CRA Exploration Pty Limited

CHILDER CREEK EL 3265, NT

McArthur Basin

FINAL REPORT

Submitted by : G. P. Jenke

Accepted by : W. H. Johnston

Date : December, 1983

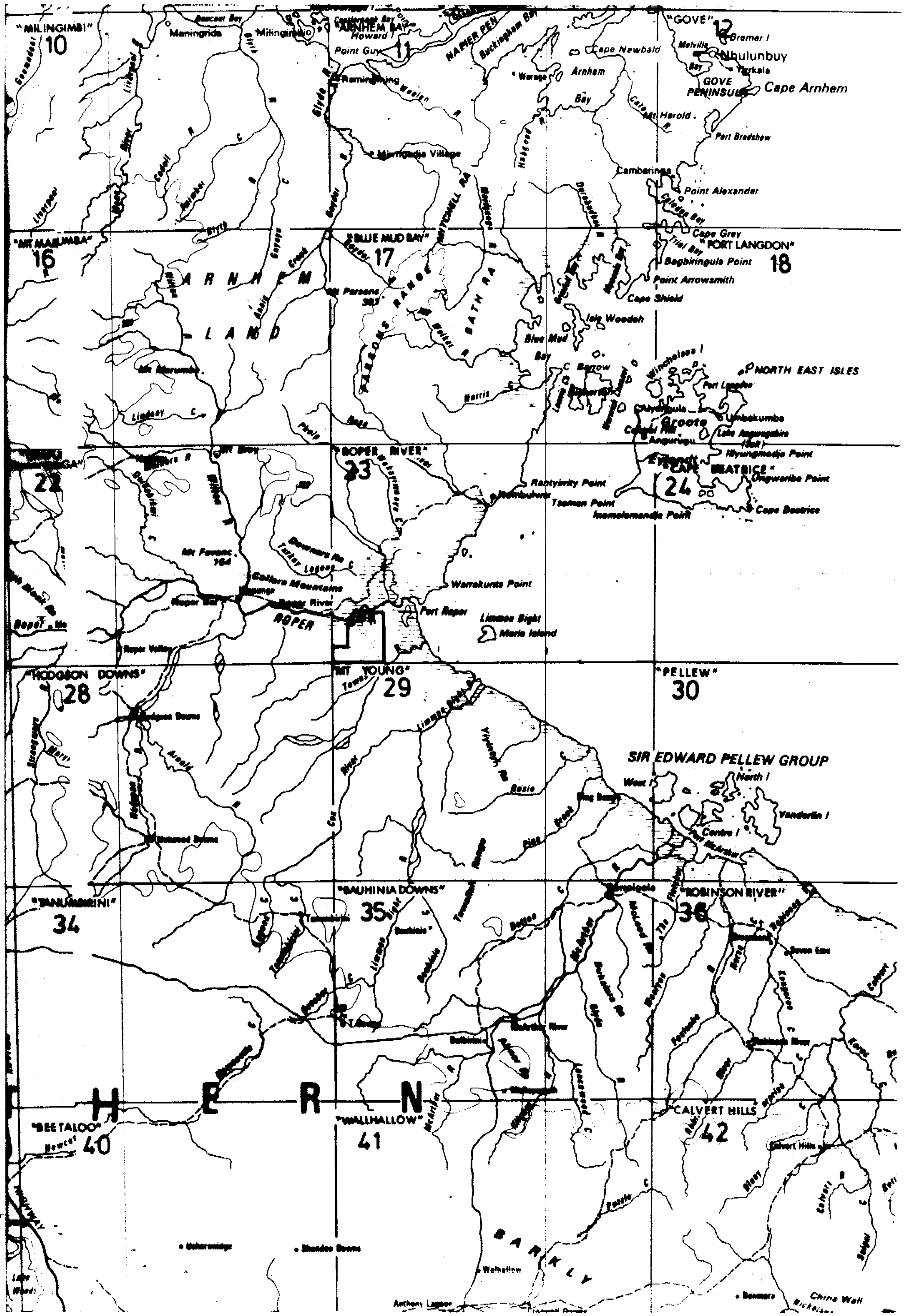
Copy to : CRAE Library, Canberra

N. T. Department of Mines and Energy

Map reference
Roper River SD 53-11
Roper 5968

Report number
130415

CONTENTS


"MILINGIMBI"
10
Maningrida
Milingimbi
"ARNHEM BAY"
Howard I
Point Guy
11
NAPIER PEN
Buckingham Bay
"GOVE"
12
Bremer I
Nhulunbuy
Yirrkala
GOVE
Cape Arnhem
Cape Newbald
Arnhem
Bay
Ramingining
Mt Harold
Port Bradshaw
MITCHELL RA
Point Alexander
Cape Grey
"PORT LANGDON"
18
Bagbiringula Point
Point Arrowsmith
Cape Shield
Isle Woodah
Blue Mud
Bay
NORTH EAST ISLES
"BLUE MUD BAY"
17
Mt Parsons
PARSONS RANGE
BATH RA
"MT MARUMBA"
16
A R N H E M
L A N D
Lindsay C
Groote
Umbakumba
Angurugu
"ROPER RIVER"
23
22
Rantyirrity Point
Numbulwar
CAPE BEATRICE
24
Cape Beatrice
Mt Favenc
164
Roper Bar
Roper River
ROPER
Port Roper
Limmen Bight
Maria Island
Warrakunta Point
"HODGSON DOWNS"
28
"MT YOUNG"
29
"PELLEW"
30
SIR EDWARD PELLEW GROUP
North I
Vanderlin I
West I
Centre I
"TANUMBIRINI"
34
"BAUHINIA DOWNS"
35
"ROBINSON RIVER"
36
Borroloola
Seven Emu
H E R N
"BEETALOO"
40
"WALLHALLOW"
41
CALVERT HILLS
42
B A R K L Y
Wallhallow
Anthony Lagoon
China Wall

1.0 Summary

Detailed gravity traverses were carried out along roads and cleared lines over a gravity response outlined by the helicopter supported reconnaissance gravity survey and the reconnaissance road traverses completed in the first year of tenure.

2.0 Conclusions

The detailed gravity surveying did not confirm the local high outlined by the 1982 reconnaissance survey, or indicate any other features of interest.

The stream gravel sampling programme in 1982 did not indicate the presence of kimberlite within the EL.

3.0 Introduction

Within the area of the Exploration Licence, geological units are flat-lying and outcrop is very poor (Dunn, 1963). As a consequence, very little is known about the stratigraphy beneath the cover of Cainozoic soils and sands.

Outcrop of the Kookaburra Creek Fm of the McArthur Group and the Limmen Sandstone, the basal member of the Roper Group, occurs along the western border of the EL. The regional gravity data published by the BMR indicates a major high in this area, and it was postulated that a basin containing substantial thicknesses of McArthur Group rocks or their equivalents might be present (Jenke,1983). There has not been any previous drilling in the area.

To define areas where the sedimentary sequence may be thickest or where black shale and/or dolomite units may be best developed, a semi-regional reconnaissance gravity survey was carried out as the first stage of exploration. The results suggested the presence of a local high straddling the road to Port Roper. A detailed, optically levelled survey was then carried out along both this road and cleared lines to better define the extent, magnitude and character of the response.

4.0 Title

An application for an Exploration Licence for an area of 545.6 square km was lodged on 18.8.81 and granted for a period of

twelve months from 20/4/82. Upon the renewal of the licence for the second year, the northern boundary was modified and the area reduced to 512.585 square km (Plan NTd 2074)

5.0 Gravity Surveys

The individual gravity surveys completed are described below. The locations of the road and line traverses, and the helicopter and BMR stations, are shown on Plan No NTd 3285.

The Bouguer values listed in the appendices were calculated by applying a latitude correction of 0.4094 milligals per km north-south from 500000mE 8320000mN assuming AMG north was true north, and an elevation correction of 0.1968 milligals per metre which corresponds to a Bouguer density of 2.67.

The residual Bouguer contour map (Plan No NTd 3286) was compiled from the IGSN71 formula

$$g(\phi)=9.7803180(1 + 0.0053024 \sin^2\phi - 0.0000058 \sin^2 2\phi) \text{ ms}^{-2}$$

and a Bouguer correction for a density of 2.67. These values are therefore different from those listed in the appendices, but the relative differences between stations will be the same.

To obtain the correct observed gravity values, 978300 milligals should be added to the values quoted in the appendices.

5.1 Helicopter Supported Survey

During the first year of tenure, a helicopter was used to carry out a gravity survey on a 4km by 2km grid over this EL and Towns River EL 3264 to the immediate south. Elevation control was by means of barometers and 1968 1:82 000 photography was used for navigation.

All elevation and gravity values are relative to a base station designated as 0.001 at AMG 522325 mE 8336546 mN near the Towns River crossing to the south of the EL. Its gravity value was established as 978 390.36 milligals by a tie to BMR gravity station 7811.1166 near Caranbirini Waterhole in the McArthur River area, and its elevation with respect to the Australian Height Datum was established as 3.050m by optical levelling to bench mark NMVG238.

The station numbers for this survey are of the form 0.xxx and the results are tabulated in Appendix 1.

5.2 Reconnaissance Road Traverses

Again using barometers for elevation control, gravity stations were read at 1km intervals along the roads within the EL. These results are contained in Appendix 2, the station numbers being of the form 1.xxx

5.3 Detailed Road Traverses

Optical levelling was used for elevation control in a survey along the road to Port Roper from a height datum (NMVG238) at its intersection with the Nathan River road at AMG 500900 mE 8354100 mN (approx) for 19 km to the east (Line 07) and also from this intersection to the SE along the track to Nathan River to the southern border of the EL (Line 06). Stations were read every 100m and short, permatagged steel pegs were placed every kilometre as permanent elevation references. The values established for them are tabulated in Appendix 5.

Along Line 06, a peg on the north bank of the Towns River was designated 100 km and pegs were marked with distance increasing to the NW. Station numbers are of the form 6.xxxxx, where the first five decimal digits of the number are the station's distance in metres from the 100 km peg.

For Line 07, a peg adjacent to NMVG238 was designated 0 km and pegs were marked with increasing distances to the east towards Port Roper. Station numbers are of the form 7.xxxxx, where the first five decimal digits of the number are the station's distance in metres from NMVG238. Line 130 continues along this road with its first station, 130.05000 being coincident with station 110.05000 on Line 110 and approximately 100m east along the road from 7.19000.

Elevations were tied to the Australian Height Datum at NMVG238 (21.842m). A gravity base station at the benchmark was designated 0.238 and its observed value was established as 978393.753 milligals by a tie to 0.001.

The optical levelling from NMVG238 (7.00000) to 7.11000 contains a misclose of 408mm which was distributed. All other miscloses were minimal.

1:80 000 colour aerial photography was flown over the area of the EL in April, 1983. Control information was purchased from the Department of National Mapping and used to photogrammetrically establish AMG coordinates for several points along each traverse. By digitizing these points and the roads on enlargements of this photography, it was possible to calculate AMG coordinates for each gravity station by interpolation.

A tabulation and profiles of the results of these detailed road traverses are contained in Appendix 3.

5.4 Detailed Line Traverses

Early in 1983, a D-6 bulldozer was used to clear three north-south lines across the area of the response indicated by the reconnaissance gravity surveys. Each was at a bearing of 355 degrees magnetic which is approximately AMG north, and stations were chained and marked by permatagged pegs at 100m intervals along them. Short permatagged steel pegs were placed at 1000m intervals as permanent elevation references (see Appendix 5)

AMG coordinates of stations along these lines were calculated by interpolation between photogrammetrically determined control points along and at the ends of the lines.

Station numbers are of the form LLL.xxxxx where LLL is the line number and xxxxx is the station's northing or easting along the line in metres.

The results of these lines are presented as tabulations and profiles in Appendix 4.

6.0 Gravity Survey Procedure

The survey procedure adopted was to begin a day's work with a reading at a base station, take readings sequentially throughout the day and then reoccupy stations which were initially read at time increments of about an hour immediately before returning to the base station. Corrections for tidal effects were then applied to all the data. A linear correction to remove the difference between the base station readings at the start and end of the day was finally applied. The differences between the values of the repeated traverse stations then indicated the effect of any meter tares or non-linear drift effects.

Gravity stations with prefixes 0, 1, 6 and 7 (from 7.00000 to 7.11000) were surveyed during 1982 with LaCoste and Rombers Meter No G-649 for which a dial constant of 1.01132 had been established at a calibration range. This meter exhibited non-linear drift effects up to 0.2 milligals in amplitude. However these are believed to result from long term factors of the order of hours in time and would therefore introduce long wavelength effects into the data rather than significantly alter the measured station to station differences.

The remaining stations were surveyed during 1983 with LaCoste and Rombers Meter No G-544 for which a dial constant of 1.02073 had been established at a calibration range. Non-linear drift effects were usually less than 0.05 milligals.

7.0 Results

The data has been presented as profiles (Appendices 3 and 4) and as a residual Bouguer contour map (Plan No NTd 3286).

Most of the prominent gravity responses are associated with stations of the reconnaissance surveys where barometric levelling was used.

The effect of inaccurate levels can be seen on the road traverse at the east end of line 100. Here the elevations are 15 to 20 metres too high relative to those established by optical levelling on line 100, and a high is introduced into the Bouguer contours. This was the cause of the response which prompted the surveying of lines 100, 110, 120 and 130. Thus the accuracy of the elevations for the reconnaissance road stations is questionable.

The Bouguer values for the regional BMR stations appear to tie in with the reconnaissance helicopter stations quite well, indicating that in general the accuracy of these stations is satisfactory.

None of the responses shown by the Bouguer contours warrents further work.

8.0 References

Dunn P.R. 1963 — Explanatory Notes, Roper River SD 53-15 and Cape Beatrice SD 53-12 Bureau of Mineral Resources, Geology and Geophysics, Dept of National Development

Jenke G.P. 1983 — Childer Creek EL 3265 Annual Report for the Year Ending 19/4/83 CRAE Report 130140 (unpublished)

9.0 Keywords

Lead, zinc, copper, diamonds, dolomite, black shale, shale hosted type, Proterozoic-Lr, geophys-grav, Landsat

10.0 Location

Roper River SD 53-11
Roper 5968

11.0 List of Plans

Plan No	Title	Scale
NTd 2074	Childer Creek EL 3265 EL Renewal	1:250 000
NTd 3285	Gravity Station Locations	1:100 000
NTd 3286	Bouguer Gravity Contours	1:100 000

Appendix 1

Reconnaissance Helicopter Gravity Survey Results

CHILDER CREEK EL 3265 HELICOPTER RECONNAISSANCE GRAVITY SURVEY

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
0.005	528723	8342477	3.350	99.210	109.092
0.006	530015	8343937	2.130	100.250	110.491
0.007	535113	8342718	10.310	99.450	110.806
0.093	520448	8345398	12.240	94.380	107.202
0.112	517962	8342828	14.780	90.830	103.098
0.113	528803	8354163	9.720	99.780	115.701
0.114	527228	8352732	1.510	99.630	113.348
0.115	525664	8351414	1.490	98.170	111.343
0.116	524573	8349939	4.570	96.850	110.025
0.117	523091	8349146	11.830	96.150	110.428
0.118	521718	8346834	11.580	96.460	109.741
0.119	519625	8343999	15.790	91.460	104.408
0.120	523969	8342867	7.030	97.230	107.993
0.121	525827	8344044	6.260	97.300	108.395
0.122	528432	8345810	6.360	98.640	110.479
0.123	528502	8347778	12.760	98.400	112.305
0.124	529050	8349021	8.760	98.960	112.587
0.125	526515	8358222	12.590	94.980	113.126
0.126	528141	8360006	7.130	96.170	113.973
0.127	529214	8360727	9.900	88.370	107.014
0.128	525025	8356507	16.710	89.970	108.223
0.129	524080	8354877	14.370	91.540	108.665
0.130	522481	8354163	14.820	96.110	113.030
0.131	520695	8352412	12.080	95.780	111.443
0.132	519426	8350975	16.680	95.160	111.139
0.133	518801	8349513	19.460	95.460	111.387
0.134	517201	8348300	21.600	94.830	110.680
0.135	516614	8346892	17.830	94.650	109.181
0.136	515513	8345860	17.360	94.090	108.106
0.137	514695	8344906	20.360	92.450	106.665
0.138	513326	8343532	22.580	88.650	102.738
0.139	511863	8341944	28.290	88.430	102.991
0.155	506283	8342352	51.440	88.370	107.650
0.156	507713	8344693	29.740	90.420	106.389
0.157	510729	8346670	25.930	92.000	108.031
0.158	511887	8347990	23.710	93.040	109.175
0.159	512663	8349890	22.130	93.700	110.302
0.160	513907	8350610	12.380	94.000	108.979
0.161	515717	8351658	19.670	94.200	111.044
0.162	529810	8369251	1.240	89.720	110.150
0.163	528250	8368021	6.700	91.020	112.020
0.164	527093	8366772	10.880	91.490	112.800
0.165	525418	8365887	13.820	91.320	112.845
0.166	523701	8364444	12.920	91.830	112.586
0.167	521876	8363324	11.290	92.720	112.695
0.168	519879	8362400	12.510	93.360	113.196
0.169	518665	8361002	16.530	93.520	113.574
0.170	516826	8359725	18.000	93.240	113.059
0.171	514860	8359222	8.180	96.450	114.129

0.172	512742	8358657	5.890	97.800	114.795
0.173	510839	8358298	6.380	97.840	114.783
0.174	509168	8357674	74.720	81.920	112.058
0.175	507102	8356861	53.300	87.610	113.197
0.176	501071	8348571	46.560	88.080	108.942
0.177	499428	8347824	41.550	89.760	109.329
0.178	498070	8347098	46.230	88.260	108.452
0.179	506556	8348345	33.830	92.290	110.558
0.180	505057	8347025	37.360	92.170	110.592
0.181	503847	8346212	43.760	86.740	106.087
0.182	502185	8344313	44.420	86.800	105.499
0.183	500827	8343032	51.820	84.710	104.340
0.184	499300	8341711	45.990	82.780	100.720
0.187	506912	8343613	44.510	84.640	103.073
0.188	514162	8344167	22.180	89.400	103.670

Appendix 2

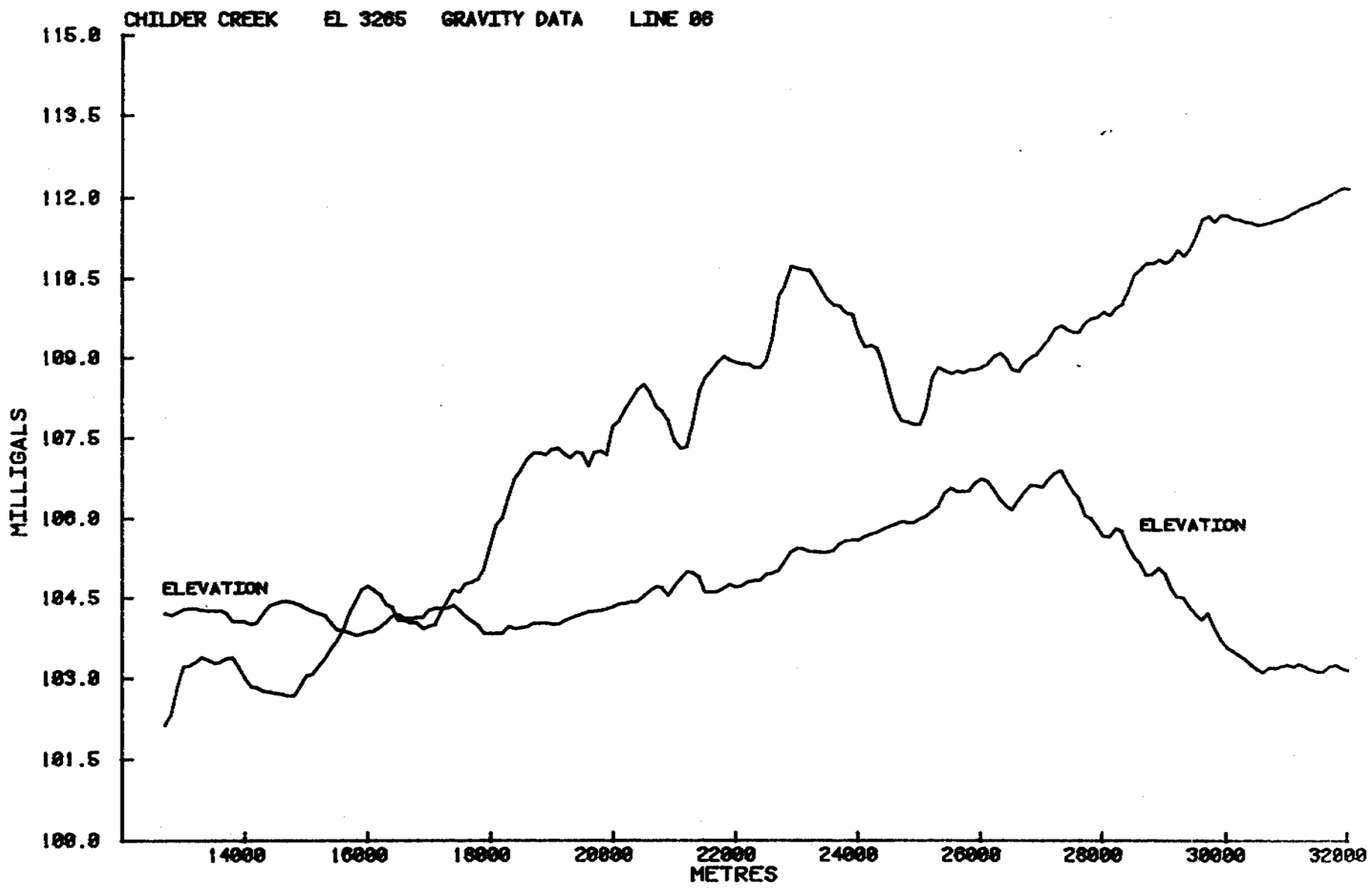
Reconnaissance Road Gravity Traverse Results

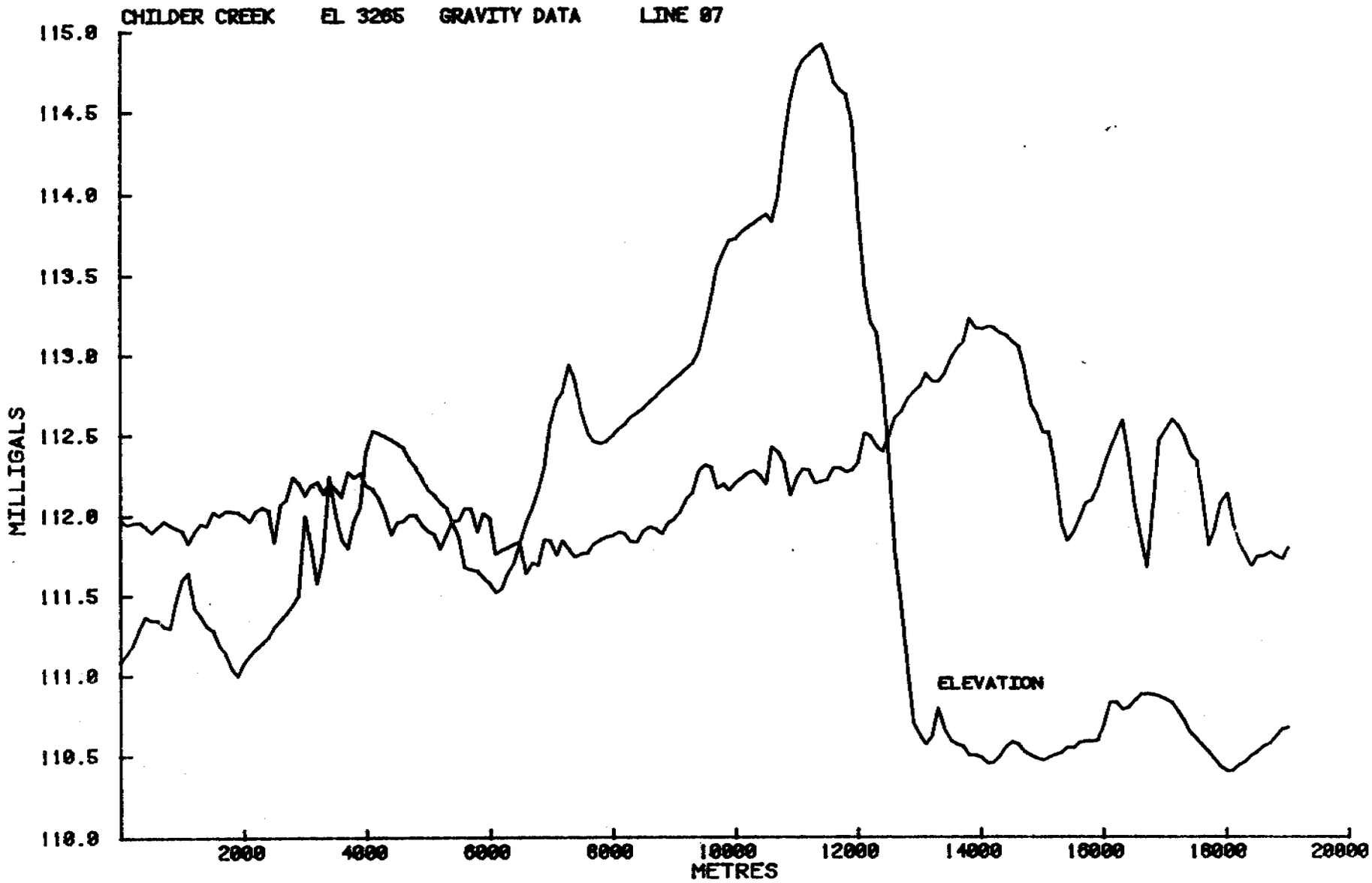
CHILDER CREEK EL 3265 ROAD RECONNAISSANCE TRAVERSE 1982

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
1.00001	526465	8364738	22.556	91.550	114.325
1.00002	527094	8365435	24.762	91.580	115.075
1.00003	527843	8366039	23.066	92.040	115.449
1.00004	528821	8366405	22.965	91.010	114.550
1.00005	529895	8366632	17.277	91.100	113.614
1.00006	530979	8366844	16.999	91.070	113.617
1.00007	532085	8367037	16.012	90.240	112.672
1.00008	533138	8367179	7.219	92.330	113.091
1.00009	534254	8367202	4.635	92.280	112.542
1.00010	535190	8367553	1.786	91.820	111.666
1.00011	536024	8368290	2.129	90.800	111.016
1.00012	533097	8367331	6.146	91.300	111.912
1.00013	532266	8367883	21.746	91.540	115.447
1.00014	531251	8368326	2.474	91.720	112.015
1.00015	530359	8368842	3.788	90.760	111.524
1.00016	529476	8369394	4.925	90.820	112.033
1.00017	528898	8370233	3.311	90.830	112.069
1.00018	528102	8370983	3.472	90.320	111.897
1.00019	527279	8371382	6.738	89.770	112.152
1.00020	526388	8370661	6.455	90.490	112.521
1.00021	525652	8370110	6.349	91.200	112.984
1.00022	524850	8369449	4.824	91.870	113.083
1.00023	524041	8368862	6.937	92.430	113.818
1.00024	523297	8368228	3.726	91.890	112.386
1.00025	522520	8367618	3.354	92.290	112.462
1.00026	521665	8367139	6.443	92.000	112.583
1.00027	520751	8366771	5.627	92.630	112.901
1.00028	519771	8366531	6.587	93.550	113.911
1.00029	518826	8366320	3.464	93.190	112.850
1.00030	518010	8365882	5.133	93.200	113.008
1.00031	517568	8364980	6.359	94.020	113.700
1.00032	516943	8364216	5.277	94.400	113.554
1.00033	516157	8363662	9.253	94.670	114.379
1.00034	515222	8363354	4.267	94.630	113.231
1.00035	514288	8363047	3.896	95.130	113.531
1.00036	513345	8362755	3.967	95.140	113.435
1.00037	512364	8362556	3.329	95.250	113.337
1.00038	511380	8362517	4.999	93.740	112.139
1.00039	510383	8362522	5.337	93.220	111.687
1.00040	509396	8362431	5.054	95.170	113.544
1.00041	508456	8362192	6.102	96.600	115.081
1.00042	507497	8361932	4.754	97.170	115.279
1.00043	506685	8361466	5.269	97.020	115.039
1.00044	505727	8361126	3.567	97.120	114.664

Appendix 3

Detailed Road Gravity Traverse Results


CHILDER CREEK EL 3265 GRAVITY DATA LINE 06
115.0
113.5
112.0
110.5
109.0
107.5
106.0
104.5
103.0
101.5
100.0
MILLIGALS
ELEVATION
ELEVATION
14000
16000
18000
20000
22000
24000
26000
28000
30000
32000
METRES


CHILDER CREEK EL 3265 GRAVITY DATA LINE 07
115.0
114.5
114.0
113.5
113.0
112.5
112.0
111.5
111.0
110.5
110.0
MILLIGALS
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
METRES
ELEVATION

CHILDER CREEK EL 3265 GRAVITY DATA LINE 06

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
6.12700	513177	8341668	28.045	87.749	102.149
6.12800	513100	8341732	27.895	87.947	102.344
6.12900	513034	8341807	28.208	88.322	102.812
6.13000	512976	8341888	28.683	88.614	103.230
6.13100	512901	8341954	28.790	88.578	103.242
6.13200	512828	8342022	28.658	88.650	103.316
6.13300	512764	8342099	28.482	88.728	103.391
6.13400	512706	8342180	28.383	88.659	103.335
6.13500	512670	8342270	28.430	88.560	103.282
6.13600	512659	8342370	28.437	88.546	103.311
6.13700	512642	8342469	28.019	88.659	103.382
6.13800	512628	8342564	27.011	88.823	103.387
6.13900	512631	8342664	27.124	88.578	103.204
6.14000	512608	8342760	27.045	88.367	103.017
6.14100	512564	8342849	26.742	88.220	102.848
6.14200	512504	8342929	26.980	88.117	102.824
6.14300	512438	8343004	28.116	87.797	102.758
6.14400	512386	8343090	29.121	87.552	102.746
6.14500	512337	8343178	29.393	87.433	102.716
6.14600	512291	8343266	29.650	87.340	102.710
6.14700	512242	8343353	29.587	87.288	102.681
6.14800	512212	8343447	29.339	87.300	102.683
6.14900	512162	8343534	29.095	87.485	102.856
6.15000	512126	8343627	28.659	87.731	103.054
6.15100	512096	8343722	28.286	87.801	103.089
6.15200	512056	8343814	28.058	87.951	103.232
6.15300	512034	8343911	27.763	88.116	103.378
6.15400	511986	8343995	26.892	88.427	103.552
6.15500	511909	8344058	26.028	88.733	103.715
6.15600	511819	8344103	25.877	88.924	103.894
6.15700	511734	8344155	25.611	89.276	104.215
6.15800	511649	8344207	25.391	89.506	104.423
6.15900	511563	8344259	25.578	89.686	104.661
6.16000	511485	8344321	25.816	89.674	104.721
6.16100	511399	8344372	25.924	89.556	104.645
6.16200	511312	8344422	26.387	89.357	104.557
6.16300	511226	8344474	26.974	89.046	104.383
6.16400	511138	8344521	27.805	88.792	104.312
6.16500	511046	8344562	27.903	88.511	104.067
6.16600	510952	8344597	27.433	88.600	104.078
6.16700	510862	8344640	27.427	88.532	104.026
6.16800	510772	8344682	27.549	88.500	104.035
6.16900	510684	8344730	27.629	88.351	103.922
6.17000	510591	8344767	28.468	88.227	103.978
6.17100	510496	8344800	28.780	88.178	104.004
6.17200	510400	8344829	28.624	88.433	104.240
6.17300	510314	8344877	28.771	88.591	104.447
6.17400	510230	8344931	29.097	88.699	104.641

6.17500	510143	8344981	28.348	88.797	104.611
6.17600	510061	8345037	27.637	89.072	104.769
6.17700	509972	8345081	27.076	89.204	104.809
6.17800	509876	8345109	26.505	89.357	104.861
6.17900	509785	8345149	25.540	89.712	105.042
6.18000	509697	8345198	25.549	90.117	105.469
6.18100	509608	8345244	25.652	90.487	105.878
6.18200	509519	8345290	25.650	90.599	106.008
6.18300	509430	8345335	26.391	90.797	106.371
6.18400	509353	8345399	26.173	91.182	106.738
6.18500	509271	8345455	26.346	91.273	106.887
6.18600	509176	8345486	26.420	91.465	107.106
6.18700	509080	8345515	26.895	91.485	107.232
6.18800	508982	8345532	26.856	91.475	107.221
6.18900	508913	8345598	26.900	91.409	107.190
6.19000	508822	8345638	26.711	91.530	107.290
6.19100	508728	8345669	26.716	91.545	107.319
6.19200	508628	8345676	27.126	91.356	107.213
6.19300	508537	8345715	27.476	91.188	107.130
6.19400	508445	8345757	27.735	91.232	107.243
6.19500	508354	8345799	28.041	91.125	107.213
6.19600	508269	8345851	28.279	90.810	106.966
6.19700	508190	8345912	28.367	91.037	107.235
6.19800	508106	8345966	28.448	91.035	107.271
6.19900	508015	8346007	28.696	90.882	107.183
6.20000	507921	8346042	28.907	91.379	107.736
6.20100	507825	8346072	29.271	91.379	107.821
6.20200	507729	8346101	29.350	91.580	108.049
6.20300	507634	8346130	29.516	91.700	108.213
6.20400	507542	8346169	29.537	91.885	108.418
6.20500	507456	8346221	30.248	91.817	108.511
6.20600	507376	8346281	30.929	91.492	108.344
6.20700	507289	8346329	31.383	91.115	108.077
6.20800	507201	8346374	31.244	91.052	108.005
6.20900	507124	8346438	30.244	91.030	107.812
6.21000	507047	8346502	31.408	90.434	107.471
6.21100	506967	8346562	32.416	90.044	107.304
6.21200	506891	8346628	33.252	89.890	107.342
6.21300	506813	8346690	33.095	90.327	107.773
6.21400	506725	8346738	32.619	91.006	108.378
6.21500	506636	8346784	30.746	91.610	108.633
6.21600	506575	8346847	30.749	91.718	108.766
6.21700	506583	8346946	30.768	91.815	108.908
6.21800	506531	8347029	31.236	91.807	109.026
6.21900	506442	8347070	31.663	91.649	108.968
6.22000	506346	8347099	31.323	91.644	108.908
6.22100	506250	8347127	31.615	91.543	108.877
6.22200	506155	8347160	32.033	91.459	108.888
6.22300	506063	8347198	32.252	91.329	108.817
6.22400	505970	8347236	32.208	91.321	108.816
6.22500	505876	8347266	33.000	91.311	108.974
6.22600	505786	8347310	33.086	91.674	109.372
6.22700	505691	8347342	33.506	92.366	110.159
6.22800	505596	8347373	34.549	92.356	110.367
6.22900	505503	8347410	35.756	92.457	110.721

6.23000	505408	8347443	36.222	92.311	110.680
6.23100	505314	8347475	36.182	92.285	110.659
6.23200	505221	8347505	35.762	92.336	110.640
6.23300	505125	8347482	35.793	92.184	110.485
6.23400	505025	8347480	35.694	91.992	110.272
6.23500	504926	8347490	35.762	91.800	110.098
6.23600	504829	8347516	35.969	91.639	109.988
6.23700	504732	8347539	36.778	91.457	109.975
6.23800	504635	8347566	37.208	91.235	109.848
6.23900	504546	8347610	37.278	91.175	109.820
6.24000	504457	8347652	37.169	90.823	109.463
6.24100	504359	8347672	37.754	90.444	109.207
6.24200	504260	8347687	38.051	90.414	109.242
6.24300	504163	8347712	38.280	90.299	109.182
6.24400	504072	8347754	38.642	89.920	108.892
6.24500	503978	8347783	38.958	89.385	108.431
6.24600	503879	8347799	39.292	88.942	108.060
6.24700	503782	8347823	39.584	88.644	107.829
6.24800	503691	8347863	39.477	88.615	107.795
6.24900	503606	8347916	39.476	88.561	107.763
6.25000	503529	8347980	39.997	88.440	107.770
6.25100	503441	8348027	40.279	88.634	108.039
6.25200	503353	8348073	40.986	89.081	108.644
6.25300	503278	8348127	41.512	89.133	108.822
6.25400	503232	8348215	43.200	88.700	108.757
6.25500	503163	8348288	43.786	88.504	108.706
6.25600	503100	8348365	43.329	88.623	108.766
6.25700	503051	8348451	43.383	88.534	108.723
6.25800	503006	8348540	43.426	88.556	108.790
6.25900	502960	8348629	44.483	88.310	108.789
6.26000	502901	8348710	44.961	88.216	108.822
6.26100	502855	8348799	44.623	88.324	108.900
6.26200	502823	8348894	43.639	88.614	109.035
6.26300	502796	8348990	42.368	88.890	109.100
6.26400	502793	8349090	41.520	88.887	108.971
6.26500	502796	8349190	41.073	88.732	108.769
6.26600	502782	8349288	42.307	88.430	108.751
6.26700	502747	8349381	43.307	88.352	108.907
6.26800	502703	8349471	44.117	88.263	109.014
6.26900	502671	8349566	44.087	88.291	109.075
6.27000	502641	8349660	43.931	88.421	109.213
6.27100	502595	8349749	44.883	88.332	109.347
6.27200	502537	8349830	45.654	88.349	109.549
6.27300	502465	8349899	46.057	88.306	109.614
6.27400	502389	8349963	44.623	88.485	109.537
6.27500	502299	8350006	43.271	88.684	109.487
6.27600	502224	8350071	42.433	88.838	109.503
6.27700	502159	8350147	40.194	89.411	109.667
6.27800	502118	8350236	39.937	89.509	109.751
6.27900	502076	8350326	38.879	89.703	109.773
6.28000	502030	8350414	37.704	89.991	109.866
6.28100	501981	8350499	37.691	89.903	109.810
6.28200	501975	8350599	38.749	89.799	109.955
6.28300	501975	8350699	38.344	89.897	110.014
6.28400	501961	8350798	36.376	90.505	110.275

6.28500	501939	8350895	35.199	90.992	110.570
6.28600	501907	8350990	34.226	91.251	110.677
6.28700	501880	8351086	32.848	91.582	110.776
6.28800	501837	8351173	32.979	91.518	110.773
6.28900	501771	8351249	33.730	91.408	110.842
6.29000	501708	8351327	33.033	91.455	110.784
6.29100	501653	8351409	31.164	91.871	110.866
6.29200	501607	8351496	30.066	92.206	111.020
6.29300	501549	8351578	30.036	92.076	110.918
6.29400	501511	8351670	28.902	92.391	111.047
6.29500	501474	8351760	27.918	92.807	111.306
6.29600	501410	8351836	27.246	93.192	111.590
6.29700	501366	8351926	28.163	93.052	111.667
6.29800	501325	8352016	26.452	93.225	111.540
6.29900	501260	8352092	24.943	93.620	111.670
6.30000	501192	8352166	23.838	93.796	111.658
6.30100	501121	8352236	23.386	93.789	111.591
6.30200	501064	8352318	22.903	93.841	111.581
6.30300	501005	8352399	22.379	93.877	111.547
6.30400	500943	8352478	21.735	93.958	111.534
6.30500	500919	8352575	21.210	93.979	111.491
6.30600	500926	8352673	20.772	94.051	111.517
6.30700	500941	8352772	21.310	93.930	111.542
6.30800	500944	8352870	21.297	93.930	111.580
6.30900	500926	8352968	21.569	93.859	111.603
6.31000	500910	8353067	21.731	93.852	111.668
6.31100	500927	8353166	21.476	93.920	111.726
6.31200	500936	8353265	21.804	93.880	111.791
6.31300	500936	8353365	21.440	93.950	111.831
6.31400	500919	8353464	21.098	94.031	111.885
6.31500	500912	8353563	20.823	94.091	111.932
6.31600	500894	8353662	20.921	94.091	111.991
6.31700	500883	8353761	21.523	93.999	112.058
6.31800	500887	8353861	21.727	93.989	112.129
6.31900	500882	8353961	21.300	94.079	112.176
6.32000	500859	8354057	20.978	94.078	112.151

CHILDER CREEK EL 3265 GRAVITY DATA LINE 07

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
7.00000	500884	8353999	21.842	93.753	111.973
7.00100	500959	8353931	22.736	93.578	111.946
7.00200	501033	8353863	23.868	93.398	111.960
7.00300	501107	8353795	25.893	93.029	111.962
7.00400	501181	8353727	27.450	92.722	111.934
7.00500	501255	8353659	26.955	92.809	111.896
7.00600	501328	8353589	26.968	92.875	111.936
7.00700	501401	8353520	26.169	93.093	111.968
7.00800	501474	8353450	25.954	93.137	111.942
7.00900	501547	8353381	29.307	92.486	111.922

7.01000	501620	8353312	32.120	91.943	111.905
7.01100	501695	8353244	32.975	91.721	111.823
7.01200	501769	8353176	28.391	92.728	111.901
7.01300	501844	8353108	27.473	92.985	111.949
7.01400	501918	8353040	26.205	93.248	111.935
7.01500	501992	8352972	25.615	93.483	112.026
7.01600	502066	8352904	23.840	93.834	111.999
7.01700	502140	8352835	22.803	94.097	112.030
7.01800	502214	8352767	21.018	94.472	112.026
7.01900	502288	8352699	19.888	94.719	112.022
7.02000	502363	8352631	21.573	94.393	112.001
7.02100	502437	8352563	22.577	94.187	111.965
7.02200	502510	8352494	23.399	94.121	112.032
7.02300	502584	8352425	24.114	94.028	112.051
7.02400	502656	8352355	24.956	93.868	112.029
7.02500	502728	8352285	26.155	93.462	111.830
7.02600	502800	8352214	27.038	93.555	112.068
7.02700	502872	8352144	27.862	93.454	112.101
7.02800	502943	8352072	28.943	93.414	112.244
7.02900	503016	8352008	30.073	93.178	112.204
7.03000	503106	8351973	40.083	91.143	112.125
7.03100	503159	8351888	36.500	91.949	112.191
7.03200	503215	8351804	31.418	93.004	112.212
7.03300	503262	8351715	35.570	92.144	112.132
7.03400	503307	8351625	45.003	90.397	112.205
7.03500	503394	8351597	40.122	91.328	112.163
7.03600	503490	8351624	37.000	91.881	112.113
7.03700	503586	8351655	35.917	92.241	112.273
7.03800	503681	8351688	39.242	91.538	112.238
7.03900	503776	8351722	41.083	91.190	112.266
7.04000	503870	8351759	47.917	89.750	112.187
7.04100	503965	8351791	50.617	89.184	112.165
7.04200	504060	8351824	50.253	89.178	112.101
7.04300	504157	8351853	49.868	89.152	112.011
7.04400	504253	8351880	49.371	89.104	111.877
7.04500	504350	8351909	49.000	89.248	111.960
7.04600	504446	8351938	48.395	89.365	111.969
7.04700	504543	8351967	46.969	89.668	112.004
7.04800	504639	8351996	45.957	89.850	111.999
7.04900	504736	8352025	44.479	90.065	111.934
7.05000	504832	8352053	43.202	90.269	111.899
7.05100	504929	8352082	42.477	90.379	111.878
7.05200	505025	8352111	41.570	90.458	111.791
7.05300	505122	8352140	40.819	90.684	111.881
7.05400	505209	8352182	39.062	91.101	111.969
7.05500	505305	8352191	37.246	91.458	111.972
7.05600	505401	8352222	33.487	92.255	112.042
7.05700	505497	8352253	33.222	92.293	112.041
7.05800	505594	8352281	33.040	92.171	111.895
7.05900	505691	8352308	32.187	92.445	112.012
7.06000	505788	8352333	31.426	92.555	111.982
7.06100	505885	8352350	30.319	92.543	111.760
7.06200	505975	8352394	30.854	92.447	111.787
7.06300	506071	8352426	32.739	92.075	111.799
7.06400	506166	8352457	34.071	91.822	111.821

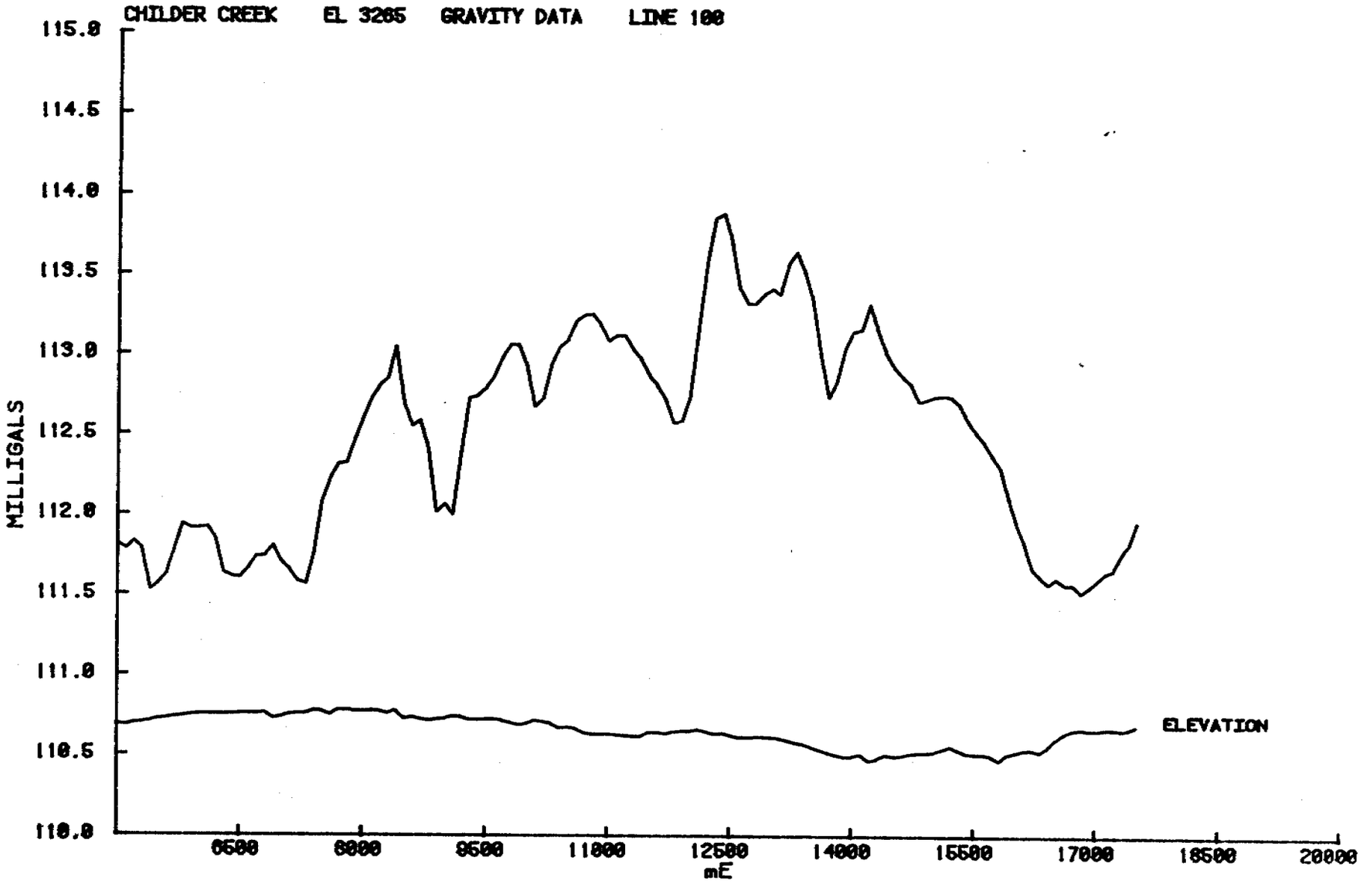
7.06500	506262	8352489	36.444	91.356	111.836
7.06600	506357	8352523	39.118	90.612	111.631
7.06700	506454	8352549	40.975	90.309	111.704
7.06800	506550	8352579	43.029	89.876	111.688
7.06900	506645	8352613	45.962	89.446	111.849
7.07000	506740	8352646	51.164	88.398	111.839
7.07100	506836	8352678	54.305	87.678	111.751
7.07200	506932	8352708	55.355	87.550	111.842
7.07300	507028	8352738	58.868	86.791	111.787
7.07400	507124	8352769	56.930	87.113	111.740
7.07500	507216	8352808	53.017	87.890	111.763
7.07600	507306	8352855	50.313	88.408	111.767
7.07700	507394	8352903	49.151	88.670	111.820
7.07800	507483	8352951	48.950	88.716	111.847
7.07900	507571	8352999	49.254	88.654	111.864
7.08000	507660	8353047	49.910	88.513	111.872
7.08100	507748	8353095	50.725	88.358	111.897
7.08200	507836	8353143	51.386	88.192	111.881
7.08300	507926	8353190	52.264	87.953	111.834
7.08400	508015	8353237	52.829	87.818	111.830
7.08500	508104	8353284	53.441	87.756	111.907
7.08600	508193	8353331	54.152	87.615	111.926
7.08700	508282	8353377	54.871	87.442	111.914
7.08800	508371	8353424	55.635	87.241	111.882
7.08900	508460	8353471	56.280	87.168	111.955
7.09000	508549	8353519	56.990	87.030	111.976
7.09100	508638	8353566	57.645	86.928	112.022
7.09200	508727	8353614	58.379	86.848	112.107
7.09300	508814	8353664	58.958	86.749	112.143
7.09400	508901	8353715	60.462	86.567	112.277
7.09500	508986	8353769	63.449	85.995	112.316
7.09600	509068	8353827	67.060	85.243	112.298
7.09700	509150	8353886	70.855	84.344	112.170
7.09800	509234	8353942	72.773	83.966	112.193
7.09900	509318	8353997	74.296	83.607	112.156
7.10000	509402	8354052	74.491	83.594	112.204
7.10100	509484	8354111	75.301	83.440	112.234
7.10200	509567	8354168	75.868	83.337	112.265
7.10300	509650	8354225	76.390	83.224	112.278
7.10400	509733	8354281	76.919	83.067	112.249
7.10500	509818	8354336	77.495	82.872	112.190
7.10600	509917	8354345	76.471	83.307	112.427
7.10700	510018	8354346	79.782	82.620	112.392
7.10800	510118	8354352	86.102	81.306	112.324
7.10900	510219	8354357	91.426	80.052	112.120
7.11000	510320	8354360	95.029	79.454	112.233
7.11100	510420	8354362	96.339	79.251	112.289
7.11200	510521	8354364	97.202	79.069	112.277
7.11300	510622	8354366	97.884	78.856	112.200
7.11400	510722	8354368	98.408	78.766	112.214
7.11500	510823	8354370	96.785	79.094	112.223
7.11600	510924	8354371	93.729	79.770	112.298
7.11700	511024	8354371	92.734	79.965	112.297
7.11800	511118	8354393	92.128	80.048	112.270
7.11900	511207	8354442	88.400	80.775	112.283

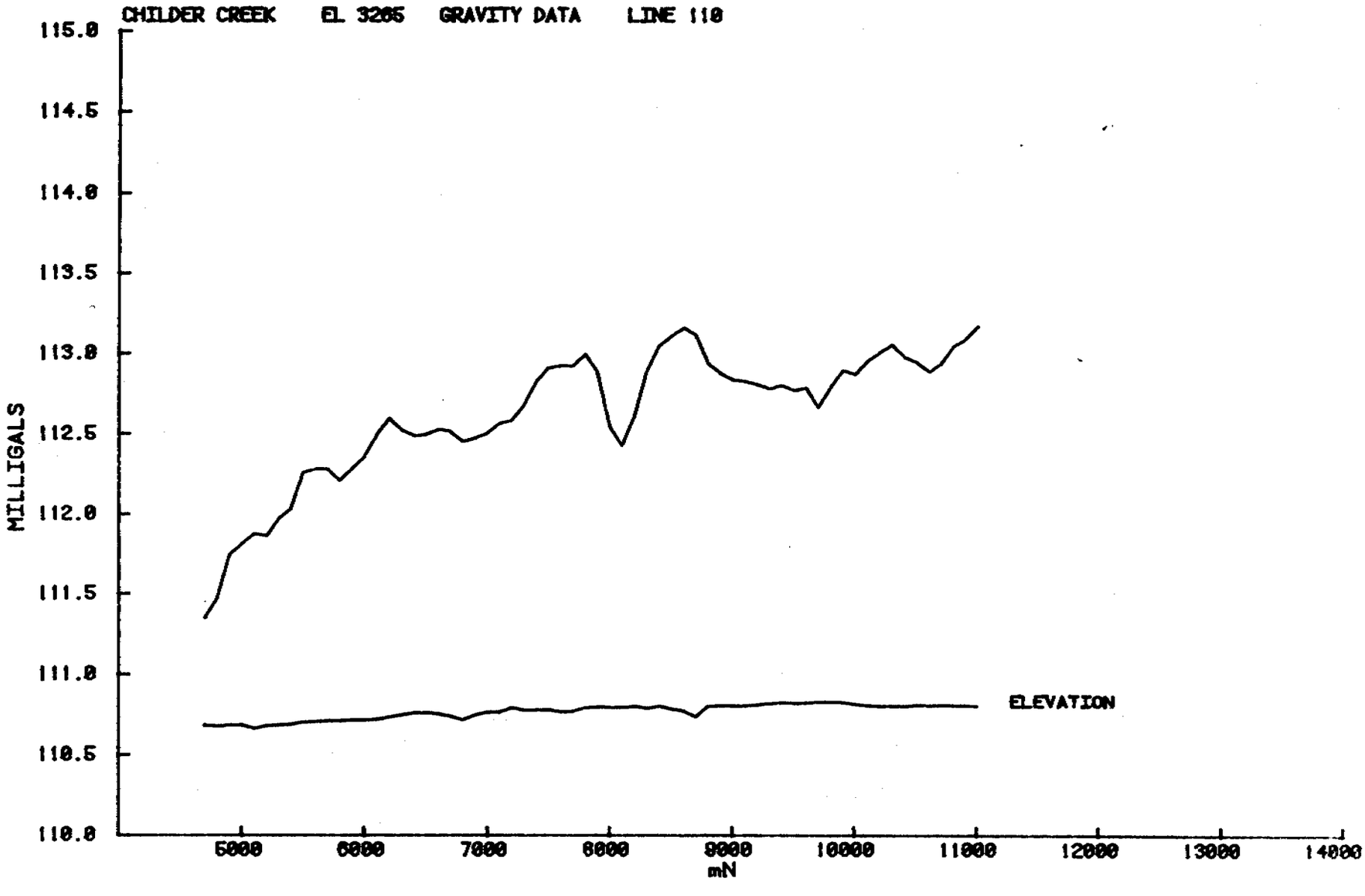
7.12000	511295	8354490	78.061	82.834	112.327
7.12100	511377	8354534	68.783	84.824	112.509
7.12200	511466	8354570	64.077	85.719	112.493
7.12300	511553	8354621	62.616	85.919	112.426
7.12400	511641	8354670	56.825	87.008	112.395
7.12500	511724	8354726	46.762	89.066	112.495
7.12600	511811	8354775	35.531	91.369	112.608
7.12700	511907	8354804	28.461	92.789	112.648
7.12800	511975	8354869	20.478	94.413	112.729
7.12900	512035	8354950	13.983	95.701	112.770
7.13000	512081	8355039	12.422	96.008	112.807
7.13100	512128	8355128	11.339	96.263	112.886
7.13200	512208	8355168	12.483	95.968	112.832
7.13300	512307	8355152	15.935	95.295	112.832
7.13400	512403	8355133	13.277	95.877	112.883
7.13500	512503	8355120	11.846	96.265	112.985
7.13600	512603	8355111	11.418	96.408	113.039
7.13700	512704	8355103	11.089	96.520	113.084
7.13800	512804	8355095	10.047	96.873	113.228
7.13900	512905	8355088	10.037	96.816	113.166
7.14000	513005	8355080	9.805	96.861	113.163
7.14100	513105	8355072	9.101	97.020	113.180
7.14200	513206	8355065	9.127	97.009	113.171
7.14300	513306	8355057	9.952	96.815	113.136
7.14400	513407	8355050	11.120	96.575	113.123
7.14500	513507	8355042	11.723	96.416	113.079
7.14600	513608	8355035	11.336	96.465	113.050
7.14700	513708	8355028	10.493	96.495	112.912
7.14800	513809	8355021	9.995	96.372	112.688
7.14900	513909	8355015	9.707	96.371	112.627
7.15000	514010	8355008	9.405	96.316	112.510
7.15100	514110	8355001	9.805	96.247	112.517
7.15200	514210	8354994	10.115	95.960	112.288
7.15300	514311	8354987	10.396	95.561	111.942
7.15400	514411	8354979	11.052	95.325	111.832
7.15500	514512	8354972	10.921	95.416	111.894
7.15600	514612	8354965	11.641	95.359	111.976
7.15700	514713	8354957	11.832	95.424	112.075
7.15800	514813	8354950	11.857	95.438	112.092
7.15900	514914	8354943	11.926	95.514	112.178
7.16000	515014	8354935	13.803	95.271	112.301
7.16100	515114	8354925	16.670	94.822	112.413
7.16200	515214	8354916	16.643	94.928	112.510
7.16300	515315	8354909	15.770	95.182	112.589
7.16400	515416	8354903	15.989	94.895	112.343
7.16500	515516	8354896	16.816	94.450	112.058
7.16600	515616	8354889	17.579	94.086	111.842
7.16700	515717	8354882	17.672	93.896	111.667
7.16800	515817	8354874	17.528	94.334	112.073
7.16900	515918	8354867	17.358	94.761	112.464
7.17000	516018	8354860	16.966	94.905	112.528
7.17100	516119	8354853	16.532	95.059	112.594
7.17200	516219	8354847	15.520	95.221	112.554
7.17300	516320	8354841	14.319	95.388	112.482
7.17400	516420	8354835	12.931	95.560	112.379

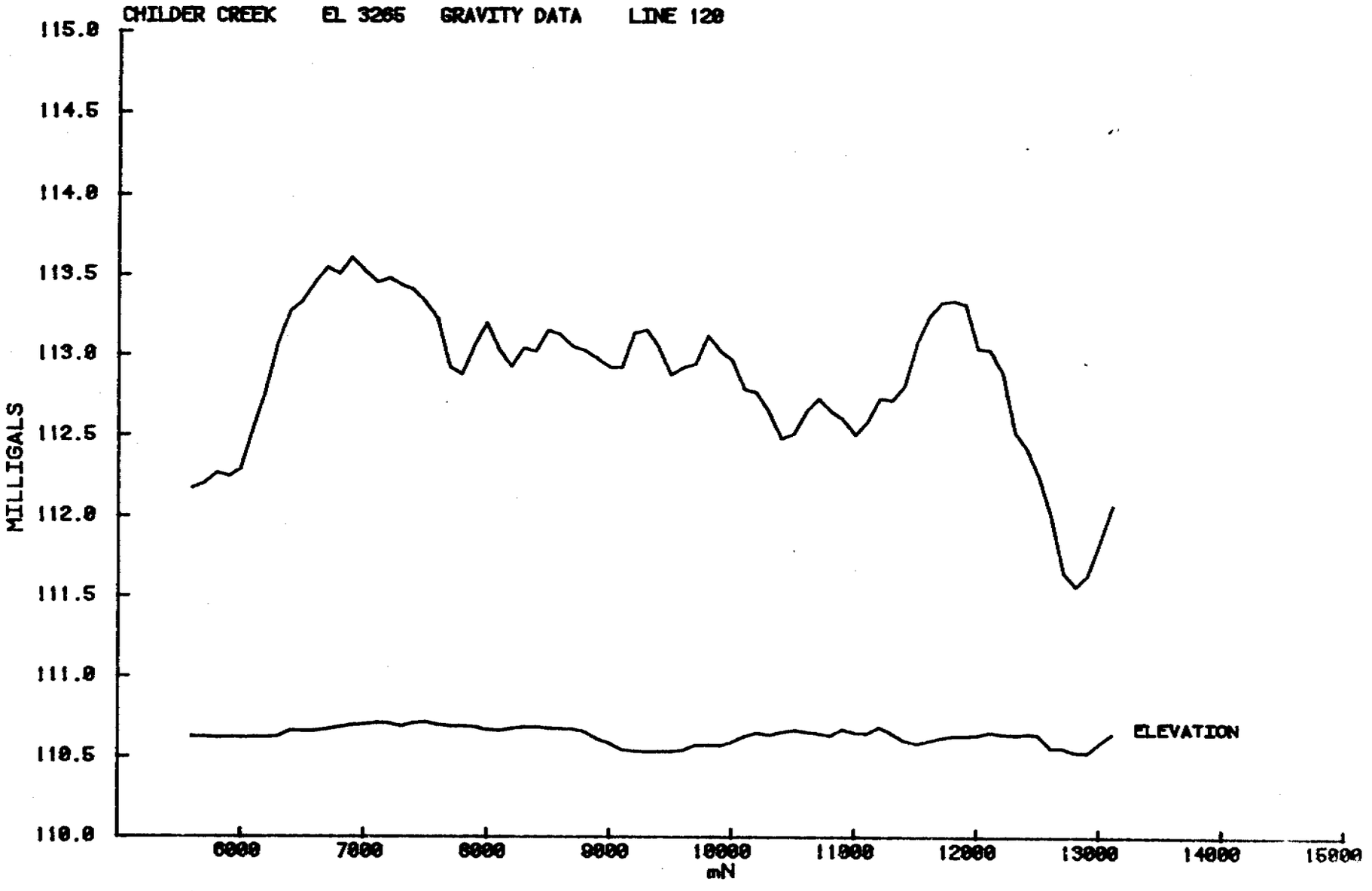
7.17500	516521	8354829	12.071	95.686	112.334
7.17600	516621	8354822	11.262	95.634	112.119
7.17700	516722	8354817	10.484	95.474	111.804
7.17800	516822	8354811	9.599	95.753	111.907
7.17900	516923	8354805	8.608	96.124	112.081
7.18000	517023	8354798	8.071	96.283	112.131
7.18100	517124	8354791	8.136	96.092	111.950
7.18200	517224	8354783	8.864	95.814	111.812
7.18300	517325	8354774	9.281	95.674	111.751
7.18400	517414	8354804	10.072	95.432	111.677
7.18500	517494	8354866	10.489	95.389	111.741
7.18600	517573	8354928	11.159	95.234	111.744
7.18700	517651	8354992	11.596	95.145	111.766
7.18800	517730	8355055	12.383	94.939	111.741
7.18900	517809	8355117	13.335	94.706	111.721
7.19000	517888	8355179	13.539	94.712	111.792

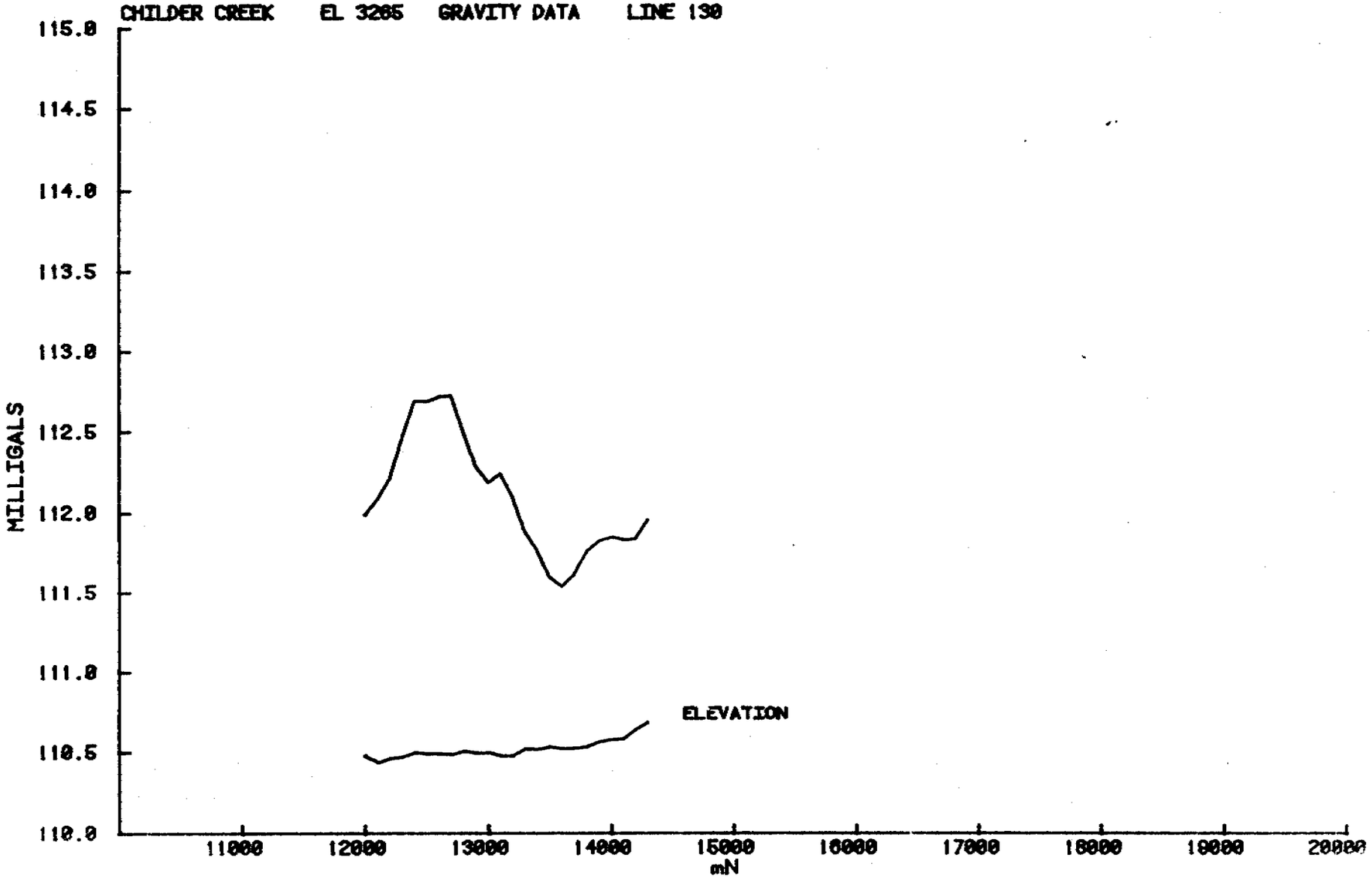
Appendix 4

Detailed Line Traverse Results


CHILDER CREEK EL 3265 GRAVITY DATA LINE 100
115.0
114.5
114.0
113.5
113.0
112.5
112.0
111.5
111.0
110.5
110.0
MILLIGALS
6500
8000
9500
11000
12500
14000
15500
17000
18500
20000
mE
ELEVATION


CHILDER CREEK EL 3265 GRAVITY DATA LINE 110
115.0
114.5
114.0
113.5
113.0
112.5
112.0
111.5
111.0
110.5
110.0
MILLIGALS
ELEVATION
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
mN


CHILDER CREEK EL 3265 GRAVITY DATA LINE 120
115.0
114.5
114.0
113.5
113.0
112.5
112.0
111.5
111.0
110.5
110.0
MILLIGALS
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
mN
ELEVATION


CHILDER CREEK EL 3285 GRAVITY DATA LINE 130
115.0
114.5
114.0
113.5
113.0
112.5
112.0
111.5
111.0
110.5
110.0
MILLIGALS
ELEVATION
11000
12000
13000
14000
15000
16000
17000
18000
19000
20000
mN

CHILDER CREEK EL 3265 GRAVITY DATA LINE 100

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
100.05000	517971	8355254	13.802	94.650	111.813
100.05100	518048	8355317	13.675	94.618	111.782
100.05200	518126	8355381	14.001	94.577	111.832
100.05300	518203	8355444	14.080	94.485	111.781
100.05400	518281	8355506	14.207	94.179	111.525
100.05500	518360	8355568	14.477	94.143	111.568
100.05600	518438	8355630	14.616	94.153	111.631
100.05700	518516	8355692	14.741	94.250	111.778
100.05800	518595	8355754	14.845	94.363	111.937
100.05900	518673	8355816	15.010	94.277	111.908
100.06000	518751	8355878	15.103	94.238	111.913
100.06100	518829	8355941	15.081	94.221	111.918
100.06200	518907	8356003	15.095	94.120	111.845
100.06300	518985	8356066	15.083	93.886	111.634
100.06400	519063	8356129	15.114	93.825	111.605
100.06500	519141	8356191	15.169	93.785	111.602
100.06600	519218	8356254	15.191	93.817	111.663
100.06700	519296	8356317	15.211	93.860	111.736
100.06800	519374	8356379	15.291	93.820	111.738
100.06900	519452	8356442	14.604	93.996	111.805
100.07000	519530	8356505	14.721	93.847	111.704
100.07100	519607	8356567	15.137	93.686	111.651
100.07200	519685	8356630	15.204	93.575	111.579
100.07300	519763	8356693	15.235	93.526	111.562
100.07400	519841	8356755	15.604	93.621	111.754
100.07500	519919	8356818	15.473	93.939	112.072
100.07600	519997	8356880	15.064	94.147	112.225
100.07700	520075	8356943	15.644	94.094	112.313
100.07800	520153	8357005	15.629	94.083	112.324
100.07900	520231	8357068	15.459	94.233	112.466
100.08000	520309	8357130	15.453	94.336	112.594
100.08100	520388	8357192	15.532	94.427	112.725
100.08200	520466	8357253	15.435	94.502	112.807
100.08300	520544	8357315	15.223	94.565	112.854
100.08400	520623	8357377	15.592	94.659	113.046
100.08500	520701	8357439	14.576	94.478	112.690
100.08600	520780	8357501	14.719	94.287	112.552
100.08700	520858	8357564	14.489	94.341	112.587
100.08800	520935	8357626	14.328	94.160	112.400
100.08900	521013	8357689	14.517	93.703	112.006
100.09000	521091	8357752	14.540	93.727	112.060
100.09100	521168	8357816	14.871	93.563	111.988
100.09200	521238	8357887	14.792	93.928	112.366
100.09300	521301	8357965	14.413	94.332	112.727
100.09400	521347	8358053	14.434	94.309	112.745
100.09500	521389	8358143	14.463	94.313	112.791
100.09600	521423	8358237	14.466	94.346	112.864
100.09700	521447	8358334	14.289	94.451	112.973

100.09800	521460	8358433	14.042	94.543	113.057
100.09900	521472	8358532	13.805	94.551	113.059
100.10000	521484	8358631	13.976	94.338	112.920
100.10100	521496	8358730	14.282	93.986	112.669
100.10200	521508	8358829	14.147	94.030	112.728
100.10300	521520	8358929	13.992	94.228	112.935
100.10400	521532	8359028	13.427	94.404	113.041
100.10500	521544	8359127	13.509	94.398	113.092
100.10600	521556	8359226	13.294	94.516	113.208
100.10700	521569	8359325	12.768	94.615	113.244
100.10800	521583	8359424	12.605	94.614	113.251
100.10900	521597	8359523	12.644	94.500	113.185
100.11000	521616	8359621	12.614	94.359	113.079
100.11100	521644	8359717	12.555	94.369	113.116
100.11200	521684	8359808	12.422	94.351	113.110
100.11300	521735	8359894	12.334	94.251	113.028
100.11400	521797	8359972	12.381	94.152	112.970
100.11500	521863	8360047	12.864	93.924	112.868
100.11600	521937	8360114	12.933	93.819	112.804
100.11700	522016	8360174	12.738	93.743	112.714
100.11800	522101	8360228	12.981	93.531	112.572
100.11900	522186	8360279	13.043	93.516	112.590
100.12000	522271	8360331	13.053	93.647	112.745
100.12100	522357	8360383	13.230	93.990	113.144
100.12200	522442	8360435	13.001	94.450	113.580
100.12300	522527	8360487	12.687	94.763	113.853
100.12400	522613	8360540	12.834	94.739	113.879
100.12500	522698	8360592	12.567	94.597	113.706
100.12600	522783	8360644	12.277	94.343	113.416
100.12700	522868	8360696	12.227	94.232	113.317
100.12800	522953	8360749	12.353	94.192	113.323
100.12900	523038	8360802	12.322	94.234	113.381
100.13000	523122	8360855	12.282	94.251	113.412
100.13100	523207	8360907	12.192	94.210	113.374
100.13200	523292	8360960	11.889	94.445	113.572
100.13300	523377	8361014	11.621	94.548	113.644
100.13400	523461	8361067	11.468	94.421	113.509
100.13500	523545	8361121	11.118	94.294	113.335
100.13600	523628	8361176	10.715	94.034	113.018
100.13700	523708	8361236	10.407	93.784	112.732
100.13800	523785	8361300	10.092	93.922	112.834
100.13900	523858	8361368	9.836	94.157	113.046
100.14000	523924	8361443	9.933	94.210	113.150
100.14100	523987	8361521	10.201	94.135	113.160
100.14200	524043	8361603	9.436	94.411	113.318
100.14300	524096	8361687	9.567	94.190	113.158
100.14400	524146	8361774	10.117	93.899	113.011
100.14500	524193	8361862	9.963	93.807	112.924
100.14600	524239	8361951	10.033	93.694	112.861
100.14700	524286	8362039	10.333	93.555	112.817
100.14800	524333	8362127	10.413	93.396	112.710
100.14900	524379	8362216	10.380	93.384	112.728
100.15000	524431	8362301	10.472	93.350	112.748
100.15100	524476	8362390	10.882	93.239	112.753
100.15200	524527	8362476	11.155	93.135	112.739

100.15300	524581	8362560	10.757	93.133	112.693
100.15400	524646	8362636	10.304	93.090	112.591
100.15500	524711	8362712	10.255	92.996	112.519
100.15600	524776	8362788	10.241	92.903	112.454
100.15700	524842	8362862	10.045	92.829	112.372
100.15800	524906	8362939	9.452	92.836	112.294
100.15900	524972	8363014	10.206	92.476	112.114
100.16000	525038	8363089	10.520	92.225	111.955
100.16100	525104	8363164	10.760	92.012	111.820
100.16200	525170	8363239	10.868	91.809	111.669
100.16300	525236	8363314	10.459	91.801	111.611
100.16400	525303	8363388	11.143	91.597	111.572
100.16500	525369	8363463	12.089	91.415	111.607
100.16600	525435	8363538	12.763	91.209	111.564
100.16700	525501	8363613	13.240	91.089	111.569
100.16800	525567	8363688	13.440	90.969	111.519
100.16900	525634	8363762	13.279	91.002	111.551
100.17000	525700	8363837	13.211	91.025	111.592
100.17100	525765	8363913	13.449	90.996	111.640
100.17200	525830	8363989	13.451	90.983	111.660
100.17300	525895	8364065	13.290	91.087	111.762
100.17400	525961	8364140	13.428	91.094	111.827
100.17490	526018	8364210	13.762	91.132	111.960

CHILDER CREEK EL 3265 GRAVITY DATA LINE 110

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
110.04700	517976	8354953	13.681	94.336	111.352
110.04800	517974	8355053	13.624	94.428	111.474
110.04900	517972	8355152	13.776	94.628	111.744
110.05000	517969	8355252	13.802	94.650	111.812
110.05100	517968	8355352	13.346	94.762	111.875
110.05200	517967	8355452	13.655	94.644	111.860
110.05300	517966	8355552	13.808	94.685	111.971
110.05400	517965	8355652	13.908	94.687	112.034
110.05500	517964	8355752	14.145	94.827	112.261
110.05600	517963	8355852	14.189	94.799	112.283
110.05700	517962	8355952	14.317	94.734	112.284
110.05800	517961	8356052	14.331	94.613	112.207
110.05900	517960	8356152	14.391	94.636	112.283
110.06000	517959	8356252	14.425	94.662	112.356
110.06100	517958	8356352	14.528	94.742	112.497
110.06200	517957	8356452	14.776	94.754	112.600
110.06300	517956	8356552	15.006	94.594	112.526
110.06400	517955	8356652	15.282	94.463	112.490
110.06500	517954	8356752	15.259	94.435	112.498
110.06600	517953	8356852	15.090	94.459	112.530
110.06700	517952	8356952	14.832	94.452	112.513
110.06800	517951	8357052	14.420	94.434	112.455
110.06900	517950	8357152	15.033	94.295	112.477

110.07000	517949	8357252	15.374	94.215	112.506
110.07100	517948	8357352	15.414	94.229	112.569
110.07200	517947	8357452	15.955	94.100	112.586
110.07300	517946	8357552	15.558	94.230	112.680
110.07400	517945	8357652	15.623	94.320	112.823
110.07500	517944	8357752	15.685	94.353	112.910
110.07600	517943	8357852	15.344	94.397	112.927
110.07700	517942	8357952	15.469	94.324	112.920
110.07800	517941	8358052	15.883	94.277	112.995
110.07900	517940	8358152	15.990	94.101	112.882
110.08000	517939	8358252	15.927	93.738	112.547
110.08100	517938	8358352	15.930	93.577	112.428
110.08200	517937	8358452	16.079	93.688	112.609
110.08300	517936	8358552	15.859	93.972	112.891
110.08400	517935	8358652	16.138	94.032	113.046
110.08500	517934	8358752	15.761	94.126	113.107
110.08600	517933	8358852	15.462	94.196	113.159
110.08700	517932	8358952	14.777	94.245	113.114
110.08800	517931	8359052	16.120	93.764	112.938
110.08900	517930	8359152	16.203	93.646	112.877
110.09000	517929	8359252	16.086	93.585	112.835
110.09100	517928	8359352	16.164	93.520	112.826
110.09200	517927	8359452	16.302	93.436	112.810
110.09300	517926	8359552	16.470	93.333	112.780
110.09400	517925	8359652	16.532	93.305	112.806
110.09500	517924	8359752	16.493	93.239	112.774
110.09600	517923	8359852	16.537	93.207	112.791
110.09700	517922	8359952	16.649	93.021	112.668
110.09800	517921	8360052	16.622	93.111	112.793
110.09900	517920	8360152	16.553	93.190	112.900
110.10000	517919	8360252	16.329	93.166	112.873
110.10100	517918	8360352	16.175	93.237	112.955
110.10200	517917	8360452	16.138	93.261	113.012
110.10300	517916	8360552	16.109	93.273	113.060
110.10400	517915	8360652	16.089	93.154	112.977
110.10500	517914	8360752	16.299	93.043	112.949
110.10600	517913	8360852	16.217	92.958	112.889
110.10700	517912	8360952	16.236	92.966	112.941
110.10800	517911	8361052	16.221	93.039	113.052
110.10900	517910	8361152	16.224	93.041	113.096
110.11000	517909	8361252	16.128	93.099	113.176

CHILDER CREEK EL 3265 GRAVITY DATA LINE 120

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
120.05600	522040	8355550	12.517	95.141	112.175
120.05700	522038	8355650	12.498	95.137	112.208
120.05800	522037	8355750	12.469	95.165	112.272
120.05900	522036	8355850	12.511	95.090	112.246
120.06000	522034	8355950	12.477	95.108	112.298
120.06100	522033	8356050	12.515	95.299	112.538
120.06200	522031	8356150	12.574	95.491	112.782
120.06300	522030	8356250	12.587	95.743	113.078
120.06400	522029	8356350	13.348	95.750	113.276
120.06500	522027	8356450	13.290	95.788	113.343
120.06600	522026	8356550	13.308	95.858	113.457
120.06700	522024	8356650	13.539	95.861	113.546
120.06800	522023	8356750	13.754	95.742	113.511
120.06900	522022	8356850	14.011	95.750	113.611
120.07000	522020	8356950	14.181	95.594	113.529
120.07100	522019	8357050	14.316	95.451	113.454
120.07200	522017	8357150	14.245	95.450	113.480
120.07300	522016	8357250	13.860	95.444	113.439
120.07400	522015	8357350	14.320	95.280	113.406
120.07500	522013	8357450	14.446	95.136	113.328
120.07600	522012	8357550	14.053	95.069	113.225
120.07700	522010	8357650	13.889	94.763	112.927
120.07800	522009	8357750	13.888	94.670	112.875
120.07900	522008	8357850	13.745	94.844	113.061
120.08000	522006	8357950	13.428	95.005	113.201
120.08100	522005	8358050	13.356	94.808	113.030
120.08200	522004	8358150	13.622	94.609	112.925
120.08300	522002	8358250	13.800	94.650	113.042
120.08400	522001	8358350	13.790	94.589	113.020
120.08500	521999	8358450	13.628	94.712	113.152
120.08600	521998	8358550	13.553	94.661	113.127
120.08700	521997	8358650	13.520	94.549	113.050
120.08800	521995	8358750	13.140	94.555	113.022
120.08900	521994	8358850	12.292	94.633	112.974
120.09000	521992	8358950	11.768	94.640	112.919
120.09100	521991	8359050	10.919	94.768	112.920
120.09200	521990	8359150	10.731	94.983	113.140
120.09300	521988	8359250	10.646	94.975	113.155
120.09400	521987	8359350	10.738	94.807	113.047
120.09500	521985	8359450	10.756	94.590	112.874
120.09600	521984	8359550	10.887	94.576	112.927
120.09700	521983	8359650	11.518	94.429	112.945
120.09800	521981	8359750	11.578	94.553	113.122
120.09900	521980	8359850	11.454	94.438	113.023
120.10000	521979	8359950	11.904	94.251	112.966
120.10100	521977	8360050	12.584	93.897	112.786

120.10200	521976	8360150	13.051	93.741	112.763
120.10300	521975	8360250	12.826	93.631	112.650
120.10400	521974	8360350	13.190	93.351	112.483
120.10500	521973	8360450	13.409	93.301	112.517
120.10600	521972	8360550	13.137	93.450	112.654
120.10700	521971	8360650	12.963	93.523	112.733
120.10800	521971	8360750	12.741	93.448	112.655
120.10900	521970	8360850	13.489	93.209	112.605
120.11000	521969	8360950	13.059	93.156	112.508
120.11100	521968	8361050	12.999	93.212	112.593
120.11200	521967	8361150	13.765	93.163	112.736
120.11300	521966	8361250	13.036	93.252	112.722
120.11400	521966	8361350	12.074	93.493	112.815
120.11500	521965	8361450	11.763	93.781	113.082
120.11600	521964	8361550	12.063	93.844	113.246
120.11700	521963	8361650	12.443	93.816	113.333
120.11800	521962	8361750	12.678	93.737	113.342
120.11900	521961	8361850	12.705	93.668	113.319
120.12000	521960	8361950	12.811	93.329	113.041
120.12100	521960	8362050	13.144	93.214	113.032
120.12200	521959	8362150	12.858	93.084	112.887
120.12300	521958	8362250	12.807	92.688	112.522
120.12400	521957	8362350	12.966	92.513	112.419
120.12500	521956	8362450	12.762	92.337	112.244
120.12600	521955	8362550	11.184	92.356	111.993
120.12700	521954	8362650	11.218	91.966	111.651
120.12800	521954	8362750	10.651	91.949	111.563
120.12900	521953	8362850	10.536	92.004	111.637
120.13000	521952	8362949	11.833	91.914	111.843
120.13100	521951	8363049	13.018	91.867	112.070

CHILDER CREEK EL 3265 GRAVITY DATA LINE 130

STATION	AMG mE	AMG mN	ELEVATION	OBSERVED G	BOUGUER G
130.12000	526054	8361910	9.571	92.930	111.992
130.12100	526052	8362010	8.791	93.138	112.086
130.12200	526051	8362110	9.330	93.121	112.216
130.12300	526049	8362210	9.475	93.299	112.465
130.12400	526048	8362310	10.055	93.374	112.695
130.12500	526046	8362410	9.861	93.367	112.690
130.12600	526045	8362510	9.897	93.350	112.721
130.12700	526043	8362610	9.760	93.344	112.729
130.12800	526042	8362710	10.182	92.994	112.503
130.12900	526040	8362810	9.917	92.787	112.285
130.13000	526039	8362910	10.010	92.630	112.187
130.13100	526037	8363010	9.597	92.729	112.246
130.13200	526035	8363110	9.615	92.533	112.094
130.13300	526034	8363210	10.511	92.103	111.881
130.13400	526032	8363310	10.430	91.958	111.762
130.13500	526031	8363410	10.776	91.686	111.598

130.13600	526029	8363510	10.509	91.633	111.534
130.13700	526028	8363610	10.600	91.653	111.613
130.13800	526026	8363710	10.780	91.723	111.759
130.13900	526025	8363810	11.377	91.630	111.824
130.14000	526023	8363910	11.673	91.554	111.848
130.14100	526021	8364010	11.716	91.487	111.830
130.14200	526020	8364110	12.910	91.221	111.840
130.14300	526018	8364210	13.762	91.132	111.960

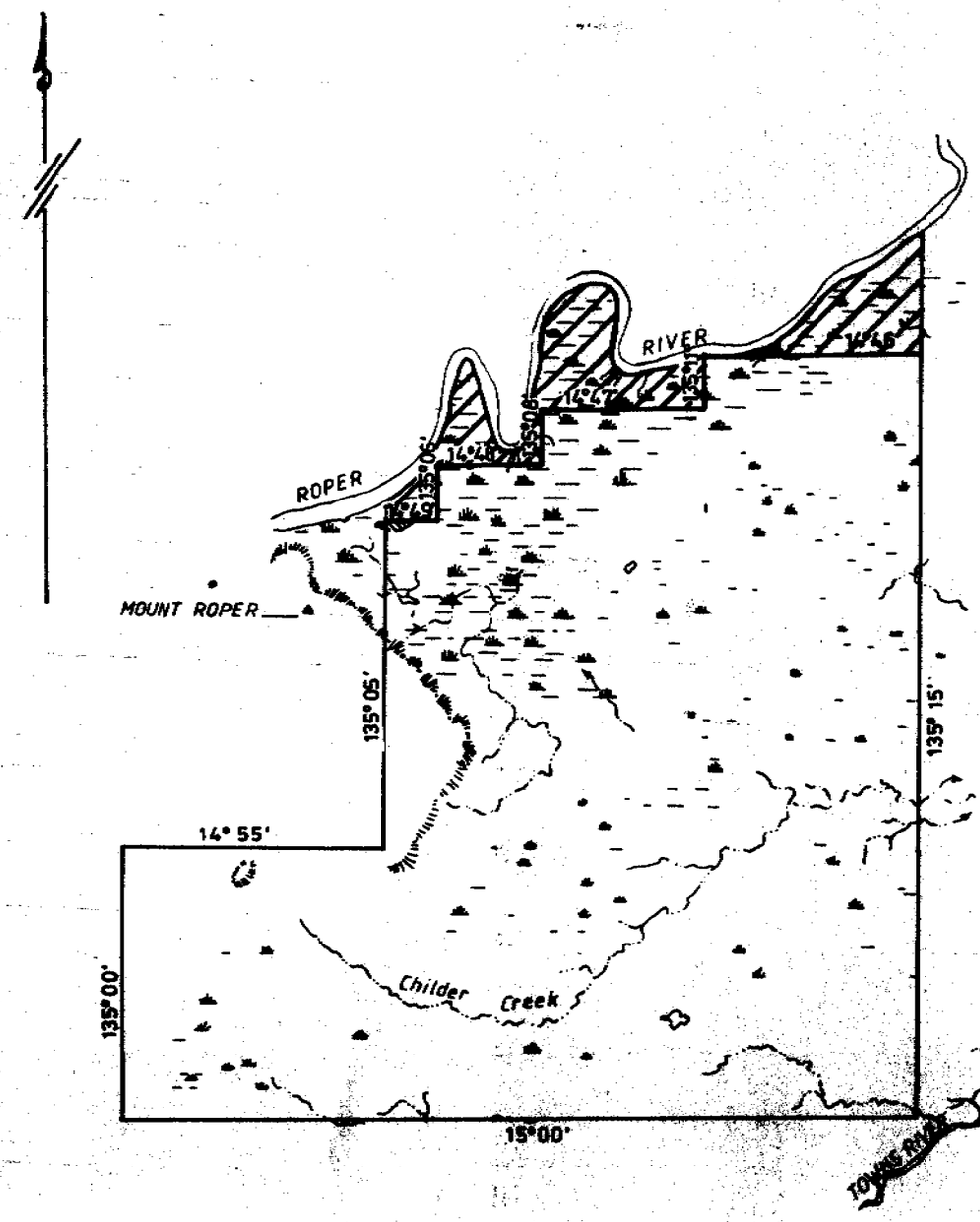
Appendix 5

Permanent Elevation Reference Pegs

All elevations are tied to the bench marks NMVG237 and NMVG238, and are Australian Heisht Datum values in metres.

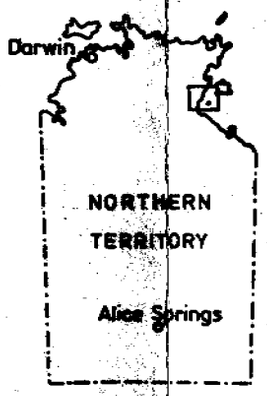
Station	Elevation
0.238 (NMVG238)	21.842
6.13000	28.969
6.14000	27.133
6.15000	28.900
6.16000	25.990
6.17000	28.888
6.18000	25.787
6.19000	26.985
6.20000	29.133
6.21000	31.637
6.22000	31.544
6.23000	36.587
NMVG237	36.381
6.24000	37.504
6.25000	40.147
6.26000	45.224
6.27000	44.236
6.28000	37.960
6.29000	33.323
6.30000	24.058
6.31000	21.908
7.01000	32.487
7.02000	21.675
7.03000	40.505
7.04000	48.053
7.05000	43.675
7.06000	31.754
7.07000	51.391
7.08000	50.413
7.09000	57.511
7.10000	74.842
7.11000	95.240
7.12000	77.003
7.13000	12.944
7.14000	10.148
7.15000	9.779
7.16000	14.057
7.17000	17.245
7.18000	8.295
7.19000	13.740

Station	Elevation
100.05000	14.074
100.06000	15.428
100.07000	15.023
100.08000	15.752
100.09000	14.798
100.10000	14.242
100.11000	12.859
100.12000	13.407
100.13000	12.572
100.14000	10.287
100.15000	10.694
100.16000	10.741
100.17000	13.436
100.17490	14.124
110.05000	14.074
110.06000	14.713
110.07000	15.663
110.08000	16.232
110.09000	16.327
110.10000	16.660
110.11000	16.418
120.05600	12.862
120.06000	12.789
120.07000	14.446
120.08000	13.833
120.09000	12.106
120.10000	12.254
120.11000	13.350
120.12000	13.163
120.13000	12.255
130.12000	9.729
130.13000	10.198
130.14000	11.896
130.14300	14.124



AREA TO BE RELINQUISHED

RETAINED AREA : 155 BLOCKS
512 · 585 sq. kms.



1:250,000 SHEET AREA

5 0 5 10 KILOMETRES

C R A EXPLORATION PTY LIMITED

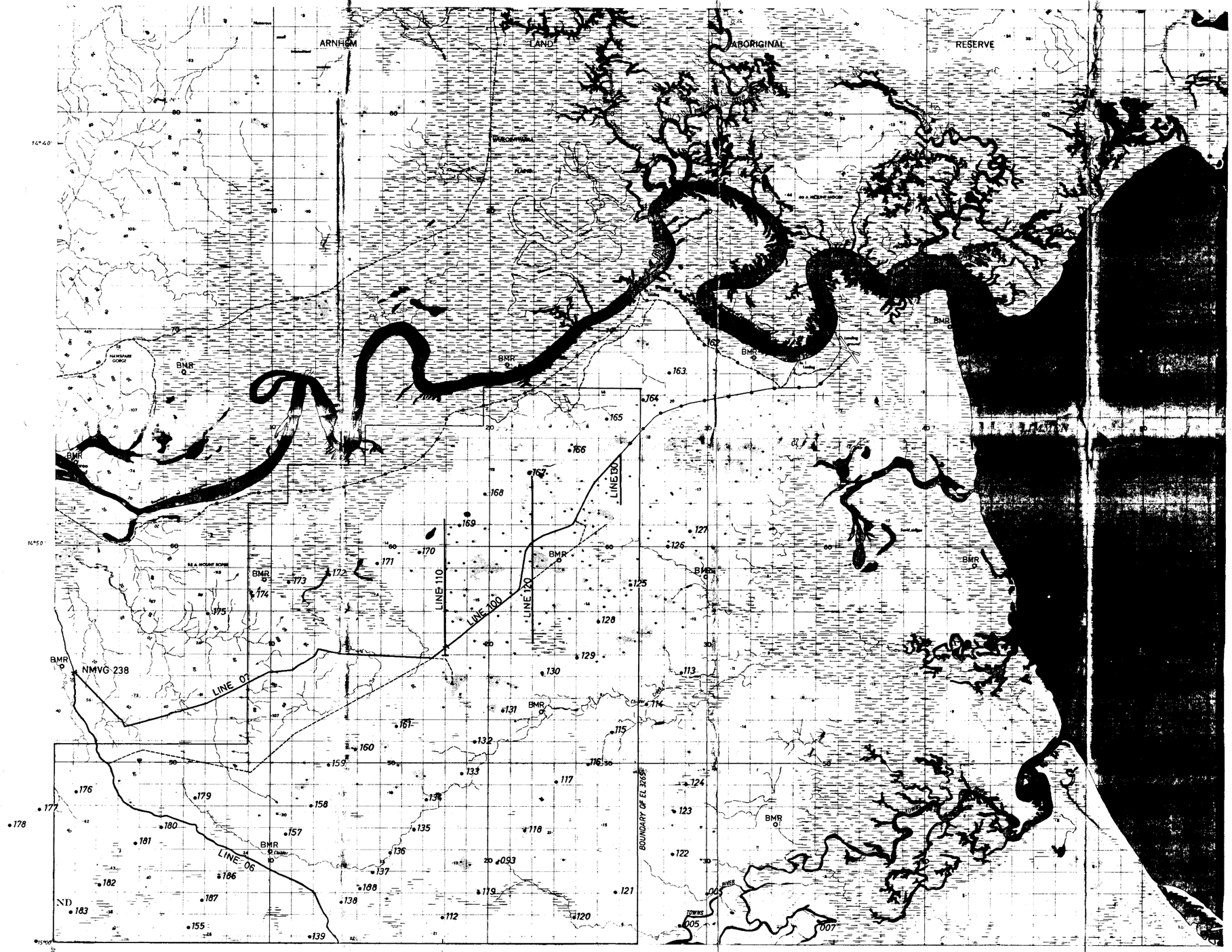
E.L. RENEWEL

CHILDER CREEK

E.L. 3265

Reference SD 53 - 11	ROPER RIVER	
Geologist W.H.J.	Scale 1: 250,000	Report No 130415
Drawn S.R.J.	Date AUG. 1981	Plan No NTd 2074

CR81/333A



TN

LEGEND

- DETAILED TRAVERSE
- 131 RECONNAISSANCE HELECOPTER STATION
- RECONNAISSANCE ROAD STATION
- BMR BMR REGIONAL STATION

NOTE: TOPOGRAPHIC BASE IS 'ROPER' - SHEET 5968 PRODUCED BY ROYAL AUSTRALIAN SURVEY CORPS. DISTRIBUTED BY DEPT. OF NATIONAL DEVELOPMENT.

SCALE 1:100,000

2 1 0 2 4 6 8 10 12 KM

CRA EXPLORATION PTY LIMITED

CHILDER CREEK EL 3265

GRAVITY STATION LOCATIONS

REFERENCE ROPER RIVER SD53-11	
SCALE 1:100,000	DATE DECEMBER 1983
AUTHOR GPJ	REPORT 130415
DRAWN SRJ	PLAN No NTd 3285

CRA 1/3378

500000E
135 00 00E
510000E
520000E
135 10 00E
530000E
135 20 00E
540000E
135 25 00E
14 42 30 55 00E
8370000N
8360000N
14 50 00S
8350000N
15 00 00S
42 00S

BOUNDARY OF EL 3265

LEGEND

+ GRAVITY STATION

NOTES

BOUGUER DENSITY 2·67 tm⁻³
CONTOUR INTERVAL 0·5 mgals.

0 2 4 6 8 10 KM
SCALE 1:100,000

NORTHERN TERRITORY
SURVEY LOCATION

CR85/333A

CRA EXPLORATION PTY LIMITED

CHILDER CREEK EL 3265

BOUGUER GRAVITY CONTOURS

REFERENCE ROPER RIVER SD53 - 11	
SCALE 1:100,000	DATE DECEMBER 1983
AUTHOR GPJ	REPORT 130415
DRAWN SRJ	PLAN No. NTd 3286