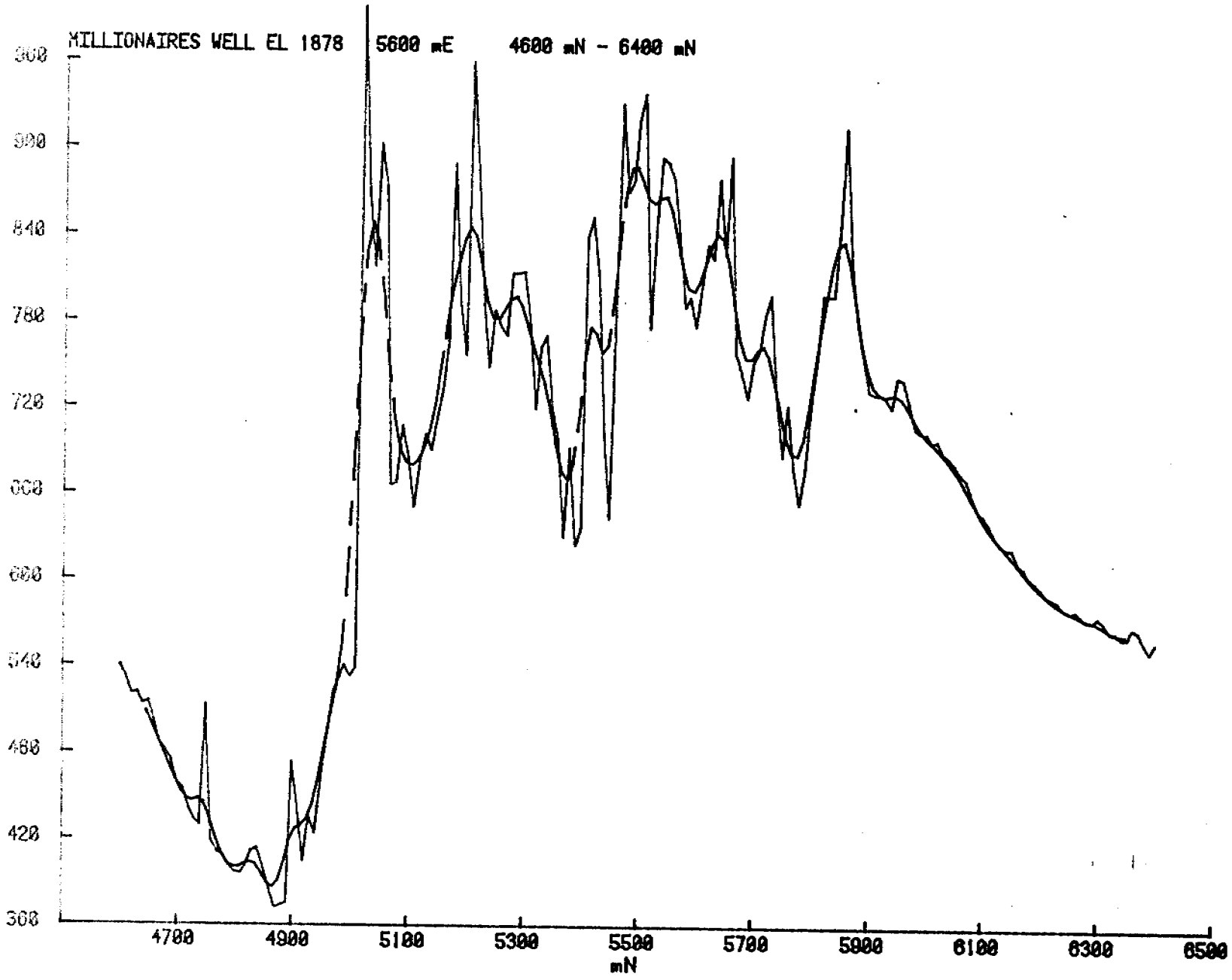
6500
mN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5600 mE
4600 mN - 6400 mN
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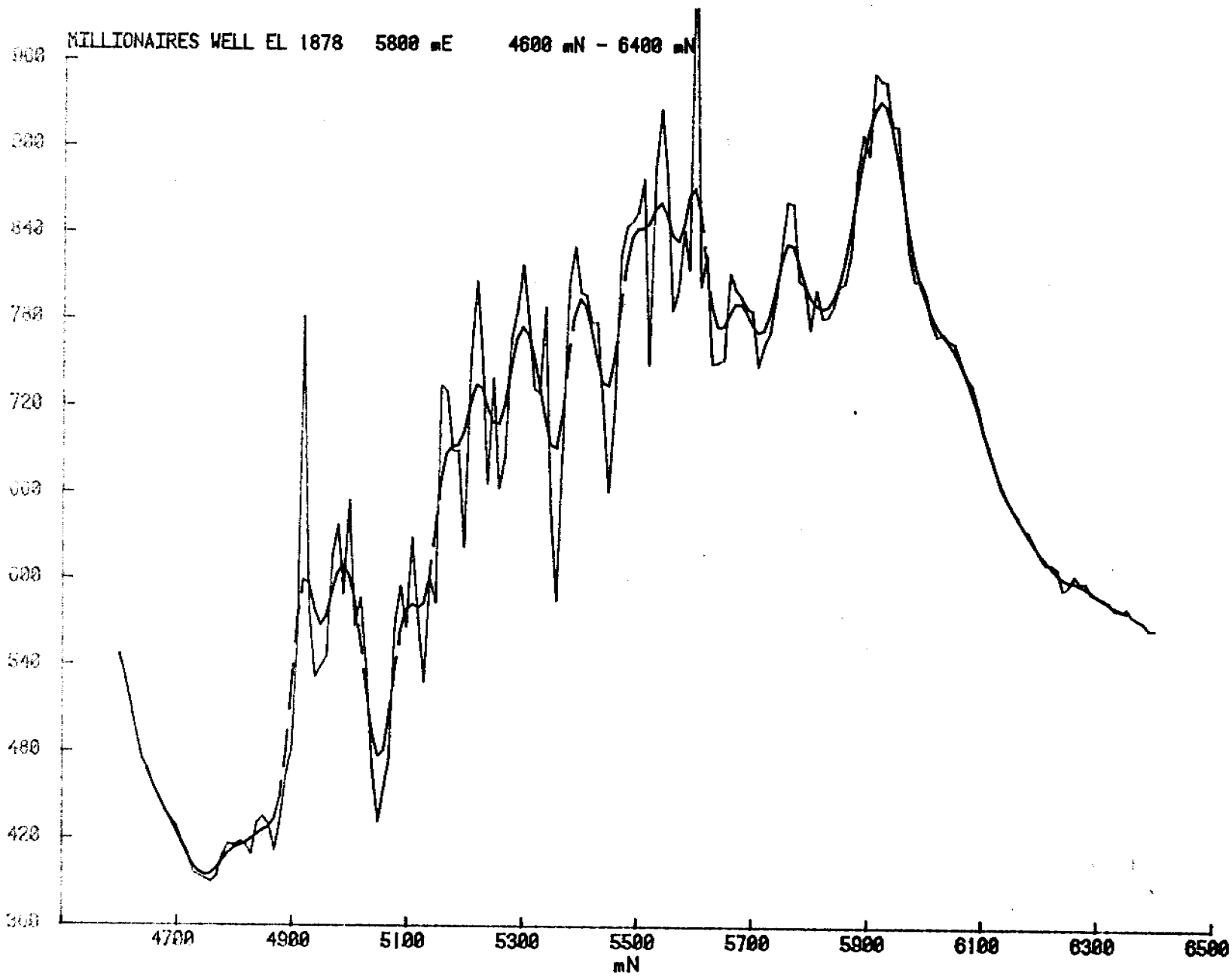
mN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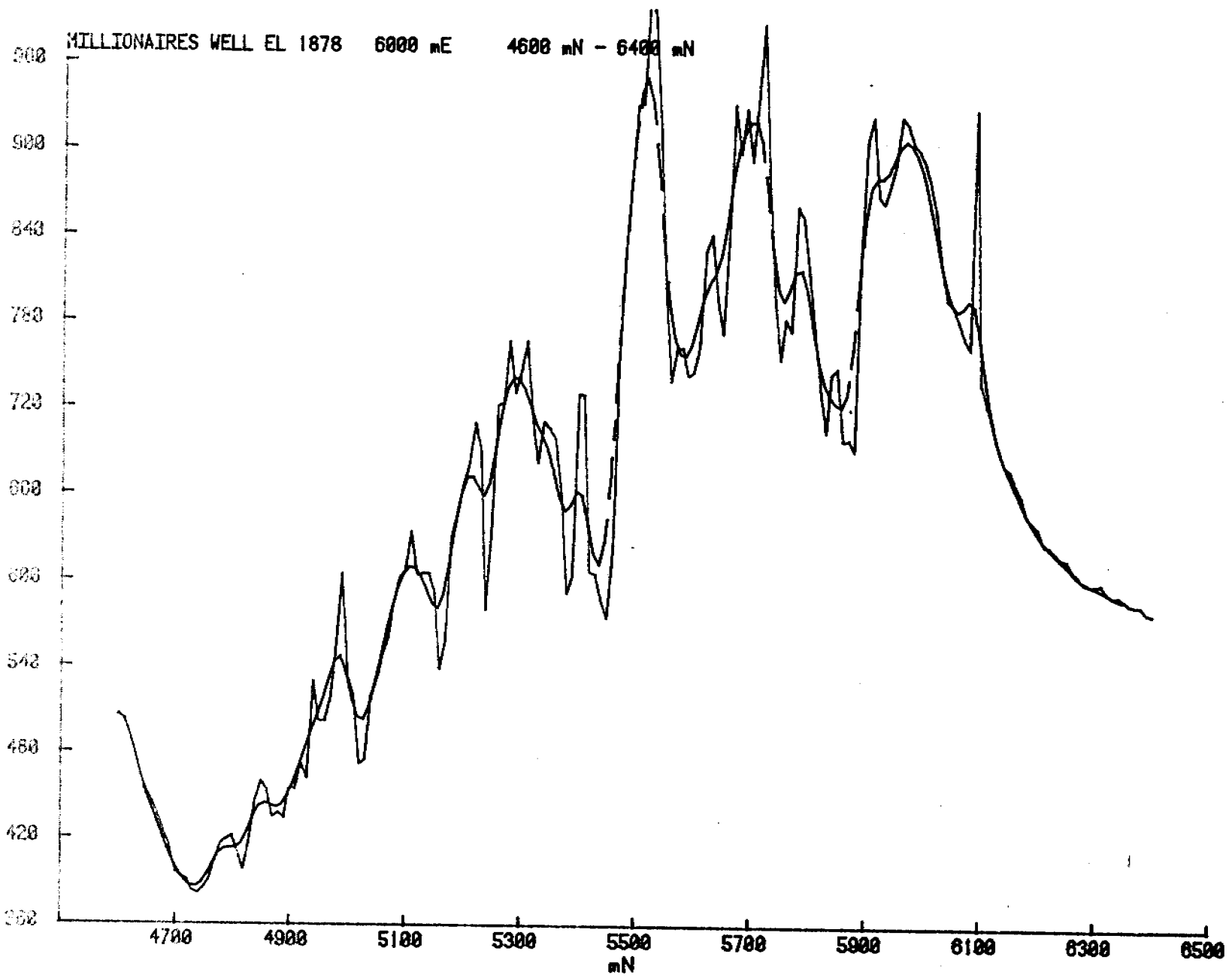
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APPENDIX 2

Geochemical Drainage Sampling Ledgers

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GEOCHEMICAL DRAINAGE SAMPLING LEDGER

No 21545 -80*
D.P.O. No. 21546 -90*
DATE 27-5-81
SAMPLE Nos. 827565 – 569
COLLECTED BY BLH, WJF
ANALYSED BY TETCHEM
SHEET No.

Borrow Creek Run 4 N° 0041 BC Run 9 Mudan 0037

Co-ords.	Number	Soil	Silt/Sand	Organic	Sample Flow	Sample Width	Pb	Zn	Cu	Ni	Co	Cr	Mo	W	Sn	As	Ag	Au	Mn	U	Th	Scinto. c.p.s	Geological Observations
					10 x 1-15	12	17	15	4	14	12	49	1	8	<4		<1	0·28	111	5	16	60	recently sandy/gravel creek float CMS gleyed to, calcareous, of sst, of grits
							6	6	6	11	6	139	2	7	<4		<1	BLD	38	<4	<4		
					Md	20 x 1·5	20	18	7	16	12	67	<1	10	<4		<1	BLD	140	5	8	65	Float: SA-SR Qtzitite (± Fe)
		rb																					Qtzitic grit.
		rb					10	10	4	14	6	133	4	11	<4		<1	BLD	52	<4	<4		Catchment appears entirely on C. Mt. Stuart Beds
		b																					
		b			Md	5 x 5	18	18	14	15	10	66	<1	10	<4		2	0·28	126	5	15	120	Float: SA-SR. Fe Qtzite.
		b																					see 827566
		b					7	18	22	13	8	80	4	4	<4		<1	BLD	150	4	5		
		b																					
		rb			Md	15 x 3	20	24	8	16	10	47	<1	8	<4		1	0·30	157	4	12	90	Float: SA-R Fe-qtzite, Calcrete,
		b																					Massive altered qtz-felds basalt porphyritic
		b					10	20	13	15	10	132	4	7	4		<1	BLD	100	4	7		matrix rock with semi schist inclusions.
		b																					Outcrop: As above, 120 cps
		rb				5 x 2	17	15	4	16	11	63	<1	8	17		<1	0·35	107	4	13	70	Float: None, grid qtz, lithics.
		rb																					No outcrop. Incised alluvial fan.
		rb					11	10	8	12	7	159	3	13	<4		<1	BLD	47	<4	<4		Catchment (?) entirely on C.M.S Beds.
		b																					

Printer.

21546 -40#

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL DRAINAGE SAMPLING LEDGER

D.P.O. No. 21545 -80#

DATE

SHEET No.

PROJECT [illegible] REC

[illegible] Well

SAMPLE Nos. 827570

COLLECTED BY BEH

MAP OR PHOTO REFERENCE Barrow Ck. Run 8 Photo 0287

ANALYSED BY TEICHEM

A.M.G. Grid Co-ords.	Sample Number	Sediment				Sample		Metal Content, p.p.m.																		Scinto.	Geological Observations
		[illegible]	Sand	Silt/Mud	Organic	Flow	Width	Pb	Zn	Cu	Ni	Co	Cr	Mo	W	Sn	As	Ag	Au	Mn				U	Th	c.p.s	
[illegible]	[illegible]	[illegible]	35	5	b	Md -Hi	1 x 2	17	17	4	19	10	102	<1	16	<4		<1	0-12	111				5	8	70	Float: S.R. Fe(+) qtzite
	[illegible]				rb																						No o/c. Deeply incised stream
	[illegible]				rb			12	8	5	12	6	132	3	9	<4		<1	BLD	40				<4	<4		in alluvial fan/plain.
	[illegible]				b																						
[illegible]	[illegible]	[illegible]	35	5	pb	Md	8-15	20	23	10	20	11	109	<1	12	<4		<1	BLD	99				4	10	50	Float of Central Mt Stuart flaggy
	[illegible]				b																						quartz sandstones.
	[illegible]				h			8	7	5	14	6	139	3	15	<4		<1	BLD	37				<4	<4		
	[illegible]				wb																						

Printer.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL DRAINAGE SAMPLING LEDGER

Panned Concentrates from GRAVEL SAMPLES

SAMPLE Nos. _____

D.P.O. No. 21547

DATE 27-5-81

COLLECTED BY W.J.F., BEH

ANALYSED BY TEICHEM

SHEET No. _____

PROJECT [illegible] REC

[illegible] well

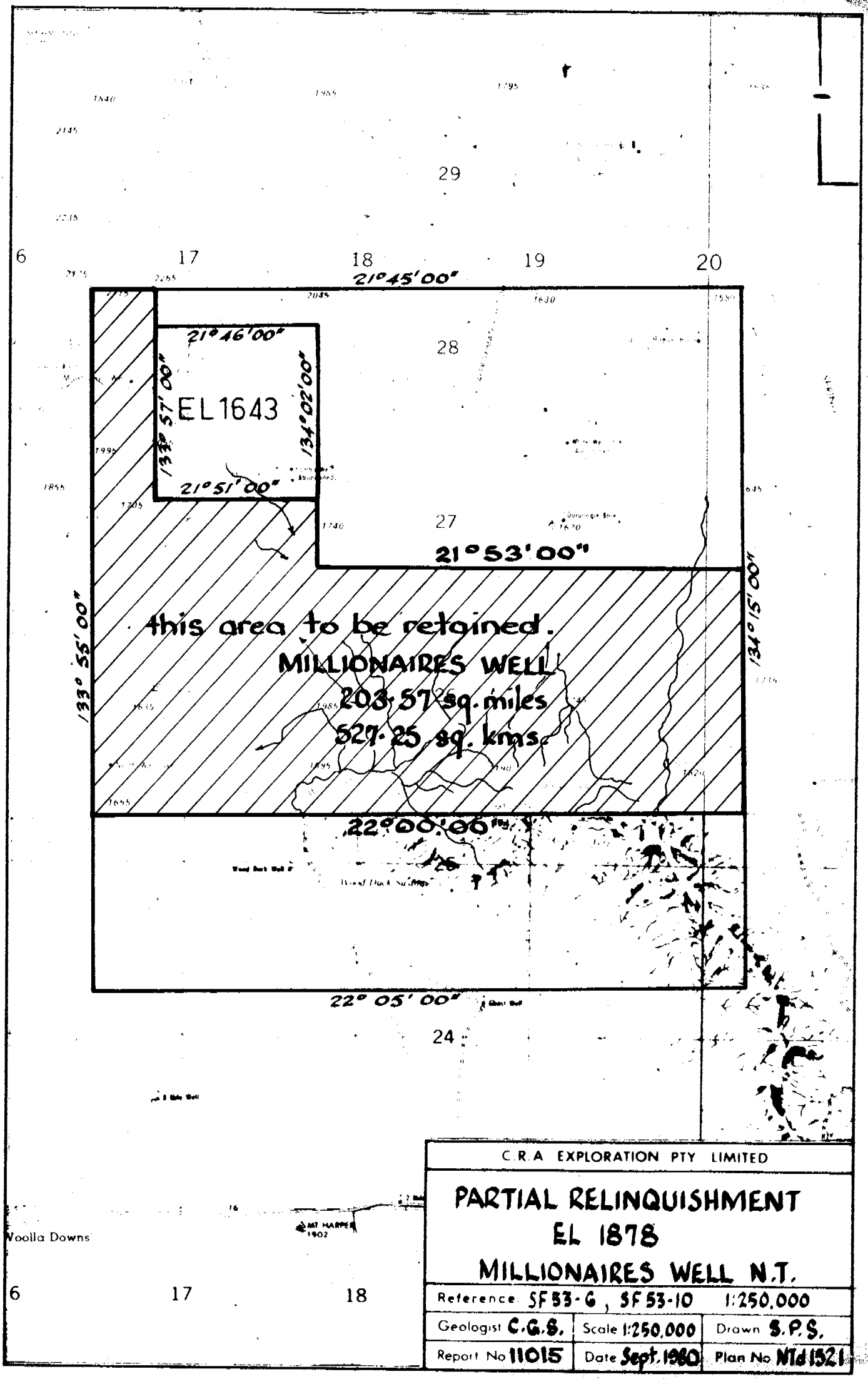
MAP OR PHOTO REFERENCE Burrow Ck. Run 9 Photo 0041 Run 9/0037 R8/287

Sample Number	Sample Flow	Sample Width	Pb	Zn	Cu	Ni	Co	Cr	Mo	W	Sn	As	Ag	Au	Mn	Ta	Nb		U	Th	Scinto. c.p.s	Geological Observations
[illegible]	10 x 1.5	12								18	59			BLD		4	6				60	Meandering Ck; dug into boulder-gravel train of mod-low compacted flaggy-subrounded CMS qtzite, arkose qtz ssl, grits
[illegible]	Md	15 x 3								11	20			BLD		<4	23					
[illegible]	Md	5 x 2								16	141			BLD		<4	5				70	U. poor site, Dry loam type sample scraped in incised channel within alluvial fan/plain
[illegible]	Md Hi	1 x 2								18	45			BLD		<4	10				70	U. poor site Dry loam scrape sample. Deeply incised channel in alluvial fan/plain.

⇒ Good trap site, Backwash pot hole in rock ⊥ across stream. Stream catchment in Arunta 1km upstream.

(Probably from older gravels)

Printer.



C.R.A EXPLORATION PTY LIMITED

PARTIAL RELINQUISHMENT
EL 1878
MILLIONAIRES WELL N.T.

Reference SF 53-G, SF 53-10		1:250,000
Geologist C.G.S.	Scale 1:250,000	Drawn S.P.S.
Report No 11015	Date Sept. 1980	Plan No NTd 1521

133°45'E

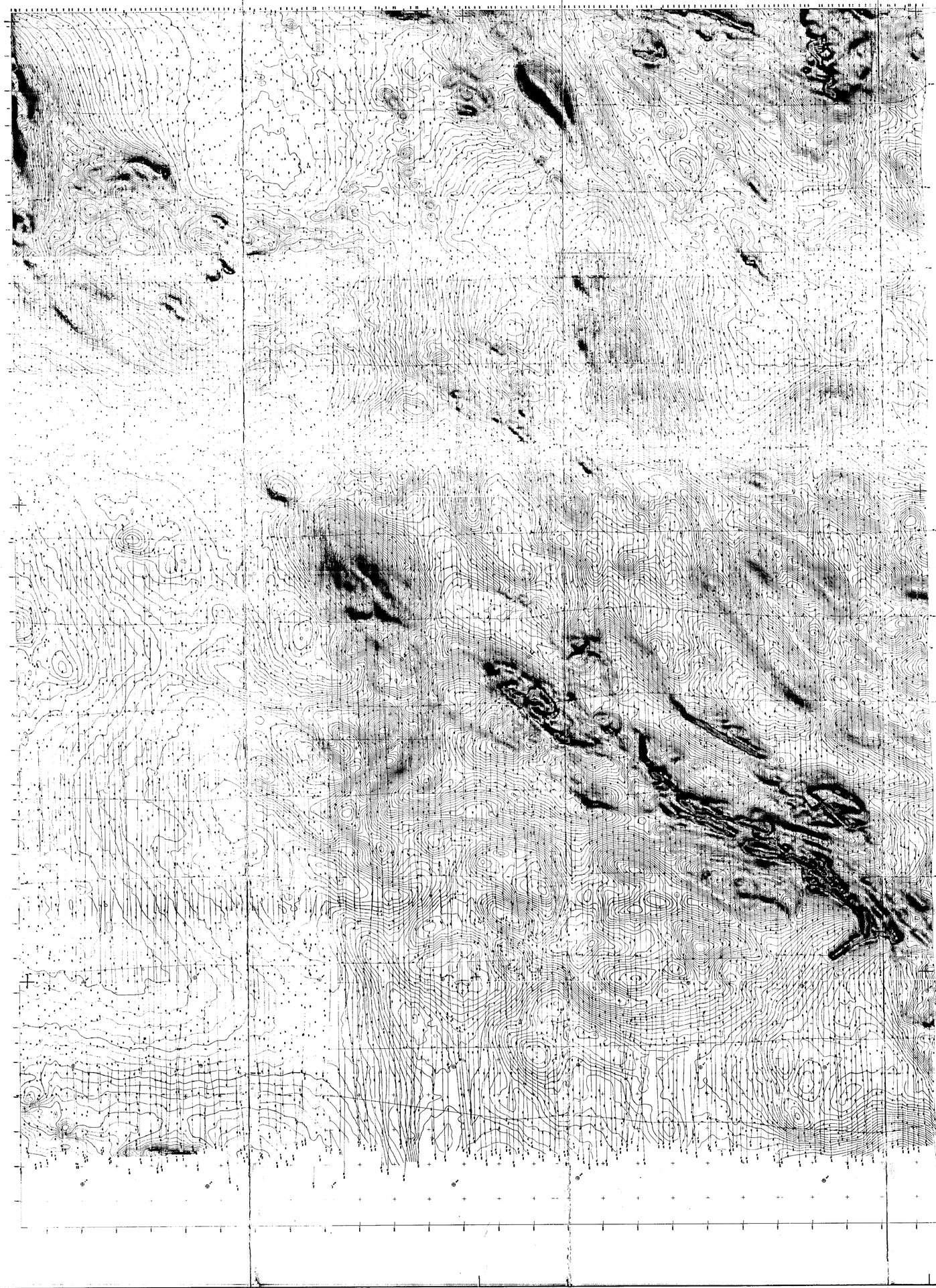
134°00'E

134°15'E

21°30'S

21°45'S

22°00'S



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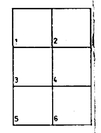
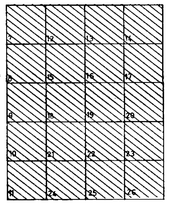




AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER :	GEOMETRICS G-803 PROTON PRECESSION
SENSITIVITY :	0.5 NT
SAMPLE INTERVAL :	0.8 SEC
FLIGHT LINE DIRECTION :	N - S
FLIGHT LINE SEPARATION :	300 METRES
MEAN TERRAIN CLEARANCE :	80 METRES
ALONG LINE SAMPLING :	50 METRES

PROCESSING SPECIFICATIONS

IGRF : REMOVED , DATUM 2000 nT ADDED
GRID MESH : 100m by 100m
CONTOUR INTERVALS : 5.20.100.500.1000 nT
HORIZONTAL SCALE 1 : 20000
SHEET 7
GRID NOTATION REFERS TO AUSTRALIAN METRIC GRID

Scale 1:100,000

2 0 2 4 6 8 10 12 Kilometres

FLOWN BY GEOTERREX PTY LTD
JOB NO : 87-207 FLOWN : NOV 1978
COMPILED BY ENGINEERING COMPUTER SERVICES PTY LTD

CRA EXPLORATION PTY. LTD.

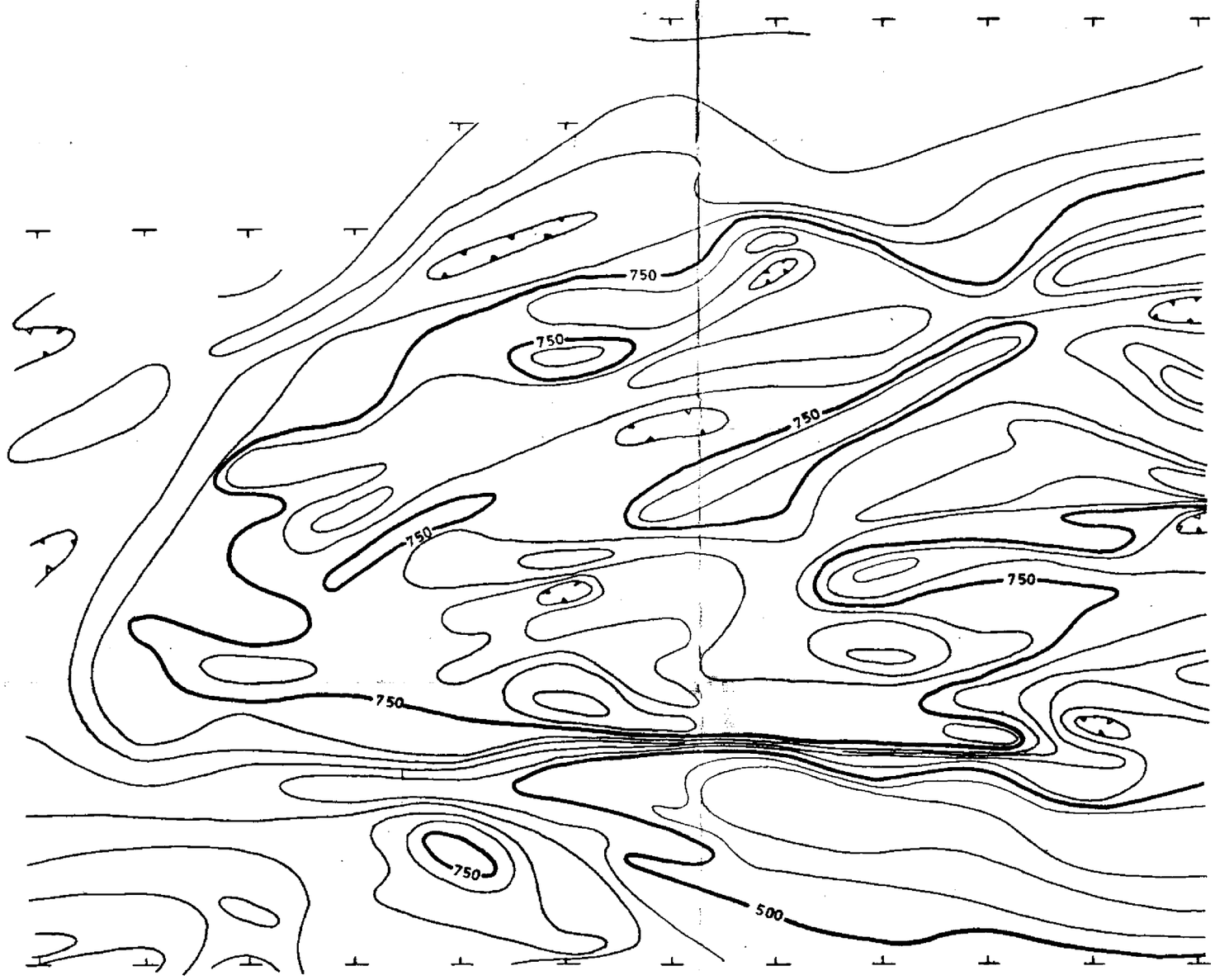
BARROW CREEK SF 53-6 ALCOOTA SF 53-10

CONTOURS OF MAGNETIC INTENSITY

MILLIONAIRES WELL EL 1878
DONKEY CREEK EL 1879
FORSTER RANGE EL 1880

DATE: APRIL 1981 Scale 1:100,000 | PLAN NO. NTa 318 | REPORT NO. 11015

CR82/064



0 500

Metres

Contour Interval = 50nT

NOTES

5000 mE is approx AMG 416820 mE
5000 mN 7576680 mN

Levelling was by a tie line run along 5000 mN

A constant of 52000 has been removed from the contour values shown

Magnetometer sensor height was 3.0m and the station spacing was 10m

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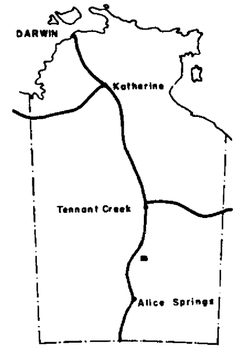
CONTOURS OF TOTAL MAGNETIC INTENSITY

MILLIONAIRES WELL EL 1878

Reference BARROW CREEK SF 53 6		
Geologist GPJ	Scale 1-10000	Report No. 11015
Drawn BKB	Date JUNE 1981	Plan No. NTa 335

CR82/064



21°45'

Millionaires Well

Spring Range Bore

827562

MT. TOPS
2322

827569

827570

Ooralingie Bore

133° 55'

134° 15'

827565

827568

827566 & 827567

Wood Duck Creek

Adnera Creek

22°05'

Sample No	Mesh	Pb	Zn	Cu	Ni	Co	Cr	Mo	W	Sn	Ag	Au	Mn	U	Th
827562	-80	20	23	10	20	11	109	<1	12	<4	<1	BLD	99	4	10
	-40	8	7	5	14	6	139	3	15	<4	<1	BLD	37	<4	<4
827565	-80	17	15	4	14	12	49	1	8	<4	<1	0.28	111	5	16
	-40	6	6	6	11	6	139	2	7	<4	<1	BLD	38	<4	<4
827566	-80	20	18	7	16	12	67	<1	10	<4	<1	BLD	140	5	8
	-40	10	10	4	14	6	133	4	11	<4	<1	BLD	52	<4	<4
827567	-80	18	18	14	15	10	66	<1	10	<4	2	0.28	126	5	15
	-40	7	18	22	13	8	80	4	4	<4	<1	BLD	150	4	5
827568	-80	20	24	8	16	10	47	<1	8	<4	1	0.30	157	4	12
	-40	10	20	13	15	10	132	4	7	<4	<1	BLD	100	4	7
827569	-80	17	15	4	16	11	63	<1	8	17	<1	0.35	107	4	13
	-40	11	10	8	12	7	159	3	13	<4	<1	BLD	47	<4	<4
827570	-80	17	17	4	19	10	102	<1	16	<4	<1	0.12	111	5	8
	-40	12	8	5	12	6	132	3	9	<4	<1	BLD	40	<4	<4

C.R.A. EXPLORATION PTY LIMITED

MILLIONAIRES WELL EL 1878

1981 FOLLOWUP GEOCHEMICAL
DRAINAGE SAMPLE LOCATIONS

Reference SF 53 - 6 Barrow Creek		
Geologist G.P.J.	Scale 1:100,000	Report No 11015
Drawn JFC	Date DEC. 1981	Plan No NTa 418

CR82/064