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EL 924

WIRRANGULA HILL

PROGRESS AND FINAL REPORTS FOR THE PERIOD 16/11/81 TO 15/6/82

Submitted by

CRA Exploration Pty Ltd
1982

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PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 4562

TENEMENT: E.L. 924

TENEMENT HOLDER: CRA Expl. Pty. Ltd.

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CRA EXPLORATION PTY. LIMITED

FIRST QUARTERLY REPORT FOR WIRRANGULA HILL E.L. 924, FOR THE PERIOD ENDING 15TH FEBRUARY, 1982.

AUTHOR: D.R. McBAIN

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DATE: 12TH FEBRUARY, 1982.

SUBMITTED BY: D.R. McBain

ACCEPTED BY:

11101

CONTENTS

1. SUMMARY

An evaluation of the available data showed the potential for Permian coal over large parts of the E.L.

A detailed gravity survey was undertaken to elucidate the basement configuration within the inferred basin. The interpretation of this data showed the basin structure to be more complex than previously inferred from the regional geophysical data.

A five hole drilling programme, partially based on the gravity interpretation, is due to begin in the next quarter.

2. CONCLUSIONS

2.1 Intersections of Permian coal in the vicinity of the E.L. by previous explorers indicates the probable development of Mt. Toondina coal measures over the E.L.

2.2 The intra-basin structure trends N.W. - S.E.

2.3 To the west of the gravity survey area, deposition of Mt. Toondina coal measures may be affected by basement configuration.

2.4 There are sufficient low density sediments for the development of the Mt. Toondina Formation over most of the area.

3. INTRODUCTION

Exploration licence 924 (Plan SAa 756) was taken out as part of the coal exploration programme of CRA Exploration Pty. Limited within South Australia. Previous boreholes in the vicinity have intersected Permian coal.

The tenement was granted to CRA Exploration Pty. Limited on 16th November, 1981 for a period of twelve months. This report details all work carried out by CRA Exploration Pty. Limited within this E.L. prior to 16th February, 1982.

4. WORK CARRIED OUT

4.1 Data Acquisition

Data pertaining to the broad area was acquired. No specific data was available for the licence area.

4.1.1 Regional geophysics

The regional gravity and aeromagnetic data was insufficient to detail the basin and its detailed structure.

4.1.2 Previous Exploration

Newmont - Dampier, Australian Selection and the S.A.D.M.E. have all drilled in the vicinity. Borehole logs were acquired for these holes.

4.2 Data Evaluation

All the available data acquired was evaluated. The evaluation was undertaken by a contract geophysicist, B. Finlayson. The report on the evaluation (CRAE report number 10909) is presented as Appendix I.

4.3 Geophysics

4.3.1 Gravity

It was a recommendation of the evaluation that a detailed gravity survey be undertaken in the southern portion of the E.L. In November - December, 1981 a detailed six line, 787 station, gravity survey was carried out by Solo Geophysics (Plan SAa1330). The gravity survey data for this "Nilpinna" grid is presented in Appendix II.

The interpretation of the gravity data shows the intra-basin structure of the basin to be more complex than previously interpreted from the regional data. The intra-basin structure is oriented N.W. - S.E. with a series of "highs" and "lows". The overall pattern is of deepening basement to the north-east. The basement in the western part of the survey area may have influenced the deposition of the Mt. Toondina Formation.

The interpretation was complicated in the north-eastern parts of the survey area by the possible presence of Cambrian dolomites.

The final report on the interpretation is awaited. It will be presented in the next quarterly report.

5. PROPOSED DRILLING PROGRAMME

A five rotary-mud borehole programme is due to commence in the next quarter (Plan SAa1331). Three of the boreholes fall within the detailed gravity survey area and their location is based on the interpretation of the gravity data. The remaining two boreholes, in the north of the E.L., were located from interpretation of the regional geophysical data.

The estimated borehole depths, estimated depths to the base of the Upper Permian and basement, and the rationale for the borehole locations is presented in Table 1.

D.R. McBAIN

DRM/lmc

TABLE 1

1982 ARCKARINGA BASIN DRILLING PROGRAMME - Wirrangula Hill E.L. 924 - Summary of Estimated Depths and Rationale behind Borehole locations.

Major coal seams located in Upper Permian

Borehole Sites	Estimated Borehole* Depths (M)	Estimated Depth to * base of Upper Permian (M)	Estimated Depth* to basement (M)	Rationale behind borehole location
AA	310	290	500	Investigate coal development on sloping S.W. margin of large basement depression. Obtain full stratigraphy to base of Upper Permian in western area of E.L.
B	320	300	850	Investigate coal development in eastern area of E.L., in area of shelving basement; located in depression to N.E. of fault. Obtain full stratigraphy to base of Upper Permian in eastern area of E.L.
C (i)	270	250	650	Investigate trough in S.W. corner of E.L.; on the downthrown side of fault, for coal development.
E	204	125	204	Investigate shallow coal development on northerly shallow sloping shelf in south of E.L. Provide information on L. Permian and basement.
G	270	270 (ii)	- (iii)	Investigate coal development, in the north west of E.L., within a small gravity low. Will determine potential of the north-western portion of the E.L.
H	300	300 (ii)	- (iii)	Investigate coal development, in the north of the E.L. on a northerly slope environment. Will determine potential of the northern portion of the E.L.
TOTAL	1404 (excl. Site C)			

* Depths interpreted from CRAE gravity data (except for G & H).

(i) Reserve borehole site, if meterage should allow.

(ii) Outside CRAE gravity survey area - 150 metres allowed for U. Permian section.

(iii) Outside CRAE gravity survey area - No basement depths calculated from regional data.

KEYWORDS

Warrina SH53-3, Arckaringa Basin, Cambrian, Permian, Cretaceous, Tertiary, Boorthanna Formation, Mt. Toondina Formation, Stuart Range Formation, Coal - black, Geophys-aeromag, Geophys - grav, Drill - rotary, Data review.

LOCATION

Warrina SH53-3 1:250,000

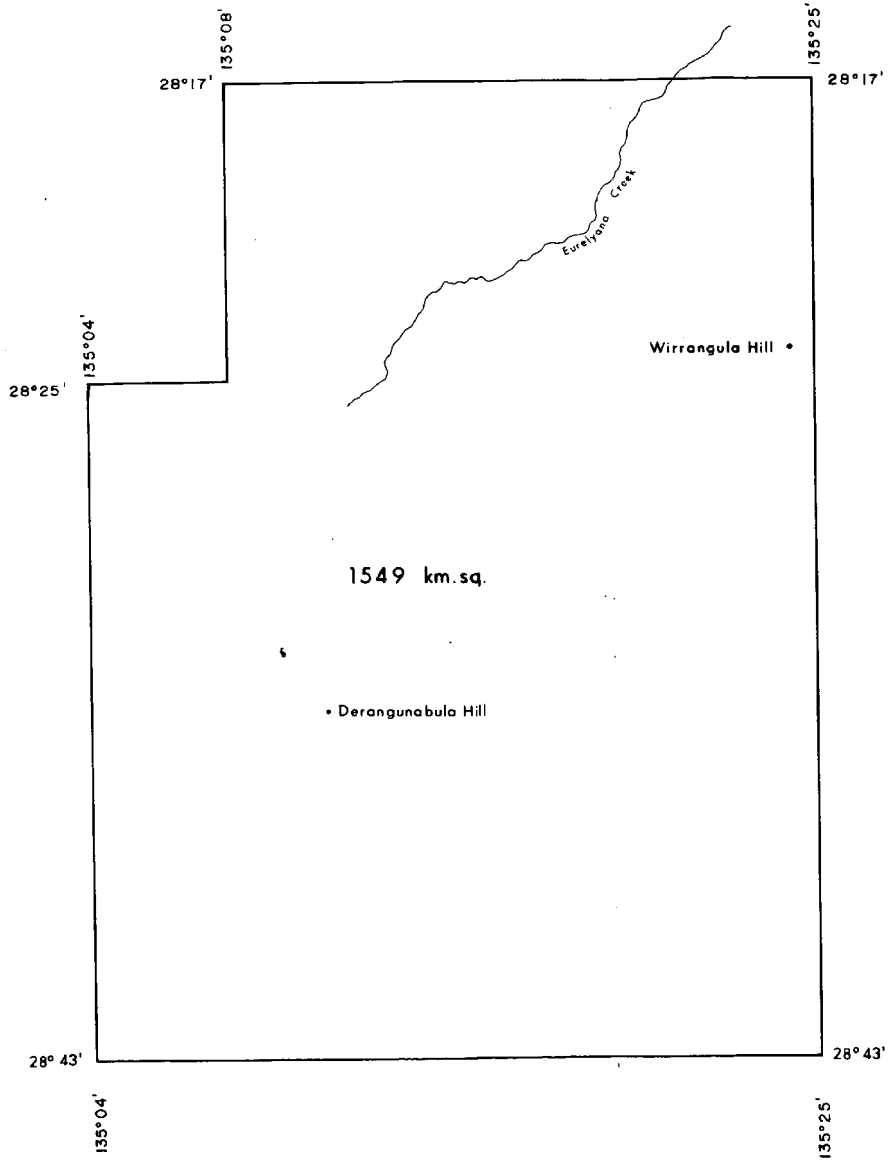
LIST OF PLANS

Plan no.	Title	Scale
SAa 756	E.L. 924 - Wirrangula Hill	1:250,000
SAa 1330	Wirrangula Hill E.L. 924 - Nilpinna Gravity survey grid	1:100,000
SAa 1331	Wirrangula Hill E.L. 924 - 1982 Drilling Programme - borehole location.	1:100,000

LIST OF APPENDICES

Appendix I - Wirrangula Hill E.L.A. 324/81, South Australia, evaluation of coal prospect

Appendix II - Nilpinna Gravity survey grid data, December, 1981.



C. R. A. EXPLORATION PTY. LIMITED

EL 924
WIRRANGULA HILL

Ref. WARRINA SH 53-3	
Scale 1:250,000	Drawn S.W.
Author D.McB.	Report No. 11101
Date MAY 1981	Plan No. SAa756

011

APPENDIX I

WIRRANGULA HILL E.L.A. 324/81, SOUTH AUSTRALIA,

EVALUATION OF COAL PROSPECT

012

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.A. 324/81

SOUTH AUSTRALIA

EVALUATION OF COAL PROSPECT

AUTHOR: B. FINLAYSON
(Consulting Geophysicist)

COPIES TO: CRAE LIBRARY

DATE: 13TH JANUARY, 1982

SUBMITTED BY: B. Finlayson

ACCEPTED BY:

10909

CONTENTS

1. SUMMARY

The Wirrangula Hill E.L.A. overlies an area in which a broad gravity low is defined by regional gravity data. Widely spaced aeromagnetic lines across the area indicate a gradually deepening section to the east broken by a series of basement ridges and crossed by basement faults oriented north westerly. A gravity survey to give greater resolution to a drilling programme is suggested. The subsequent drilling programme is sited to test the local gravity lows within the regional feature for the potential development of Permian coal measures.

2. INTRODUCTION

The outline of the Arckaringa Basin as it is presently known has been compiled from available seismic and drilling information, (Fig. 1) (Finlayson, 1981). The basin is an intracratonic basin of Permian age, the development of which appears to have been controlled by graben and half grabens formed on an orthogonal set of north west and south west oriented fractures.

This development may be a rejuvenation of an existing fracture system as the Arckaringa Basin overlies extensions of the ?Cambrian Eastern Officer Basin which have similar orientations.

Within the Arckaringa Basin, the Permian sedimentary section can be stratigraphically divided into a lower transitional marine to lacustrine section which has had glacial influence at the base and an upper restricted non marine, paludal to fluviatile section. These correspond to the Boorthanna and Stuart Range Formations in the former case and the Mount Toondina Formation in the latter.

Coal bearing strata occur in the upper parts of the Mount Toondina Formation for which the type section occurs at Mount Toondina on Oodnadatta 1:250 000 sheet approximately 30 kilometres north of the current E.L.A. Large subeconomic deposits have been proven in the Wallira - Phillipson Trough to the south of Coober Pedy 1:250 000 sheet and 'assumed' deposits have been outlined in the Mount Furner trough 60 kilometres north west of Wirrangula Hill. Within these deposits the coal bearing upper parts of the Mt. Toondina Formation are preserved in down faulted "subsidence" basins in which a low energy environment has been maintained.

Because Permian sequences within the Arckaringa Basin have lower densities than the underlying sequences (Table 1), these basins can on a regional scale be outlined by the

existing gravity coverage although at a mean spacing of one gravity station per 36 square kilometres, optimum targets are not clearly differentiated and small basins may be missed (Fig. 2).

The Wirrangula Hill E.L.A. covers one such regionally defined gravity low.

The aims of this report were to examine existing information in relation to the coal prospectivity of the lease application area and to suggest a programme of work which would test the prospect for two types of situation.

The first situation would be where conditions were considered to be optimum for development of Permian coal measures, the second situation was to suggest areas where a prospect could be outlined for shallow development of coal measures.

Within the E.L.A. boundary at the time of consideration no subsurface geological knowledge was available. Surface geology was from photo interpretation and available in preliminary format only.

Aeromagnetic cover is poor with five kilometre east west line spacing flown at 460 metre barometric above sea level.

Bouguer gravity as mentioned above consists of regional stations barometrically levelled and positioned from uncontrolled airphoto plots.

All interpretation had to be based on this meagre data plus extrapolation of drillhole information from outside of the lease area (Fig. 3).

3. WIRRANGULA HILL E.L.A. - PREVIOUS EXPLORATION

Newmont - Dampier exploration drillhole (Fig. 3) SR 14/2, two kilometres east of the E.L.A. boundary intersected brown coal from 129.08 metres to 130.75 metres with a possible core loss from 99 to 129.08 metres (Wright, 1979).

This hole was sited on a gravity and magnetic high in the search for Roxby Downs type base metals and was abandoned when estimates of depth to basement were not considered encouraging. The position is unfavourably sited in relation to coal prospectivity and the above mentioned intersection is thus encouraging for the development of thicker accumulations within down thrown basins in the area.

Australian Selection rotary drillhole MU-2 12 kilometres west of the E.L.A. boundary also intersected one metre of brown coal from 84.5 to 85.5 metres again with probable core loss (Mason, 1975).

This hole was targeted adjacent to a gravity low and the prospectivity is thus untested but encouraging. Australian Selection drilled a fourteen hole percussion programme to the west and south of the present E.L.A. without testing the gravity depressions. Their programme confirmed that the gravity highs have poor prospectivity.

4. INTERPRETATION

To assist in the interpretation of available data a crude structural plan was drawn (Fig. 4), based on the sparse aeromagnetic data. On this was outlined areas of suspected uplifted basement. This was drawn by enclosing zones with a similar frequency response and by estimating the depth by half slope methods from the contours on two anomalies d_1 and d_2. A proposed lineament drawn through collinear inflexions in the contour data is also indicated. This may represent a basement fault.

The existing gravity coverage outlines a broad gravity low across the southern half of the E.L.A. (Fig. 3). Comparison with the aeromagnetic data suggests a model for this gravity low in which a gradually thickening section toward the east is bounded in the west by a north westerly fault system (Fig. 4). The existing data both gravity and magnetics is insufficient to detail this basin and the extensions of gravity cover over the southern half of the lease (area A, Fig. 3) is recommended on a semi-regional spacing of 500 metre spaced stations on lines oriented north easterly five kilometres apart perpendicular to the proposed basin structures (approximately 400 stations barometrically levelled). Because of the aerial extent of the gravity low, there is potential in this area for a large deposit and reconnaissance drilling central to the regional gravity low is recommended early in an exploration programme at drill locations 1* and 2* (Figs. 3 and 4).

Drillhole 1* is the first priority hole in a section which appears most favourable for development of Permian coal measures. At least 100 metres of Mesozoic cover is expected in this hole based on widely scattered drillhole information outside of the lease area within the knowledge of the author.

Drillhole 2* is the second priority hole in a position where magnetic basement is indicated to be shallow and where gravity indicates a prospect of shallow development of coal measures.

The northern half of the lease (area B, Fig. 3) covers a regional gravity high which is in part interpreted as due to a change in basement type. This trends south westerly and may mask local gravity lows which could contain small

subeconomic coal deposits. Extensions of the semi-regional coverage to define such local lows in this area at a later stage is recommended if exploration of the southern half of the lease is encouraging. Reconnaissance drilling of the gravity lows is recommended.

Drillhole 3* is sited to test a small low in the northern portion of the lease as is drillhole 4*. Drillhole 5* is sited on a small low in a deeper portion and is expected from the general concept of northward thickening Mesozoic to locate Permian section at a depth of at least 150 metres.

In addition, aeromagnetic coverage of the southern half of the lease should be considered as a second stage exploration programme. Because the inferred prospective basins are likely to be fault controlled, a detailed aeromagnetic survey would give valuable information on the structure of the area. Coverage at 500 metre line spacing of the southern half of the lease is suggested with flight orientation north easterly perpendicular to the indicated magnetic features or at such a direction as indicated by the proposed gravity survey to be of greatest assistance in resolving structural features.

5. PROPOSED EXTENSIONS

The accompanying Fig. 3 outlines a proposed extension to the licence application subject to availability of ground.

The area includes the Australian Selection hole MU-2 (which intersected one metre of Permian Coal) and covers the majority of the regionally defined gravity low.

The extension to the south of Stuart Range Bore No. 2 covers a similar small low in which there is a possibility of locating a small deposit (of the order of 100m. tonne).

Within this area a single gravity traverse south from Stuart Range Bore No. 2 at a spacing of 500 metres with a follow up drillhole (drill location 7*) within the gravity low is recommended. A similar traverse south west from MU-2 to define the gravity low adjacent to that drillhole with a subsequent test drillhole is further recommended (drill location 6*).

Within the proposed extension two additional reconnaissance drillholes are recommended based on the existing gravity. Drill location 9* is to test extension of the main gravity low to the south east and drill location 8* to test a small depression to the south of the existing boundary.

* Recommended drillhole reference, table 2. Positions subject to completion of gravity survey (Figs.3 and 4).

6. SUMMARY OF RECOMMENDATIONS

1. Within outlined area A, Fig. 3 a semi regional gravity grid of approximately 400 barometrically levelled stations 500 metres apart on lines five kilometres apart oriented 045°.

2. Extension of application area.

3. Reconnaissance nine hole drilling programme.

B. FINLAYSON

BF/pw

TABLE 1 - DENSITY INFORMATION FROM THE ARCKARINGA BASIN

Stratigraphy	Density (tonne/m³)
Tertiary	1.9 - 2.2
Cretaceous	2.1
Permian	
- Mt. Toondina	2.1 - 2.2
- Stuart Range	2.3
- Boorthanna	2.4
Cambrian - I	2.71
- II	2.75
- III	2.4 - 2.5
- IV	2.2
Proterozoic	2.66

TABLE 2 - SUMMARY OF RECOMMENDED DRILLHOLES
- ESTIMATED DEPTH TO TOP OF PERMIAN (By broad interpolation from surrounding areas)

1. 100 - 150 metres
2. 100 metres
3. 120 metres
4. 150 - 200 metres
5. 150 - 200 metres

REFERENCES

Finlayson, B., 1981. Exploration of the Arckaringa Basin South Australian Department of Mines and Energy Report Book 81/51. Unpub.

Mason, M.G., 1975. Australian Selection E.L. 184 South Australian Department of Mines and Energy open file env. 2556. Unpub.

Wright, R.G., 1979. Newmont - Dampier E.L. 340 South Australian Department of Mines and Energy open file env. 3091.

KEYWORDS

Warrina SH53-3, Arckaringa Basin, Cambrian, Permian, Cretaceous, Tertiary, Stuart Range Formation, Mt. Toondina Formation, Boorthanna Formation, Coal - black, Geophys-gravity, Drill-rotary.

LOCATION

Warrina SH53-3 1:250 000

LIST OF FIGURES

Fig. No.	Title	Scale	Plan No.
Fig. 1	Wirrangula Hill E.L.A. Arckaringa Basin - Geophysical Interpretation	1:1 000 000	SAal115
Fig. 2	Wirrangula Hill E.L.A. - Bouguer Gravity	1:1 000 000	SAal252
Fig. 3	Wirrangula Hill E.L.A. - Summary of Information	1: 250 000	SAal253/A
Fig. 3a	Aeromagnetic Contours	1: 250 000	SAal289
Fig. 4	Wirrangula Hill E.L.A. - Interpretation of Existing Data	1: 250 000	SAal107

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Appendix I Australian Selection E.L. 184 Drill Logs

Appendix II CRAE Memorandum - subject Newmont - Dampier SR-14/2

APPENDIX I
AUSTRALIAN SELECTION E.L. 184 DRILL LOGS.

4.3 Hydrogeology

Large volumes of brackish water have been located in the Algebuckina and Cadnaowie coarse sand units. This groundwater sub-basin of the Great Artesian Basin has been described in detail in report by Mason (1975) and will not be further discussed here.

4.4 Coal

Carbonaceous fragments were intersected in almost all holes from the Cretaceous Cadnaowie to the Permian Mt. Toondina Formation. However, coal seam intersections were confined to MU-1, MU-2, MU-3, MU-8, MU-9 and MU-13.

Coal in the Mt. Toondina Formation was confined to MU-3 (less than 50mm seams below 125 metres) and MU-2, where a metre seam was intersected from 81.5 to 82.5 metres; a 0.2m seam at 86.5 metres, and seven 50mm seams were intersected down to 101 metres. Below this the sediments were not carbonaceous. Petrographic analysis of coal from the interval 84-86 metres indicated the coal was principally vitrinite with sub-ordinate amounts of granite and inertinite. The coal was low rank with an estimated violarite matter of 55%, calorific value of 12,500 (Btu/lb) and low ash content. Details appear in Appendix 2.

The metre intersection in MU-2 was the only Permian intersection of note. This intersection is

surrounded by barren holes MU-13, MU-14, MU-3, MU-4, MU-5 and Stuart Range No. 2. Therefore, the possibility of an economic development of coal is confined to the northeast, where drilling indicates the Permian is greater than 100 metres below surface.

Coal in the Cadnaowie Formation was much more common and widespread. Intersections included:

MU- 1	minor seam at 41 metres
MU- 3	1 metre seam 42-43 metres 4 0.05 to 0.2 metre seams 43-47 metres few minor seams down to 66 metres
MU- 8	minor seams 66 to 80 metres; possibly in the Jurassic Algebuckina Sandstone
MU- 9	minor seam 30-52 metres
MU-13	0.5 metre seam 28-29 metres 1 to 2 metre seam 56-58 metres 1 metre seam 59-60 metres 0.5 metre seam 66-67 metres minor seam 88-89 metres, probably in the Jurassic Algebuckina Sandstone

Of these, the intersections in MU-3 and MU-13 were significant. These may in fact be the same horizon and continuous. However, the minor intersections in MU-1 was not repeated in MU-14 and indicates a lack of continuity of coal seams in the Cadnaowie unit.

Coal has previously been intersected in the Cadnaowie by Oilmin further to the north. The quality was poor, as is the case in this area.

Three samples from MU-13 were submitted to Robertson Research for analysis. See Appendix II. Intervals

ested were from 32-34 metres, 56-58 metres and 59-60 etres. All samples were similar being almost entirely mposed of vitrinite, low rank, an estimated 55% olatile matter, caloritic value of 12,400 Btu/lb and l low ash content.

NCLUSIONS

e top of the Mt. Toondina Formation varies from 62 106 metres below surface generally becoming deeper the north.

al was intersected in the Mt. Toondina Formation y as a 1 metre seam in MU-2. Surrounding holes dicate that the intersection is of no economic gnificance.

al was intersected in MU-3 and MU-13 in the Cretaceous dnaowie unit. This suggests a significant area derlain by coal greater than 1 metre thick. However, e quality is poor and no economic deposit is nsidered present.

ere is little chance of significant coal deposits ear the perimeter of E.L. 184.

COMMENDATION

o further work is warranted.

M. G. MASON
SENIOR GEOLOGIST

MV 14

LOG OF PERCUSSION DRILL HOLE

PROSPECT: MURLOOCOPPIE COAL

MURLOOCOPPIE 1:250,000

R.L. COLLAR: .....

LOCATION: .....

CO-ORDS: 2827 4277 AS FOR MU-1

INCLINATION: 90°

DIRECTION: .....

OVER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
	Sandy Clay Weathered Shale + Calcareous Fossil Fragments						
BALOOK SHALE	Steel-Grey-Brown Weathered SHALE						
	Dark Blue-Grey Silty SHALE						
	Medium Grained Transparent QUARTZ + minor White Feldspathic SAND + minor above	10m					
	As above but Fine Grained						
	Fine - Medium Grained Transparent Quartz + minor White Feldspathic SAND + minor mudstone						
	Medium + Coarse Grained Transparent QUARTZ + White Feldspathic SAND + grey minor SHALY SILTSTONE + Very minor mudstone	20m					
	Fine Grained White Quartz SAND + Light Grey Clay						
	Medium - Coarse Grained Transparent + White QUARTZ + White Feldspathic SAND + White Clay	30m					
	Medium - Coarse Grained Transparent + White QUARTZ + White Feldspathic SAND Very clean						
	Becoming fine - medium - coarse grained	40m					
	As Above + Medium Grey Shaly Siltstone						
	As Above - predominantly Shaly - Siltstone						
	Coarse - Fine Grained Transparent + White QUARTZ SAND - Very Clean	50m					
	As Above + V. fine grained green - grey EQUIGRANULAR TUFF?						
	Medium - Fine Grained QUARTZ SAND + White Clay						
	Fine Grained QUARTZ - SAND						
	Fine - Medium Grained Transparent Quartz + minor White Feldspathic SAND.	60m					
	As Above + equal quantities of mid grey SHALY SILTSTONE						
	Fine Grained Transparent QUARTZ SAND	70m					
ALGEBUCKINA SANDSTONE	Very Fine Grained Transparent QUARTZ SAND + Light Brown Clay						
	As Above + Light Grey Fissile Shale + Brown Clay + extremely minor flakes of carbon	80m					
	Grey Shaly Siltstone + very fine grained Transparent QUARTZ SAND						
MT TOONDINA FORMATION	Light Grey Fissile SHALE + Brown Clay + minor Fine Grained SAND	90m					
	Light Grey Fissile Siltst + Brown Clay + Calcareous fossil Fragments	100m					
	FOR WATER INFORMATION SEE MU-1	110m					

Flow at Bottom of Hole @ 5-6,000 gph

DRILL TYPE: PERCUSSION

DRILLER: D. BIGSTON

DATE DRILLED: 23/5/15

LOGGED: B.J.U.

026

MU 13

PROSPECT: MURLOOCOPPIE COAL

R.L. COLLAR .....

LOCATION: ..... MURLOOCOPPIE 1:250,000

CO-ORDS ..7807.....4407.....

INCLINATION: -50°

DIRECTION: .....

WATER OUT	DESCRIPTION	SCALE METRES	LOG	GEOCHEM (ppm)			REMARKS
					Cu (ppm)	Zn (ppm)	
	Buff Silt + Gypsum						
	Light Brown - Buff Blocky SHALE						
	Dark Grey Blocky SHALE						
	Becoming Fresher + More Fissile	10 m					
	Blue-Steel Grey Fissile Shaly-SILTSTONE + Thin Band of white Aphanitic Quartzite	20 m					
	Medium - Coarse Grained Transparent QUARTZ + minor FELDSPATHIC SAND + minor shale contamination from above + very minor pegmatitic segregations of white soft talc	30 m					
	As Above + Light Grey SANDY SILTSTONE						
	As Above + Mid - Dark Grey Blue Grey SHALE						
	Medium - Coarse Transparent QUARTZ + White FELDSPATHIC SAND + Very minor Muscovite	40 m					
	+ minor Muscovite	50 m					180 ft of Casing lowered for pastoral bore.
	1-2m Black Crumbly Woody Weak Coal						
	1m Black Woody Coal	60 m					
	Black Dull Woody Blocky Crumbly Weak COAL						
	Medium - Coarse FELDSPATHIC SAND with Buff Clay	70 m					
	Coarse Grained Transparent QUARTZ + White FELDSPATHIC SAND						
	As Above - medium grained						
	Medium - Coarse Grained Transparent QUARTZ + minor FELDSPATHIC SAND	80 m					
	Coarse Grained Transparent QUARTZ + Minor FELDSPATHIC SAND						
	As Above - med - fine - Coarse Grained						
	Medium - Coarse Grained Transparent QUARTZ + FELDSPATHIC SAND + Fine Grained	90 m					
	Medium - Coarse Grained Transparent QUARTZ + FELDSPATHIC SAND.						
	Light Grey Fissile SHALY SILTSTONE + Medium - Coarse Grained Transparent Quartz + Feldspathic SAND	100 m					
		110 m					

CADNA-OWIE FORMATION

BULLOCK SHALE

ALBURGINA SANDSTONE ?

Flow @ 6,000 gph 5,000 ppm

RIVERTON BEDS

DRILL TYPE: .....

DRILLER: D. BIGSTON.

DATE DRILLED: 21st May

LOGGED: B.S.O.

SCALE 1:500

- 027

MV 12

LOG OF PERCUSSION DRILL HOLE

PROSPECT: MURLOOCOPPIE COAL

R.L. COLLAR .....

LOCATION: ..... MURLOOCOPPIE 1:250,000 CO-ORDS ..2715..4394.....

INCLINATION: 90°

DIRECTION: —

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm) Cu (ppm)	Zn (ppm)	REMAR
	Brown Soil + Rubble					
	Medium Grey weathered SHALE + Gypsum + White Aphanitic Quartzite					
	Dark Grey Blocky Shale + Gypsum	10 m				
	Dark Grey - Black Fresh Fissile SHALE Becoming Silty SHALE	20 m, 30 m				
	Fine - Medium Grained Transparent QUARTZ SAND + Grey Shale Contamination? (from above)					
	Medium + Coarse Grained Transparent Translucent Quartz SAND	40 m				+ Very minor blue clay
	Medium Grained Transparent QUARTZ + White FELDSPATHIC SAND	50 m				+ Shale Contamin
	Fine Grained Transparent + Translucent QUARTZ + minor White FELDSPATHIC SAND + muscovite + muscovite					
	Medium - Coarse Grained Transparent + Translucent Quartz + minor White FELDSPATHIC SAND + minor MUSCOVITE	60 m, 70 m				
	As Above Fine - Medium Grained	80 m				
	Medium - Coarse Grained Transparent Translucent Quartz + minor Feldspathic SAND.					
	Fine Grained Transparent QUARTZ SAND + White Clay + minor Framboidal Pyrite Becoming very fine grained	90 m				
	Medium - Coarse Grained Very Clean Transparent QUARTZ SAND + considerable Blk contamination					
	As Above + Dark Grey Fissile SHALY SILTSTONE	100 m				
	Dark Grey Fissile SHALY - SILTSTONE					
	As Above + Fine Grained QUARTZ SAND + minor Quartz SAND + equal quantities of SAND + SHALE	110 m				

TOP OF HOLE CAVED IN SO NO MEASUREMENT OF STATIC WATER TABLE MADE

BULLDOG SHALE

CADNI-OWIE FORMATION 3800ppm 4000ppm 3800ppm

ALGEBUCINA SANDSTONE

MT TOONDINA FORMATION

FLOW @ 3-4,000gph.

DRILL TYPE: PERCUSSION DATE DRILLED: 20/MAY/77

DRILLER: BILSTON LOGGED: B.J.U.

SCALE 1:500

L - 028

MJ 11

SPECT: MURLOCCAMPIE COAL

WARRINA 1:250,000

INCLINATION: 90°

LOCATION: ..... CO-ORDS: 3141 4141 DIRECTION: —

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
	BULLDOG SHALE: Buff Weathered Fissile SHALE	10 m					
	BULLDOG SHALE: Dark Grey - Black SILTSTONE						
WATER TABLE >100ft below surface	ALGEBUCKINA SANDSTONE — CADNA-OWIE FORMATION: Fine Grained Transparent QUARTZ SAND + minor white FELDSPATHIC SAND; Medium Grained Transparent QUARTZ + minor FELDSPATHIC SAND	20 m					
	As Above but coarse grained						
	Medium Grained Transparent QUARTZ + minor white FELDSPATHIC SAND; +Buff Clay	30 m		45	35	55	Pb 65
	Medium - Coarse Grained Transparent QUARTZ + minor FELDSPATHIC SAND; +minor black flint						
	Fine - Medium Grained Transparent QUARTZ + minor white FELDSPATHIC SAND; +buff Clay; +scoriaceous rhyolite tuff?	40 m					
	Medium - Coarse Grained Transparent QUARTZ SAND						
	Fine Grained Transparent QUARTZ + minor white FELDSPATHIC SAND						
	Medium Grained Transparent QUARTZ SAND						
	Coarse Grained Transparent QUARTZ + minor FELDSPATHIC SAND						
	Medium - Fine Grained Above	50 m					
	Fine Grained Above						
	Fine - Medium Grained Transparent QUARTZ + minor FELDSPATHIC SAND						
	Medium - Coarse Grained Transparent QUARTZ + minor white FELDSPATHIC SAND; +minor mica	60 m					
	Fine Grained Above						
	As Above + Dark Grey SHALE + minor Pyrite						
FLOW @ 3,000 g.p.h. > 5,000 p.p.m.	MT. TOONDINA FORMATION: Dark Grey Weathered Greasy SHALE	70 m					
	Light Grey-Green, Fissile, Fresh SHALE	80 m					
		90 m					
		100 m					
		110 m					

BOTTOM OF HOLE 117m.

DRILL TYPE: DIAMOND

DRILLER: D. BICKTON

DATE DRILLED: 19 Nov - 1 Dec 19

LOGGED: [illegible]

SCALE 1:500

DPG No: [illegible]

029

MV 10

SECT: MURLOOCOPPIE COAL

INCLINATION: 90°

TION: ..... CO-ORDS: WARRINA SHEET 1:250,000 3124 4252 DIRECTION: T

WAI CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
BULLDOG SHALE	Dark Grey – Black Fissile SHALE + Gypsum						
CADNA-OWIE FORMATION ≈ 5,000 g.p.m. > 500 p.p.m.	Mid-Grey SANDY-SILTSTONE with Carbonaceous Matrix	10 m					
	Medium – Coarse Grained Clean Transparent QUARTZ SAND + very minor pyrite + coal	20 m					
	Medium – Fine Grained Clean – Transparent QUARTZ SAND + Buff Clay						
	Medium Grained Clean Transparent QUARTZ + White FELDSPATHIC SAND	30 m					
	Coarse + Medium Grained Very Clean Transparent QUARTZ + White FELDSPATHIC SAND	40 m					
	Medium – Fine Very Clean Transparent QUARTZ + White FELDSPATHIC SAND						
	Coarse + Medium Grained Transparent QUARTZ + White FELDSPATHIC SAND – very clean	50 m					
		60 m					
MT. TOONDINA FORMATION ≈ 7,000 g.p.m. > 5,000 p.p.m.	As Above + Dark Grey – Black Shale Fragments						
	Equal quantities of medium – coarse grained SAND as above + Dark Grey Crumbly Shale + Clay						
	Dark Grey – Black SHALE + Clay with Sand Contamination? from above	70 m					
	Medium Grey Weathered SHALE + CLAY becoming medium-light grey						
	As Above + Medium Grained Transparent Clean QUARTZ SAND – Contamination?						
	Medium Grey SHALE + minor Clean transparent QUARTZ SAND	80 m					
	Medium – Dark Grey SHALE + Clay + Minor Medium Grained Transparent Clean Sand – (Contamination?)						
	Shale + Clay as above + equal quantities of Fine – Medium Grained QUARTZ SAND						
	Medium – Light Grey SHALE + CLAY + Equal quantities of Fine – Medium Grained Transparent QUARTZ SAND	90 m					
	Increasing quantity of sand						
	Medium Grey Fissile SHALE + Medium Grained Transparent QUARTZ SAND (Contamination?)						
	Medium Grey Fissile SHALE	100 m					
		110 m					
	Dark Grey – Black Carbonaceous Fissile SHALTY SILTSTONE						

Bottom Of Hole 117m

DRILL TYPE: SCHRAM DATE DRILLED: 18th May 1977

DRILLER: BILSTON LOGGED: B.J.U.

SCALE 1:500 DRG Nº HS 20-11

E - 030

MU 9

LOG OF PERCUSSION DRILL HOLE

R.L. COLLAR: .....

INSPECT: MURLOCCOPPIE COAL

INCLINATION: 90°

LOCATION: .....

WARRINA 1:250,000
CO-ORDS: 32.57 .. 42.10

DIRECTION: —

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
	Buff Dust + Gypsum						
	Buff + Yellow Medium Grained Weathered Clayey SANDSTONE						
	becoming less weathered & less clayey	10 m					
	As Above + minor grey SHALE + pink fine Grained SANDSTONE						
18/5/76	Coarse Grained Transparent & Medium Grained Yellow QUARTZ SAND + minor white FELDSPATHIC SAND						
	As Above + Light Grey SANDY SILTSTONE	20 m					
	Medium + Coarse Grained Transparent QUARTZ SAND + minor FELDSPATHIC SAND - very clean						
	Fine + Medium Grained Transparent QUARTZ + minor white FELDSPATHIC SAND — very clean						
	+ very minor friable black coal	30 m					
	+ 5-7% Friable black coal						
	As Above + 20% Medium Grey + minor black friable coal SANDY SILTSTONE						
	Fine - Medium Grained Transparent QUARTZ + minor WHITE FELDSPATHIC SAND + 2% black coal						
	+ very minor black coal	40 m					
	+ minor very friable black coal						
	Fine Grained Transparent QUARTZ + minor white FELDSPATHIC SAND + very minor black coal						
	Fine - Medium Grained Transparent QUARTZ + minor white FELDSPATHIC SAND						
	As Above + 15% Black Graphitic Shale						
	Fine Grained Transparent QUARTZ SAND + minor muscovite	50 m					
	+ minor black friable coal						
	Fine - Medium Grained Transparent QUARTZ SAND						5% interstitial
	+ minor black friable coal						
	Fine - Medium - Coarse Grained Transparent QUARTZ SAND + Medium - Dark Grey Graphitic SHALE	60 m					+ unconformity
	Fine - Medium Grained Transparent QUARTZ SAND - Medium - Dark Grey Graphitic SHALE						
	GRANITE - grey. c.g. 40% quartz 30% felds. Rest biotite. (clays due to weathering		+ + +				
	BOTTOM OF HOLE 65m.	70 m					
		80 m					
		90 m					
		100 m					
		110 m					

ESTIMATED WATER FLOW 8,000 g.p.h. >5000 ppm

CADNA-OWIE FORMATION

PROT. ALGEBUCHINA SANDSTONE

DRILL TYPE: SCHRAM

DATE DRILLED 17th MAY..

DRILLER: BICKTON.....

LOGGED: BJ

031

MJ 8

LOG OF PERCUSSION DRILL HOLE

PROSPECT: MURLOOCOPPIE COAL

R.L. COLLAR: .....

WARRINA SHEET 1:250,000

INCLINATION: 90

LOCATION: ....

CO-ORDS: 3136 4207

DIRECTION: ---

WATER FLOW 2/5,000gph. SALINITY > 5,000ppm.

17/5/75

WATER CUT		DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
	BULLDOG SHALE	Medium Grey Fissile Fresh SHALE CLAYSTONE						
		Medium Grey SILTSTONE						
	CADNA-OWIE FORMATION	Medium-Coarse Grained Transparent QUARTZ + minor white FELDSPATHIC SAND	10 m					
		Medium-Fine Grained Transparent QUARTZ + minor white FELDSPATHIC SAND						
		Medium-Coarse Grained Transparent QUARTZ + minor white FELDSPATHIC SAND + Medium Grey Clayey Siltstone	20 m					
		+ minor siltstone						
		As Above + Black Carbonaceous Shale + minor Muscovite						
		Medium + Fine Grained Transparent QUARTZ + minor FELDSPATHIC SAND	30 m					
		Fine Grained Transparent QUARTZ + minor FELDSPATHIC SAND + white SANDY SILTSTONE	40 m					
		Medium Grained Very Clean Transparent QUARTZ SAND + minor spherulitic pyrite						
		Medium + Coarse Grained Transparent QUARTZ + minor FELDSPATHIC SAND	50 m					
		+ minor spherulitic pyrite						
		+ minor pyrite	60 m					
	ALGEBUCKINA SANDSTONE	Fine Grained Light Grey QUARTZ SAND + very minor very fine grained coal fragments + minor fine grained coal fragments + minor mica + 5% medium-coarse grained fragments of black coaly coal + minor muscovite	70 m					
		+ minor soft brown-black crumbly coal + 5-10% pyrite + medium grey Shaly Siltstone	80 m					
	MT. TOONDINA FORMATION	Medium Grey Crumbly SHALY SILTSTONE - very little sample	90 m					
		Dark Grey Graphitic Crumbly SHALY SILTSTONE + minor pyrite + muscovite + muscovite + minor very fine grained fragmental	100 m					
			110 m					

DRILL TYPE: PERCUSSION

DATE DRILLED: 16th MAY 75

DRILLER: BILSTON

LOGGED: B.J.V.

SCALE 1:500

032

MU7

LOG OF PERCUSSION DRILL HOLE

PROSPECT: MULGA DOWNS COAL

R.L. COLLAR: .....

INCLINATION: -90°

LOCATION: ..... CO-ORDS: ..... DIRECTION: .....

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
	BULLOO SHALE: CLAY - Khaki. 25% silt minor m.g. sand. 15% mica. Rest clay.						50% gypsum 20% gypsum
	CANOWIE FORMATION: SAND - pale yellow. 20% c.g. 45% m.g. Rest F.g. angular quartz 5% Feldspar	10 m					
	SAND - v. pale yellow. 10% mica. minor clay. 20% silt. some Feldspar 10% c—m.g. Rest c.g. subangular quartz.						
	COARSE SAND. yellow. 35% c.g. 30% m.g. minor silt clay & mica Rest F.g sand. Subangular. Iron oxide coated surface. Limit of oxidation?	20m					
	MEDIUM SAND. white. 5% mica. subangular. 35% m.g. minor c.g. Rest F.g. quartz. 10% white Feldspar.	30m					
	ALGEBUCKINA SANDSTONE: MEDIUM SAND - white. minor mica. 10-20% Kaolin. 60% F.g. Rest m.g. subangular quartz. minor opaline quartz	40m					
	PROTEROZOIC: GRANITE grey m.g. 30% biotite 30% quartz (grey-blue) & 30% feldspar. equigranular	50m	+ + + + + + + + + +	30	45	230	35% sand at 1ft 40
	END OF HOLE 60m.	60m					
		70m					
		80m					
		90m					
		100m					
		110m					

Water ↓ cut ① 6000 gph

DRILL TYPE: Schramm DATE DRILLED: 15-16th May 1

DRILLER: O. BISSTON LOGGED: M. Mus

SCALE: 1:500

MJ 6

LOG OF PERCUSSION DRILL HOLE

PROSPECT MURRAY COPPER COAL — Narrina 1:250,000 sheet

LOCATION 15th KN Oolgelima Hill — MAP CO-ORDS: 3164 4329

R.L. COLLAR: .....

INCLINATION: -90°

DIRECTION: -

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm) Cu (ppm)	Zn (ppm)	REMARKS
1m³/hr Water Cut 4000 ppm ②	MT ANNA SANDSTONE — CLAY - Khaki - ~~grey~~ 20% silt. 20% mica. high plasticity. Rest clay.					20% c.g. sand.
	COARSE SAND - pale grey. Minor mica, silt, clay. 20% f.g. 20% m.g. 25% c.g. quartz. Also Few porphyry pebbles.	10 m				50mm coal seam
5000ppm ② 4000 ppm ②	CADNA-OWIE FORMATION — SAND - pale grey. Minor silt, clay pyrite. mica. 10% c.g. 20% m.g. 50% F.g. quartz. Feldspar common subrounded.	20 m				
	COARSE SAND - pale grey. minor pyrite, silt clay. mica. 30% c.g. 30% m.g. 10% F.g. quartz. Feldspar. 50mm coal seam	30 m				
		40 m				
	ALGEBUCKINA SANDSTONE — COARSE SAND pale grey. minor pyrite silt. 10% kaolin. 40% c.g. 20% m.g. 10% F.g. quartz. Some opaline.	50 m				
		60 m				
3900ppm ③ 8000ppm	MT TOONDINNA FORMATION — SILTSTONE - grey - 15% f.-m.g. Subangular quartz 55% silt 10% mica minor pyrite. 5% carbonaceous F.g. pieces. Rest clay.	70 m				
		80 m				
	END OF HOLE 82 METRES.	90 m				
		100 m				
		110 m				

DRILL TYPE: Boyles — DATE DRILLED: 6-7 May 1972

DRILLER: O. BILSTON — LOGGED: M.M. Mason

MV 5

LOG OF PERCUSSION DRILL HOLE

HOLE No: MV-5

PROSPECT: MVALOORCOFFIE COAL — Warrina 1:250,000 Sheet

R.L. COLLAR: .....

LOCATION 40km NE Coober Pedy. MAP CO-ORDS: 3024 4315

INCLINATION: -90

DIRECTION: -

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm) Cu (ppm)	Zn (ppm)	REMARKS
	BULLOO SHALE					
	CLAY Khaki & dark grey. F.g. 20% silt quartz 5-10% mica Rare clay.					
	dark grey. 5% graphitic 30% silty					
	SANDY SILTSTONE grey. 10% m.g. quartz					
7 May 75	**MT ARMA SANDSTONE**					
	SAND - light grey 50mm coal seam 60% m.g. ac.g sub rounded bright quartz minor mica silt trace clay 10% silt	10 m				
	SAND - grey - 70% m.g. sand minor pyrite 10% clay some c.g. layers also silt layers. Feldspathic.					
	Feldspathic: minor pebbles pink & green weathered porphyry.	20 m				some carbonaceous layers.
4600ppm. (1)	SAND - 80% F-m.g. sub rounded quartz minor feldspar, mica, pyrite, silt & clay. minor sandy siltstone layers					
10,000 gph. 4600ppm. (2)	**CADNAOWIE FORMATION**	30 m				
		40 m				
	5% 5mm coal seams	50 m				
	ALGEBUCKINA SANDSTONE SAND - m.g. 20% Kaolin matrix. 80% m.g. angular quartz. No Feldspar some opaline quartz. Minor coal, pyrite, silt.	60 m				
	SILTSTONE - green 15% F-m.g. quartz subrounded minor pyrite. 10% mica. 55% silt. 5% graphite. Rare clay.	70 m				
	5% m.g. sand 25% clay	80 m				
10,000 gph. 4600ppm. (3)	**MOUNT TOONDINNA FORMATION**	90 m				
						50mm calcarenite lens with pyrite nod
	END OF HOLE 95 metres.	100 m				calcarenite
		110 m				

DRILL TYPE: SCHRAM

DRILLER: D. BIRSTON

DATE DRILLED: 5-6th May 1975

LOGGED: M. MASON

[illegible]-035

MU 4

LOG OF PERCUSSION DRILL HOLE

PROSPECT MUALOOCOPPIE COAL

LOCATION 55 km NNE Coober Pedy. MAP CO-ORDS 2860 4660

R.L. COLLAR .....

INCLINATION -90°

DIRECTION .....

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM Cu (ppm)	GEOCHEM Zn (ppm)	REMARKS
	CLAY SOIL - Red brown.					
	CLAY KHAKI. - F.g. 20% rounded silt. minor m.g. quartz. 10% muscovite. Rest clay.					10% gypsum
	— — — grey brown — — —	10 m				
4 May 75'	CARBONACEOUS SHALE - Black f.g. 10% graphite 15% mica Rest clay. 5% pyrite					
BULLDOG SHALE		20 m				0.1m hard band
	SANDY SILTSTONE - pale grey 10% m.g. 50% F.g quartz, tourmaline, mica elt	30 m				
	LIMESTONE - pale brown massive - indurated					
	SILTY CLAY - 25-30% silt. - 10-20% mica 5% - pyrite, minor graphite Rest clay					
MOUNT ANNE	COARSE SAND. - OPP white 30% c.g. rounded quartz. 15% F.g. muscovite Rest Clay minor pyrite, tourmaline, graphite Frags.	40 m				30% silty clay
	SAND 20% m.g. 50% F.g. minor pyrite & mica, coal grains. Rest clay. Few thin grey shale layers & siltstone					
	— — — — 0.1m. coal seam.					
	CORE 80% loss. — — — indurated. buff 40% sand	50 m				0.4m calcareous
	— SAND - medium 0.2m. calc fg. nodule minor thin coal layers gr. 30% silt 1-3m.					calcareous
CADNAMUIE	2% mica, 3% coal fragments. 15-30% clay 10% c.g. Rest m.g					calcareous
	END OF HOLE - 56 metres.					
		60 m				
		70 m				
		80 m				
		90 m				
		100 m				
		110 m				

4,000 gph - 4100 ppm — Water — 2000 gph cut

@ 3800 ppm

Cased @ 30 metres & equipped for pastoral bore by mt Barry Station.

DRILL TYPE Schramm

DRILLER R. BINSTON

DATE DRILLED 4 May 1975

LOGGED M. Mason

036

MV 3

LOG OF PERCUSSION DRILL HOLE

ASPECT: MURLOOCOPPIE COAL

Murloocoppie 1:250,000 Sheet.

R.L. COLLAR .....

INCLINATION: -90°

LOCATION: 48 Km JNE Cooper Pedy MAP CO-ORDS: 2838 4534

DIRECTION: -

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)			REMARKS
					Cu (ppm)	Zn (ppm)	
4 May 1975	KIRATI CLAY F.g. 30% rounded quartz silt. 20% mica. Rest clay. high plasticity moderate swelling. vague layering. 2% carbon Fragments.						5% 100mm gypsum vein
	Grey & khaki - 40% vague layering grey clay. 10% silt quartz. 30% mica Rest clay.	10m					
	BLACK CLAY F.g. 30% mica 5% carbon Fragments Rest clay 5% quartz silt 2% m.F.g. pyrite. vague Foliation	20m					
	gradational boundary.	30m					
	CLAY - Dark green-grey. F.g. 15% silt quartz. 3% tourmaline 2% F.g. pyrite 3% carbon Fragments 20% f.m.g. mica. Some Feldspar Rest clay	40m					
2000gph.	SAND - pale grey - m.g quartz pyrite nodules - some mica						50mm coal seam.
	COAL SEAM 1.0m thick - brown black						
Water sample ① 3500ppm Water Cut	SILT-SAND - pale grey C.g. 20% mica F.g. 10% C.g. mica m.g. pyrite mica. 50 - 150mm coal seams (above +) Coal seam 0.1m thick						water return brown relatively hard to drill
	15% siltstone layers 12% m.g. coal Fragments	50m					brown return - calc. cemented sand with pyrite.
	SILTY SAND 40% m.g rounded quartz, 10% m.g. mica rest silt, clay & carbonate / 20% c.g. coal Fragments						
	COARSE SAND - pale grey 50% c.g. minor silt, clay, mica, pyrite 2 thin coal seam 5m. minor kaolin cement.						5m blk massive green shale.
	Coal Seam 0.2m. 5% sand silt with carbon Fragments.	60m					thin 10mm coal seams.
	sand becoming m.g. only 15% c.g.						50mm coal seam
	20% thin massive dark grey green shales possibly carbonaceous.						50mm coal seam
	FINE SAND v. pale grey well sorted 90% F.g. sand. 5% m.g. muscovite minor silt kaolin. 5% greenish.	70m					
2900 ppm. ②	MEDIUM SAND - pale grey 15% C.g. minor silt kaolin (coag?) 5% m.g. muscovite 5% carbonaceous shale layers. well sorted.						minor coal
	becoming coarser & less well sorted	80m					
	20% carbonaceous shale.						10% kaolin cemented fine sand.
6000gph.		90m					minor coal
	coarser well sorted angular minor nuisance 5% carb. shale.						
	FINE SAND - v. pale grey well sorted subrounded 80% F.g. sand minor kaolin & silt 5% c.m.g muscovite						Few m.g. bright coal grains.
		100m					
2900 ppm ③	COARSE SAND (?) granite 30% c.g. Rare m.g. quartz minor coal angular.						minor carbonaceous shale.
	SILTY SAND - grey 60% F.g. subrounded quartz 5, 2% garnet, 2% F.g. coal fragments minor pyrite, poorly sorted, 25% silt PART clay. v. minor garnet 1% rounded tourmaline	110m					

DRILL TYPE: PERCUSSION

DRILLER: D. BIASTON

DATE DRILLED: 2nd May 1975

LOGGED: M. Mason

LOG OF PERCUSSION DRILL HOLE 037

MU 2

ASPECT: MURLOCCOPPIE COAL — Munlocoppie 1:250,000 sheet.

R.L. COLLAR:

LOCATION: 37km NNE. Cocker Pedy. MAP CO-ORDS 2868 4392

INCLINATION:

DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM (ppm)	Cu (ppm)	Zn (ppm)	REM
12 May 75 Warm Gas	CLAY khaki high plasticity. 35% silt quartz 15% micm. Rest clay						10% gypsum
Bulldog Shale	15% silty sandstone dark grey 5–10% pyrite 20% F.g quartz 15% mica 5% tourmaline Rest clay	10 m					45% cone in limestone 2% F.g. coal.
8000ppm Single 3900ppm ①	COARSE SANDSTONE - v. pale grey. 35% c.g. subangular quartz, minor porphyry pebbles, minor clay, 2% pyrite 10% silt. Rest f–m.g. subrounded quartz uncemented						some sections cemented
Cooinda Coal Measures	25% silty sandstone with 10% f–m.g coal leases and fragments	20m					minor coal fr
	minor sandy siltstone						minor kaoli
	15% c.g. subangular quartz	30m					
14000gph ↓ ② 3900ppm	Algebuckina Sandstone	40m					
	5% shale & silt bands shale - carbonaceous green-grey to dark grey. 35% quartz silt.	50m					
	COXE uncemented. v. vague bedding 10–50mm thick. minor carbonaceous fragments 50% core loss.	60m					
	5% yellow brown F.g. cemented sandstone	70m					
	MEDIUM GRAINED SANDSTONE						
	10% silty sandstone with 5% heavy minerals including garnet - distinctive	80m					2% coal detrital fragments
	2–3% COAL SEAM - black / layered - subresinous probably absent less than thick. LOST CORE						
MOUNT TOONDINA BEDS	Black shales and sandy silts relative amounts medium - Rest garnet sand - grey. 10% c.g. 25% m.g. 20% silt angular quarts, minor mica, pyrite, 2% coal fragments 2% garnet poorly sorted	90m					coal seam 0.2m 0.05m.
	SILTSTONE - 45% quartz silt 5% mica 5% coal F.g fragments minor pyrite Rest clay 20% m.g. sand layers grey 2% garnet						0.05m. 0.05m
	SILTSTONE - grey f.g. 53% F.g. quartz silt. 2% pyrite 5% mica 5% coal F.g. fragments 2% garnet Rest clay - some shale & sand layers	100m					0.05m. 0.2m. 0.05m. 0.05m. Estimated thickness - exact position not
+20,000 gph ↓	SILTSTONE - dark grey 50% F.g. silt quartz 20% m.g. quartz 2% garnet 5% mica 2% pyrite 6% carbon fragments Rest clay. v. poorly sorted v. vague 5–10mm layering. 10% mica 25% clay						
	END OF HOLE 111 metres.	110m					

DRILL TYPE: Schramm

DATE DRILLED: 30 April - 2 May 19

DRILLER: D. BILSTON

LOGGED: M. Mason

SCALE 1:500

L - 038

MU 1

LOG OF PERCUSSION DRILL HOLE

SPECI: MURLUOCOPPIE COAL Murloocoppie 1:25,000 Sheet. R.L. COLLAR:

LOCATION: 26km NNE Coober Pedy MAP CO-ORDS: 2827 4277 INCLINATION: -90°

DIRECTION:

WATER CUT	DESCRIPTION	GEOPHYS LOG METRES	GEOCHEM (ppm) Cu (ppm) Zn (ppm)	REMARKS
1 May 75 ① 5mgl/s 5600ppm ② 300mgl/s 4900ppm ③ 1000mgl/s 7000ppm ④ 1000mgl/s 4800ppm	**CADNAOWIE FORMATION** - Conz in cong limestone - some ferruginous zones Bulldog **CLAYSTONE** 10% f-m.g. Sand 15% mica 70% clay. grey, minor brown. HW-CV becoming khaki. Some sandy clay bands / clay siltstone. 35% silt dark grey CLAY SAND - Grey 45% m.g. rounded quartz 15% m.g. Rest clay 15% mica 55% m.g. quartz. 2% green mineral? - Grey. SAND v. pale grey 90% F-c.g. quartz c.g. subrounded F-m.g rounded ← Water cut. 2-5% mica minor clay COARSE SAND - v. pale grey minor mica & clay. 15% m.g. sand Rest c.g. subangular quartz SAND - light grey. 60% m.g. rounded quartz 5% pyrite. minor tourmaline, 10% clay bands. 5% mica Rest clay. Thin coal seam. COARSE SAND - v. pale grey. 30% c.g. subangular quartz. Minor clay & silt. Rest F-m.g. subrounded quartz 10% c.g. quartz. Rest F-m.g. minor tourmaline, pyrite, Feldspar. 15% clay silt with coal fragments 10% coal lumps - woody. (5cm) 30% Fine sandstone with 20% F.g coal Fragments - detrital 2% pyrite. Fine Sandstone - 30% Feldspar minor clay 10% mica Rest quartz. Subangular. 5% F.g. detrital coal. 20% F.g. sandstone 30% detrital coal COARSE SAND - white. 50% c.g. subangular v. minor clay Rest m.g. quartz 10% coal Fine sandstone & 10% clay bands minor pyrite becoming m.g. sandstone v. minor coal & pyrite. Cadnaowie Formation Algebuckina	10 m 20 m 30 m 40 m 50 m		20% gypsum v 5% pyrite 2% pyrite 5% 2% pyrite 1% 2% carbonaceous fragments 5% F.g. Fragments mat'd to sandst 1% F.g. coal Fra 3% clay pieces 5% Kaolin m.g. 10% Kaolin 30% m.g. coal Frags 1-3cm interlayers Fine sandsto coal being away 5% Kaolin sandst Contamination due to high wat inflows.
	END OF HOLE 59 metres 60 Ft steel 5" casing lost in hole.	60 m 70 m 80 m 90 m 100 m 110 m		

DRILL TYPE: Longyear DATE DRILLED: 30 April - 30 April

DRILLER: D. BINSTON LOGGED: M. Mouse

APPENDIX II
CRAE MEMORANDUM SUBJECT NEWMONT - DAMPIER SR-14/2

CRA EXPLORATION PTY LIMITED

11th May, 1981.

Memorandum to: D.R. KENNEDY

Memorandum from: D.R. McBAIN

Re: WIRRANGULA HILL - E.L. APPLICATION RECOMMENDATION

Newmont-Dampier drilled a cored borehole on their Cadaree Hill E.L., the position is marked on the accompanying map.

The relevant borehole information is:

99 - 129,08	Core loss (considered unconsolidated - white sand and coal fragments)
129,08 - 130,75	Brown coal

The coal analysis is as follows:-

	AIR-DRIED %	DRY %
Moisture	17.4 (Total ?)	-
Ash	5.6	7.7
Volatile Matter	38.4	52.9
Fixed Carbon	28.6	39.4
Total Sulphur	0.64	-
Specific Energy	20.94 MJ/Kg	28.82 MJ/Kg

The seam as far as Newmont-Dampier were concerned was 1.67 metres, though this could extend upward due to 30 metres core loss in the roof, and there were no geophysical logs.

The coal quality data is slightly vague, particularly with regard to ash and moisture. From the % volatiles one would expect the % moisture to be higher. Therefore it could be assumed that probably this is not a true total moisture figure.

The borehole above is on an E.L. area under application to another company; however the proposed Wirrangula Hill E.L.'s eastern boundary is only 2.25 kilometers from the borehole.

The geophysical outlook for the Wirrangula Hill E.L. is reasonably promising according to the general magnetics and gravity. These both show a basin type feature.

Regards,

D. MCBAIN

DM/dp

APPENDIX II

NILPINNA GRAVITY SURVEY GRID DATA, DECEMBER, 1981.

- 043

CLIENT: CRA EXPLORATION

GRID : NILPINNA

AREA : NORTHERN SOUTH AUSTRALIA

SURVEY: GRAVITY & OPTICAL LEVELLING

DATE : NOVEMBER/DECEMBER 1981

PHASE 1

A COMBINED GRAVITY AND OPTICAL LEVELLING SURVEY - NILPINNA

FOR: CRA EXPLORATION
31 OSMOND TERRACE,
NORWOOD, S.A., 5067

BY: SOLO GEOPHYSICS & CO.
3a McINNES STREET,
RIDLEYTON, S.A., 5008

Mobilising from Bulgunnia and restocking at Coober Pedy the Nilpinna gravity and optical levelling survey commenced 19th. November, 1981. After 25 days and completing 169 kilometres of the 220 line kilometre grid, the four man crew demobilised to Adelaide. The survey party consisted of three SOLO operators (one of which arrived Coober Pedy 23rd. November) and one CRAE field-hand. Access to the grid from Coober Pedy is as follows:

From the Miners Store, travel 7.35 kms north on the Oodnadatta road to the Nilpinna turn-off (not marked), then travel east on the Nilpinna road 79 kms. (accumulated distance from the Miners Store) to Marys Yard. The field crew camped at Marys Yard throughout the duration of the survey after permission was obtained from Jim Nunn, Manager - Nilpinna Station (call sign - 9 Oscar, India). Only the southern portion of the surveyed grid was outside Nilpinna's Pastoral lease, this falling within Crown land (see map).

Access to various parts of the grid was good and included a number of tracks (single-cut with grader) originating from Marys Yard as well as the Coober Pedy road (double-cut with grader). Most tracks have been graded within the past six months while Marys Yard was constructed last year. Fences enclose the grid but can be dropped with considerable ease as per instruction of Jim Nunn.

SURVEY DETAILS:

The grid origin was either Newmont drill-hole SR-14 or BA14/8? (only one could be found). A magnetic bearing was calculated from the proposed CRAE traverses off the Warrina 1:250000 sheet. When applied this bearing aligned exactly with a previous traverse undertaken by SOLO in 1978 for Newmont Pty. Ltd. The base line, designated co-ordinates of 50000N, is 8.2kms from the averaged position of the Newmont drill-holes. Traverses bearing 033 magnetic are positioned every 5 kms along the base-line (see map), with the most easterly designated co-ordinates of 100000E. Steel pickets were sited at the end of each traverse. Located at the intersections of traverses and base-line are three metre lengths of polypipe. Steel spacers and wooden dumpy pegs, marking the site of gravity measurements are alternately sited every 200 metres along the traverses. Distances were measured with a specially calibrated odometer.

Gravity loops were kept to within two hours duration. Five main gravity bases located every 5 kms along the baseline formed the basis of all the further gravity work completed along the traverses. These bases numbering 1 - 4 inclusive and 28 were tied in an A-B-A-B-A manner. The remaining gravity bases were tied in an A-B-A-B manner, in that a drift corrected value taken from the end of a gravity loop was repeated to ensure its accuracy and correct comparison to the initial base (in all 29 bases, checks proved a better than .05 mgal accuracy and most better than .02 mgals). See map for distribution of gravity bases.

Cont..

Base one, 50000N/100000E was given an assumed observed gravity value of 979200, the survey was made arbitary to this point. Drifts encountered throughout the survey were moderate averaging .05 mgals per hour.

Station 54600N/100000E had an assumed elevation of 250 metres. All stations were optically levelled.

The fanfold data contains the original field data in loop format with station co-ordinates, station I.D., instrument reading in scale divisions, time and elevation. Also listed are the observed and theoretical gravity plus Bouguer gravity at 2.1, 2.4, 2.67 and 2.8 gm/cc.

The line files of the various traverses are listed with station I.D., station co-ordinates, elevation, loop number and ten Bouguer densities at 0.1 gm/cc steps over a range from 1.8 to 2.7 gm/cc.

INSTRUMENTATION SUPPLIED FOR THE SURVEY:

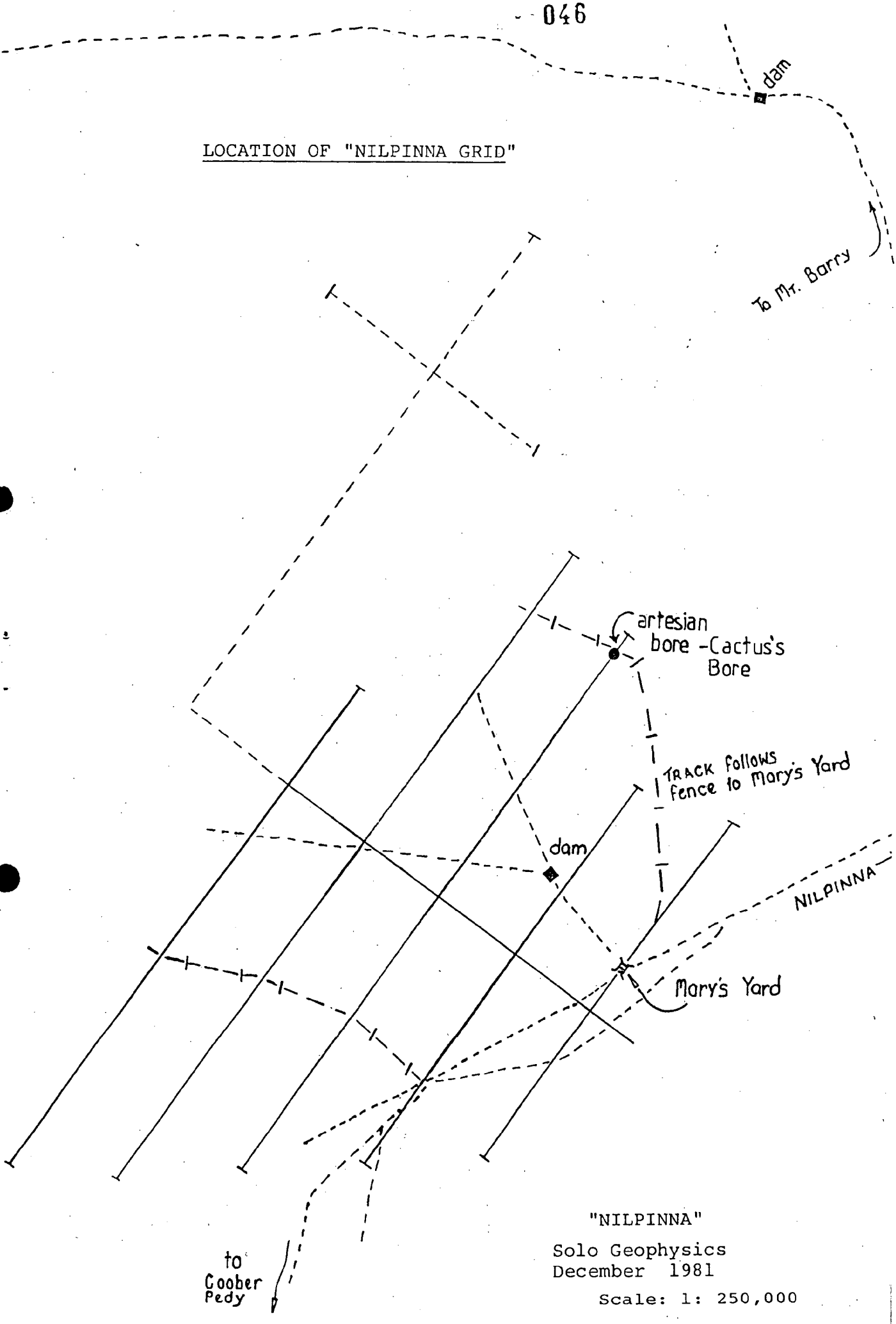
Two LaCoste & Romberg temperature compensated gravimeters G#037 and G#561.
One Pentax and one Sokisha automatic engineers level.
Two five metre staffs.
Two electronic vehicle odometers.
Complete camping gear for four man crew.

INSTRUMENTATION DAMAGED:

One tent completely written off and the second badly damaged.
Gas bottle (bleed valve sheared).
Tripod (level screw sheared).
Two hammers - one lost, the second broken.
One reclining chair.

R. ANNETT - Senior Surveyor - BSc., A.R.S.M., A.I.M.M.

LOCATION OF "NILPINNA GRID"

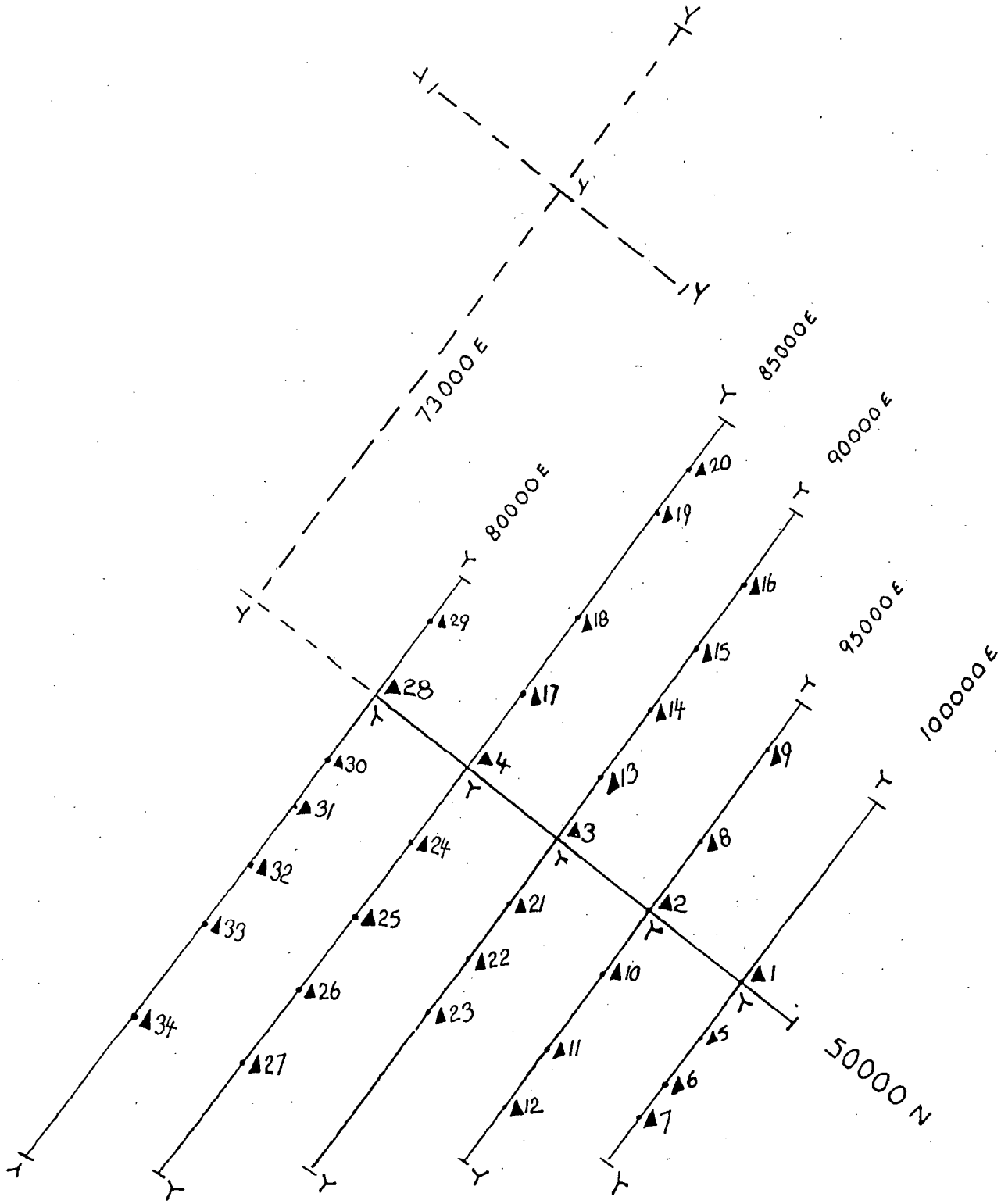


"NILPINNA"

Solo Geophysics
December 1981

Scale: 1: 250,000

LOCATION OF GRAVITY BASE STATIONS



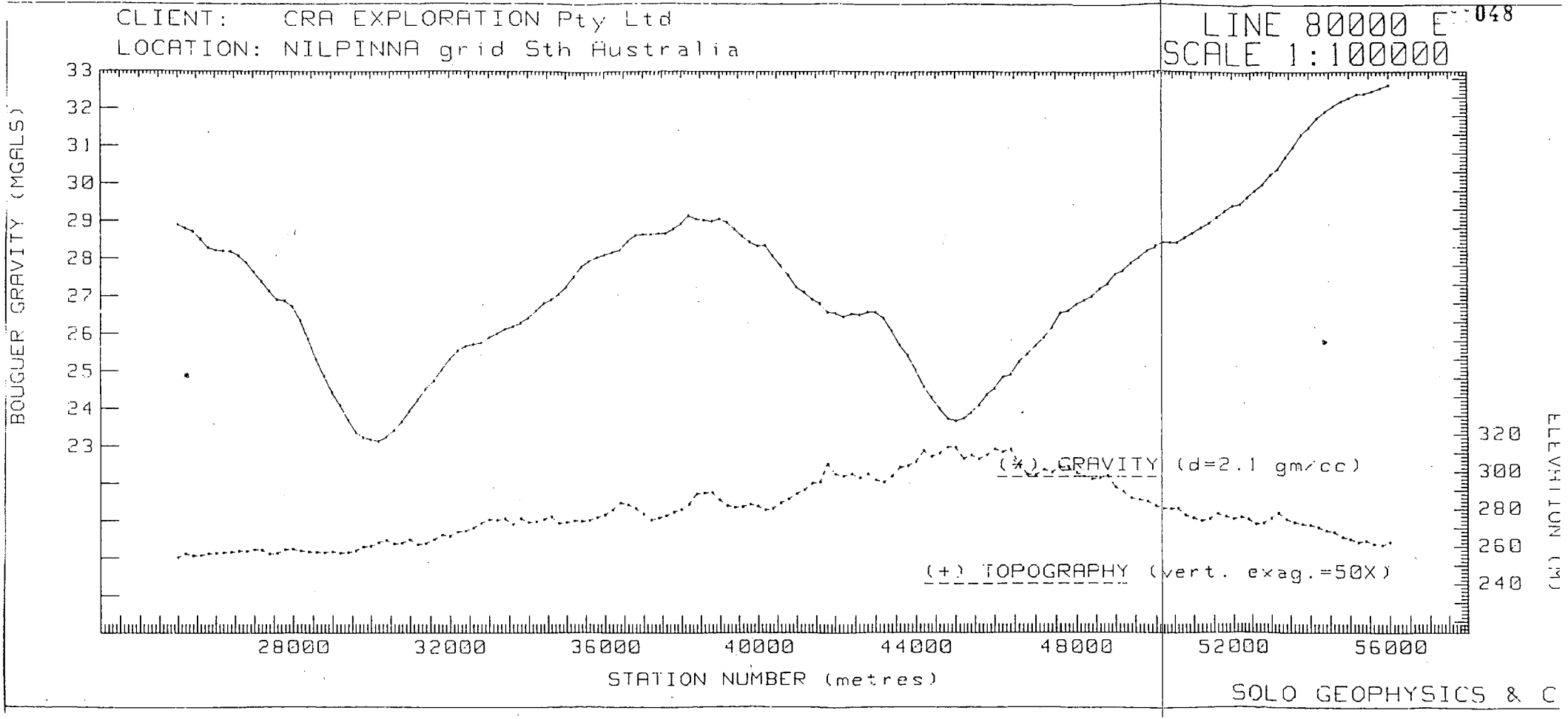
Y Solo Gravity Base
Steel Picket

Y 3 metre Polypipe

"NILPINNA"

Solo Geophysics
December 1981

Scale: 1: 250,000

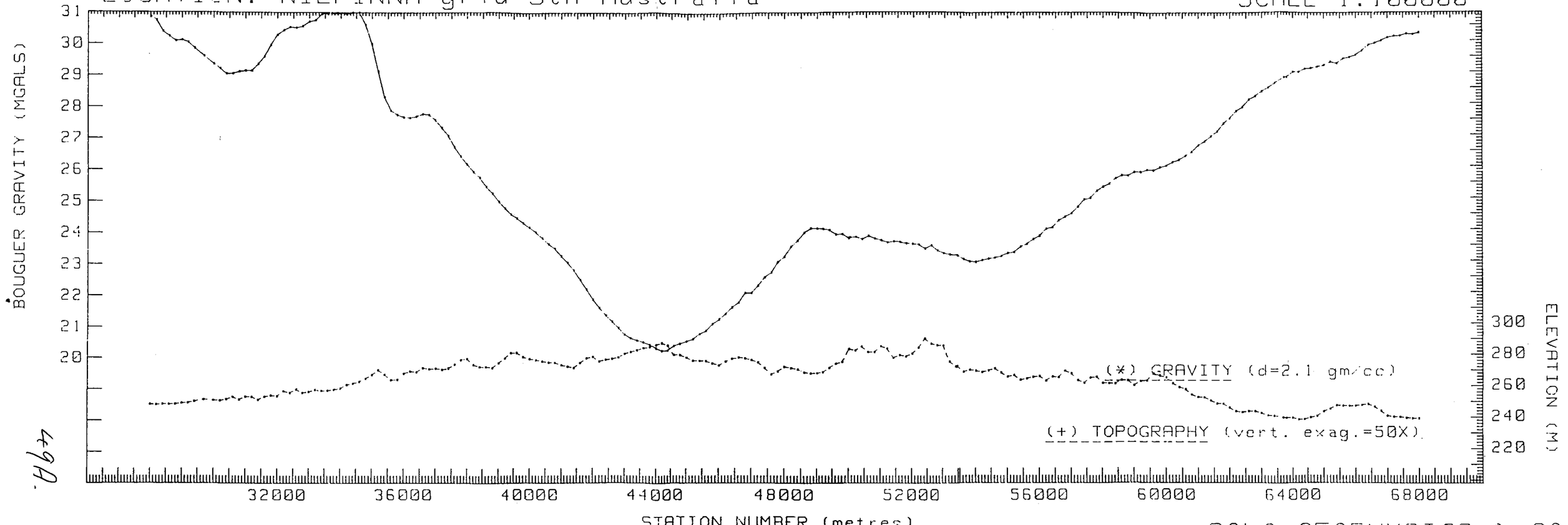

CLIENT: CRA EXPLORATION Pty Ltd
LOCATION: NILPINNA grid Sth Australia
LINE 80000 E
SCALE 1:100000
BOUGUER GRAVITY (MGALS)
33
32
31
30
29
28
27
26
25
24
23
(*) GRAVITY (d=2.1 gm/cc)
(+) TOPOGRAPHY (vert. exag.=50X)
320
300
280
260
240
ELEVATION (M)
28000
32000
36000
40000
44000
48000
52000
56000
STATION NUMBER (metres)
SOLO GEOPHYSICS & C

CLIENT: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

LINE 85000 E

SCALE 1:100000



4904

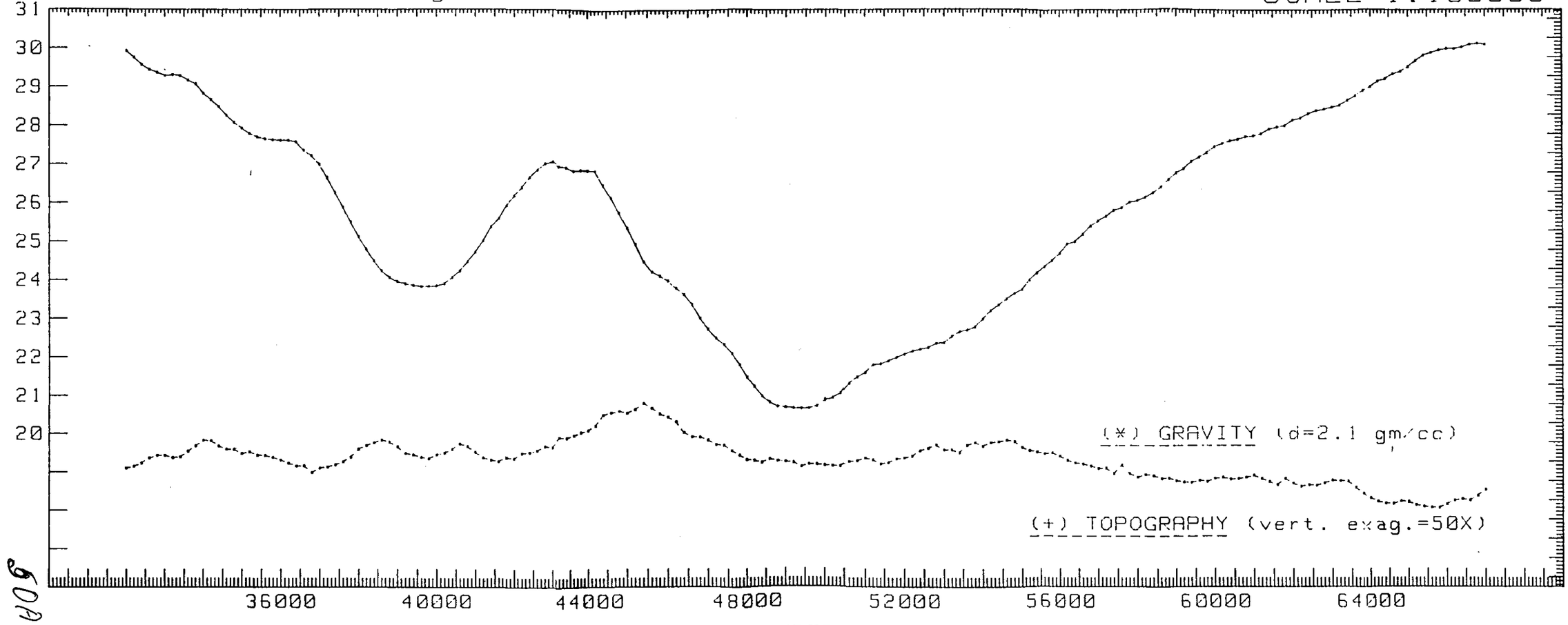
SOLO GEOPHYSICS & CO.

CLIENT: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

LINE 90000 E 050

SCALE 1:100000



606

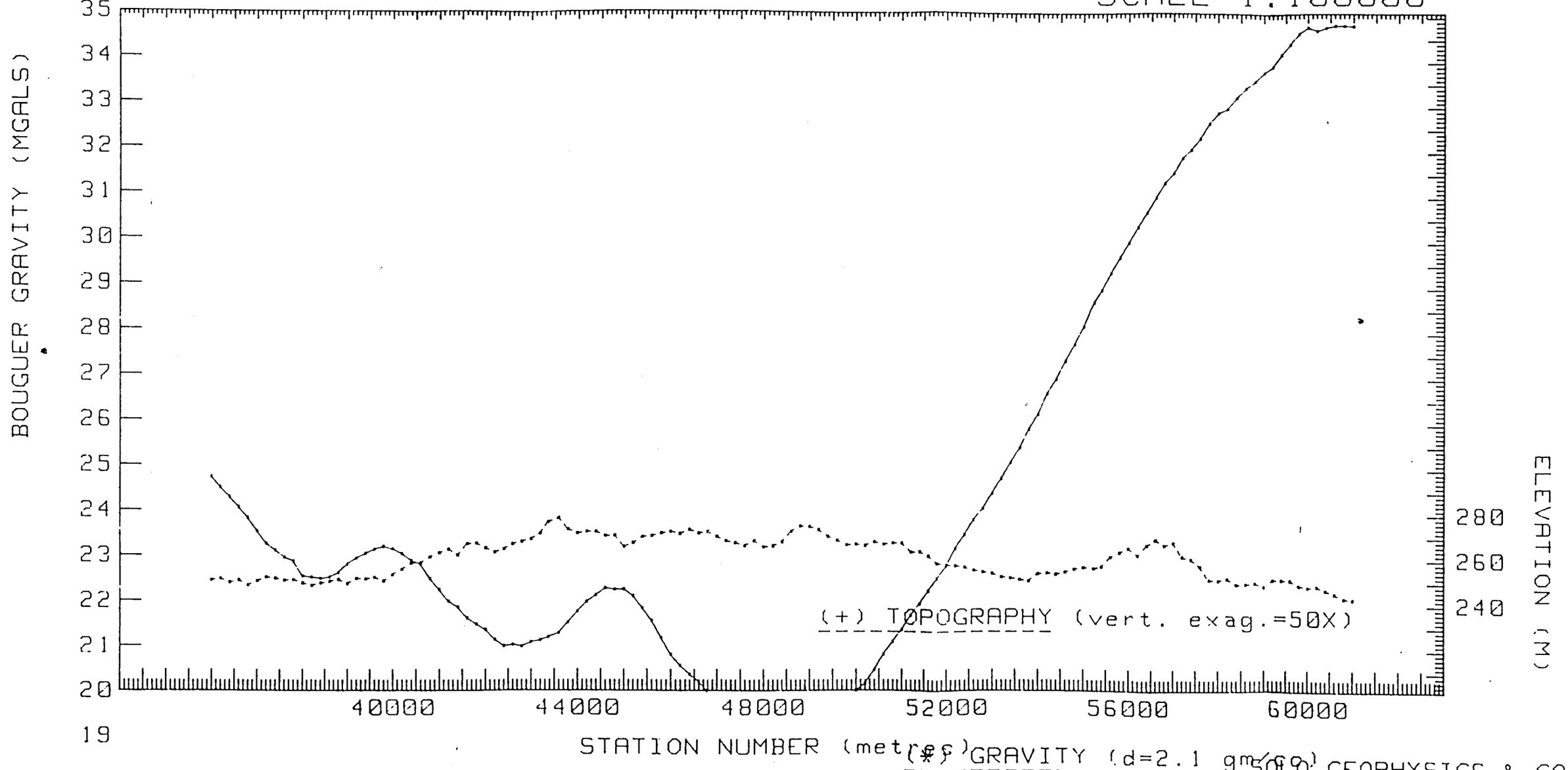
SOLO GEOPHYSICS & CO.

CLIENT: CRA EXPLORATION Pty Ltd

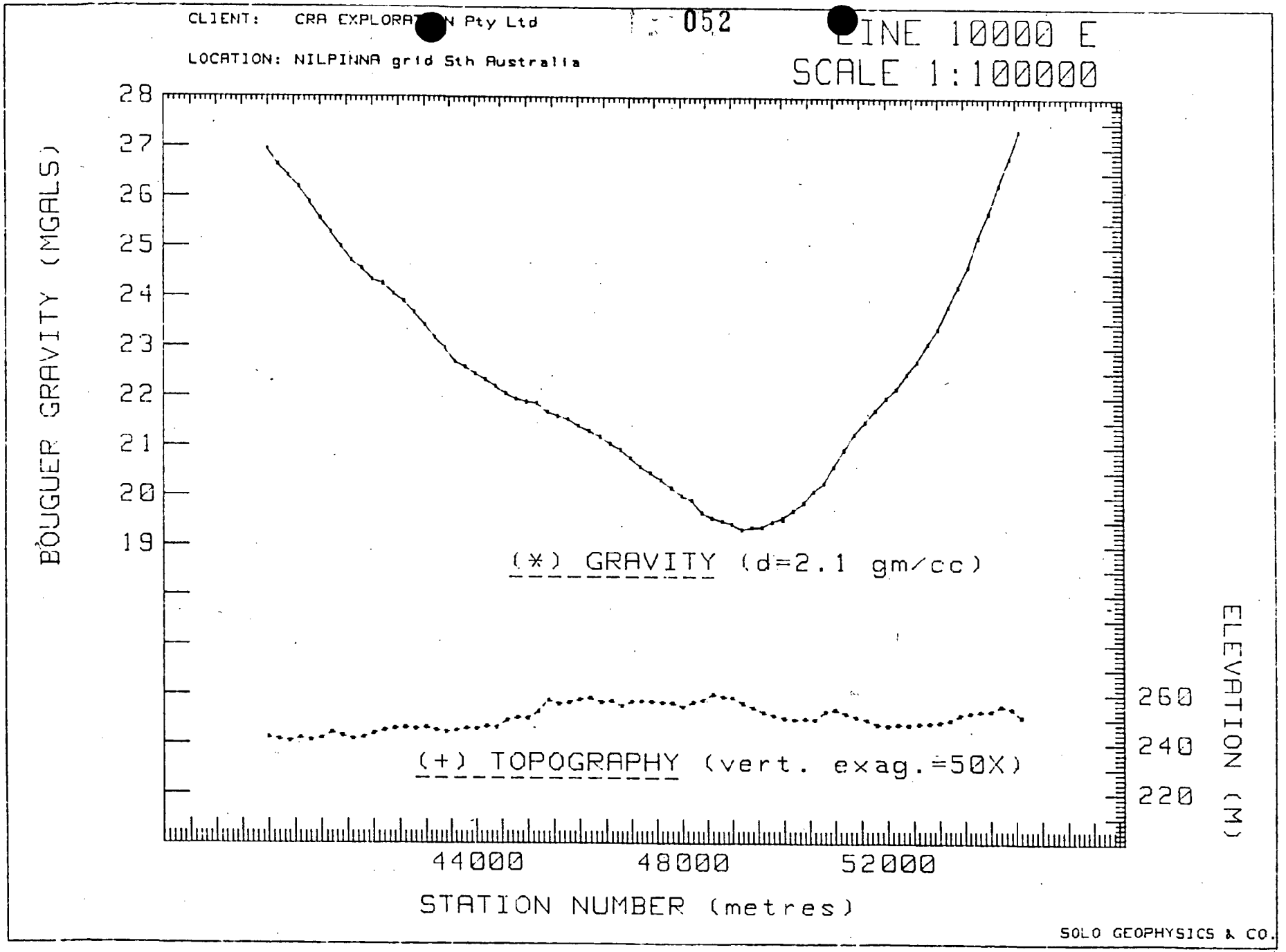
LOCATION: NILPINNA grid Sth Australia

LINE 95000 E
SCALE 1:100000

051



SOLO GEOPHYSICS & CO.


CLIENT: CRA EXPLORATION Pty Ltd
052
LINE 10000 E
LOCATION: NILPINNA grid Sth Australia
SCALE 1:100000
BOUGUER GRAVITY (MGALS)
28
27
26
25
24
23
22
21
20
19
(*) GRAVITY (d=2.1 gm/cc)
(+) TOPOGRAPHY (vert. exag.=50X)
ELEVATION (M)
260
240
220
44000
48000
52000
STATION NUMBER (metres)
SOLO GEOPHYSICS & CO.

GOLD GEOPHYSICS & CO

********** DATA REDUCTION PARAMETERS **********

CLIENT CRA EXPLORATION Pty Ltd

LOCATION NILPINNA Grid Sth Australia

Time Zone is 9.5

Grid Rotation Bearing is 39 degrees EAST

The Known Point of 28.67 degrees Latitude is located
at Line Number 50000 and Station Number 100000

The Base Station Observed Gravity Values are.

BASE #	OBSERVED GRAVITY (mgals)
1	979200
2	979194.68
3	979195.32
4	979190.55
5	979200.43
6	979205.09
7	979209.94
8	979201.55
9	979204.14
10	979195.56
11	979200.67
12	979207.33
13	979192.91
14	979196.6
15	979197.53
16	979200.24
17	979190.?
18	979192.?
19	979197.82
20	979195.96
21	979195.?
22	979203.52
23	979207.?8
24	979192.25
25	979193.82
26	979200.53
27	979211.61
28	979193.2
29	979196.4
30	979185.53
31	979192.93
32	979190.41
33	979201.26
34	979205.83

****

Data Computed on 24/12/81

SHELL GEOPHYSICAL CO

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******** CATALOG OF RAW FIELD DATA ********

LOOP# 1	LINE 100000E	FROM 50000N TO 54600N
LOOP# 2	LINE 50000N	FROM 100000E TO 103000E
LOOP# 3	LINE 50000N	FROM 92500E TO 95000E
LOOP# 4	LINE 50000N	FROM 84500E TO 90000E
LOOP# 5	LINE 50000N	FROM 85000E TO 90000E
LOOP# 6	LINE 50000N	FROM 85500E TO 90000E
LOOP# 7	BASE TIE 1-2	
LOOP# 8	BASE TIE 2-3	
LOOP# 9	BASE TIE 3-4	
LOOP# 10	LINE 95000E	FROM 50000N TO 54000N
LOOP# 11	LINE 100000E	FROM 50000N TO 47800N
LOOP# 12	LINE 100000E	FROM 47800N TO 44000N
LOOP# 13	LINE 100000E	FROM 44800N TO 42200N
LOOP# 14	LINE 100000E	FROM 42200N TO 40000N
LOOP# 15	LINE 95000E	FROM 44000N TO 47400N
LOOP# 16	LINE 95000E	FROM 47400N TO 51000N
LOOP# 17	LINE 95000E	FROM 50000N TO 53400N
LOOP# 18	LINE 95000E	FROM 53400N TO 57000N
LOOP# 19	LINE 90000E	FROM 50000N TO 54200N
LOOP# 20	LINE 90000E	FROM 53600N TO 57200N
LOOP# 21	LINE 90000E	FROM 57200N TO 61000N
LOOP# 22	LINE 95000E	FROM 42000N TO 38000N
LOOP# 23	LINE 95000E	FROM 38000N TO 34000N
LOOP# 24	LINE 90000E	FROM 61000N TO 65000N
LOOP# 25	LINE 90000E	FROM 65000N TO 69000N
LOOP# 26	LINE 85000E	FROM 50000N TO 54000N
LOOP# 27	LINE 85000E	FROM 54000N TO 58000N
LOOP# 28	LINE 90000E	FROM 50000N TO 46200N
LOOP# 29	LINE 85000E	FROM 58000N TO 62000N

LOOP# 30 LINE 05000E FROM 62800N TO 55800N

LOOP# 31 LINE 85000E FROM 55800N TO 48000N

LOOP# 32 LINE [illegible]0000E FROM 16200N TO 8200N

LOOP# 33 LINE [illegible]0000E FROM 12200N TO [illegible]200N

LOOP# 34 LINE 90000E FROM 37200N TO 32000N

LOOP# 35 LINE 05000E FROM [illegible]0000N TO 46000N

LOOP# [illegible] LINE 05000E FROM 46000N TO [illegible]000N

LOOP# 37 BASE TIE 4-20

LOOP# 38 LINE 90000E FROM 50000N TO 54000N

LOOP# 39 LINE 00000E FROM 54000N TO 56000N

LOOP# 40 LINE 85000E FROM 42000N TO 38000N

LOOP# 41 LINE 85000E FROM 38000N TO 34000N

LOOP# 42 LINE 05000E FROM 34000N TO 20000N

LOOP# 43 LINE 00000E FROM 50000N TO 45800N

LOOP# 44 LINE 90000E FROM 45800N TO 41600N

LOOP# 45 LINE 90000E FROM 41600N TO 38600N

LOOP# 46 LINE 80000E FROM 38600N TO 33800N

LOOP# 47 LINE 80000E FROM 33800N TO 27000N

LOOP# 48 LINE 80000E FROM 22000N TO 25000N

****

Data Computed on 04/12/81

SOLO GEOPHYSICS & LTD

LOOP NUMBER 1

SURVEYED FOR: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid SA Australia

COVERAGE: LINE 100000E FROM 5000N TO 5400N

Loop Time: 2.35 Hours | Drift Rate: -.05 | Gravimeter: #G 561 | Operator: P.ANNETT
Loop Drift: -.111 Mgals | Time Zone: 9.500 | Calibration Factor: 1.009 | Date: 28/11/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
	BASE # 01			2691.46	9.13		979200.00					
50000	100000	0	0	2691.46	9.13	249.35	979200.00	979235.44	19.27	16.45	13.51	12.25
50200	100000	0	0	2691.60	9.18	248.86	979200.15	979235.35	19.21	16.39	13.45	12.19
50400	100000	0	0	2691.90	9.23	249.19	979200.13	979235.22	19.07	16.24	13.32	12.06
50600	100000	0	0	2691.96	9.30	248.81	979200.36	979235.15	18.98	16.15	13.23	11.97
50800	100000	0	0	2691.14	9.34	251.09	979199.69	979235.01	20.27	17.10	14.25	12.99
51000	100000	0	0	2691.17	9.38	252.16	979199.73	979234.91	20.20	17.03	14.18	12.92
51200	100000	0	0	2691.75	9.42	251.24	979200.32	979234.80	20.01	17.79	14.93	13.57
51400	100000	0	0	2692.27	9.47	249.83	979200.84	979234.69	21.26	18.12	15.20	13.83
51600	100000	0	0	2692.66	9.52	248.66	979201.24	979234.59	21.50	18.38	15.46	14.21
51800	100000	0	0	2693.17	9.57	246.83	979201.78	979234.44	21.85	18.68	15.85	14.58
52000	100000	0	0	2693.41	10.01	246.42	979202.00	979234.38	21.99	18.82	16.10	14.76
52200	100000	0	0	2693.80	10.06	246.01	979201.50	979234.27	22.13	19.01	16.08	14.93
52400	100000	0	0	2693.64	10.10	246.59	979202.24	979234.16	22.48	19.30	16.59	15.24
52600	100000	0	0	2693.64	10.16	247.42	979202.25	979234.06	22.72	19.62	16.82	15.45
52800	100000	0	0	2693.83	10.20	247.45	979202.45	979233.95	23.08	19.97	17.17	15.82
53000	100000	0	0	2693.96	10.26	247.78	979202.56	979233.85	23.08	20.06	17.46	16.11
53200	100000	0	0	2694.10	10.31	248.62	979202.73	979233.74	23.03	20.20	17.69	16.54
53400	100000	0	0	2693.95	10.36	250.68	979202.58	979233.63	24.02	21.07	18.68	16.87
53600	100000	0	0	2694.03	10.43	251.59	979202.66	979233.53	24.63	21.47	18.62	17.25
53800	100000	0	0	2694.37	10.51	252.16	979203.01	979233.46	25.09	22.05	19.19	17.82
54000	100000	0	0	2694.72	10.59	252.29	979203.37	979233.38	25.70	22.53	19.60	18.30
54200	100000	0	0	2694.92	10.67	254.35	979203.57	979233.27	25.84	23.03	20.14	18.81
54400	100000	0	0	2695.41	11.04	253.14	979204.07	979233.10	26.01	23.62	20.76	19.30
54600	100000	0	0	2696.02	11.10	250.00	979205.20	979233.00	25.55	24.28	21.40	20.01
	BASE # 01			2691.57	11.14		979200.00					

Data Computed on 24/12/81

ARBITORY O.G.

ARBITORY ELEVATION

Need to tie in Base #1 to National GRID, & determine elevation & point
- determine elevation for 54600E 100,000N
- determine position of all stations relative to Base #1 & grid coordinates
- positions given of stations would only be speculative due to GRID factors

SBH 4/9/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 32

SURVEYED FOR URA EXPLORATION Pty Ltd

LOCATION NILPINNA grid S'th Australia

COVERAGE LINE S0000N FROM 100000E TO 103000E

Loop Time 1.02 Hours Drift Rate -.06 Gravimeter #G 561 Operator R.ARNETT
Loop Drift: -.061 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 20/11/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 01				2691.35	11:34		979200.00					
S0000	100400	0	0	2691.01	11:43	251.10	979199.67	979235.61	19.41	16.29	13.45	12.00
S0000	101000	0	0	2691.18	11:49	251.09	979199.84	979235.67	19.36	16.24	13.39	11.94
S0000	101400	0	0	2691.72	11:54	248.73	979200.39	979236.04	19.22	16.10	13.26	11.93
S0000	102000	0	0	2692.65	12:02	245.40	979201.34	979236.09	19.24	16.14	13.37	12.03
S0000	102400	0	0	2693.20	12:07	243.06	979201.99	979236.47	19.34	16.27	13.51	12.18
S0000	103000	0	0	2693.78	12:15	242.82	979202.61	979236.72	19.45	16.40	13.65	12.32
S0000	100000	0	0	2691.20	12:25	249.35	979200.00	979235.44	19.57	16.43	13.61	12.25
BASE # 01				2691.37	12:35		979200.00					

Data computed on 24/12/01

SUL O GEOPHYSICS & CO

LOOP NUMBER .5

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 50000N FROM 99500E TO 95000E

Loop Time: 1.10 Hours Drift Rate: .04 Gravimeter #G 561 Operator: K.ANNETT
Loop Drift: .045 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 20/11/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 01				2691.30	13.15		979200.00					
50000	99500	0	0	2690.29	13.21	251.21	979199.47	979235.22	19.66	16.51	13.66	12.29
50000	99000	0	0	2690.12	13.28	253.10	979198.80	979235.01	19.63	16.44	13.58	12.20
50000	98500	0	0	2689.17	13.35	255.02	979197.84	979234.79	19.48	16.26	13.37	11.97
50000	98000	0	0	2687.51	13.41	262.84	979196.16	979234.58	19.19	16.09	13.13	11.70
50000	97500	0	0	2687.11	13.47	262.94	979195.75	979234.36	19.39	16.09	13.11	11.68
50000	97000	0	0	2687.37	13.53	259.73	979196.21	979234.14	19.36	16.09	13.15	11.74
50000	96500	0	0	2686.99	14.01	262.21	979195.60	979233.93	19.31	16.21	13.24	11.82
50000	96000	0	0	2686.39	14.07	264.14	979195.11	979233.72	19.30	16.30	13.39	11.95
50000	95500	0	0	2686.50	14.13	264.35	979195.17	979233.50	19.28	16.25	13.36	12.02
50000	95000	0	0	2686.80	14.21	265.72	979194.68	979233.29	20.01	16.66	13.66	12.21
BASE # 02				2686.89	14.21		979194.68					

Data computed on 24/12/01

SOLO GEOPHYSICS A CO

LOOP NUMBER 4

SURVEYED FOR: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

COVERAGE: LINE 50000N FROM 94500E TO 90000E

Loop Time: 1.12 Hours
Loop Drift: 147 Mgals

Drift Rate .13
Time Zone 9.500

Gravimeter #C 561
Calibration Factor 1.009

Operator: R ANNETT
Date: 20/11/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 02				2686.87	14.21		979194.68					
50000	94500	0	0	2685.80	14.33	266.36	979194.46	979233.08	20.14	16.79	13.78	12.33
50000	94000	0	0	2685.99	14.37	265.00	979194.55	979232.86	20.15	16.81	13.81	12.37
50000	93500	0	0	2685.92	14.45	264.25	979194.48	979232.65	20.12	16.80	13.81	12.37
50000	93000	0	0	2686.21	14.52	260.00	979195.29	979232.43	20.21	16.84	13.86	12.50
50000	92500	0	0	2685.81	14.59	266.91	979193.73	979232.22	20.30	17.01	14.02	12.57
50000	92000	0	0	2686.60	15.05	260.17	979195.12	979232.00	20.21	17.38	14.29	12.87
50000	91500	0	0	2686.37	15.12	260.53	979194.87	979231.79	20.25	17.30	14.33	12.91
50000	91000	0	0	2687.08	15.17	256.42	979195.58	979231.57	20.24	17.38	14.40	13.00
50000	90500	0	0	2686.97	15.23	257.58	979195.25	979231.36	20.21	17.42	14.56	13.15
50000	90000	0	0	2686.88	15.28	256.92	979195.32	979231.14	20.08	17.32	14.28	13.32
BASE # 03				2686.95	15.28		979195.32					

Data computed on 24/12/01

GOLD GEOPHYSICS & CO

LOOP NUMBER 5

SURVEYED FOR: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

COVERAGE: LINE 50000N FROM 85000E TO 80000E

Loop Time: 1.53 Hours | Drift Rate: -.03 | Gravimeter #: 521 | Operator: L.ANNETT
Loop Drift: -.040 Mgals | Time Zone: 9.500 | Calibration Factor: 1.009 | Date: 29/11/91

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	3.0
BASE # 04				2682.16	8:53		979179.55					
50000	85000	0	0	2682.16	8:53	282.35	979190.55	979229.00	23.03	20.28	17.09	15.55
50000	84500	0	0	2684.00	9:00	273.16	979192.41	979228.92	23.09	20.53	17.43	15.96
50000	84000	0	0	2683.08	9:07	275.79	979191.48	979228.59	23.75	20.20	17.16	15.66
50000	83500	0	0	2680.92	9:12	282.68	979189.31	979228.34	23.79	19.74	16.53	15.00
50000	83000	0	0	2680.50	9:18	282.33	979188.89	979228.14	23.82	19.47	16.20	14.74
50000	82500	0	0	2679.64	9:24	285.43	979188.02	979227.93	23.86	19.47	16.23	14.69
50000	82000	0	0	2677.92	9:31	294.64	979186.19	979227.72	23.47	19.26	16.43	14.82
50000	81500	0	0	2681.11	9:38	282.20	979189.51	979227.50	24.28	20.21	17.52	15.99
50000	81000	0	0	2682.88	9:45	280.58	979191.30	979227.29	25.00	22.39	19.20	17.67
50000	80500	0	0	2683.65	9:50	283.88	979191.90	979227.07	27.52	23.96	20.74	19.20
50000	80000	0	0	2684.78	9:56	280.98	979193.22	979226.86	28.32	24.79	21.61	20.08
BASE # 04				2682.12	10:25		979179.55					

Data computed on 24/12/91

SOLO GEOPHYSICS & CO

LOOP NUMBER: 6

SURVEYED FOR: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

COVERAGE: LINE 50000N FROM 85500E TO 90000E

Loop Time: 1.07 Hours | Drift Rate: -.13 | Gravimeter #: 561 | Operator: P.ARNETT
Loop Drift: -.141 Mgals | Time Zone: 9.500 | Calibration Factor: 1.009 | Date: 29/11/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.9
BASE # 04				2682.12	10.05		979190.55					
50000	85500	0	0	2685.11	10.35	269.47	979173.59	979229.22	23.01	20.43	17.30	15.91
50000	86000	0	0	2685.81	10.40	267.03	979174.30	979229.43	23.70	20.42	17.40	15.94
50000	86500	0	0	2686.96	10.46	261.50	979175.47	979229.64	23.51	20.22	17.26	15.84
50000	87000	0	0	2686.66	10.52	262.50	979175.17	979229.86	23.23	19.93	16.97	15.57
50000	87500	0	0	2685.99	10.58	265.38	979174.51	979230.07	22.67	19.64	16.63	15.19
50000	88000	0	0	2686.62	11.04	262.13	979175.17	979230.29	22.71	19.41	16.45	15.02
50000	88500	0	0	2686.62	11.09	260.34	979175.24	979230.50	22.16	19.09	15.94	14.52
50000	89000	0	0	2687.54	11.15	256.20	979176.14	979230.72	22.00	18.78	15.87	14.43
50000	89500	0	0	2686.85	11.24	257.70	979175.45	979230.93	21.38	18.14	15.23	13.82
50000	90000	0	0	2686.71	11.29	256.97	979175.32	979231.14	20.96	17.62	14.72	13.30
BASE # 03				2686.71	11.27		979175.32					

Data Computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 2

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE BASE LINE 1-2

Loop Time: 1.28 Hours | Drift Rate: -.02 | Gravimeter #G 561 | Operator R.ANNETT
Loop Drift: -.040 Mgals | Time Zone: 9.500 | Calibration Factor: 1.002 | Date: 29/11/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY tgm^-3 2.1	2.4	2.67	2.9
BASE # 01				2691.32	12.53		979200.00					
50000	95000	0	0	2686.02	13.20	265.72	979194.67	979233.29	19.99	16.65	13.64	12.19
50000	100000	0	0	2691.26	13.47	249.35	979199.96	979235.44	19.53	16.39	13.57	12.21
50000	95000	0	0	2686.01	14.14	265.72	979194.68	979233.29	20.00	16.66	13.65	12.21
BASE # 01				2691.20	14.40		979200.00					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER B

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE BASE TIE 2-3

Loop Time: 1.62 Hours | Drift Rate: .03 | Gravimeter #G 561 | Operator R.ANNETT
Loop Drift: .050 mgals | Time Zone 9.500 | Calibration Factor 1.009 | Date 29/11/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.9
BASE # 02				2686.02	15.07		979194.68					
50000	90000	0	0	2686.60	15.32	256.09	979195.33	979231.14	20.87	17.64	14.73	13.33
50000	95000	0	0	2686.04	15.56	265.72	979194.67	979233.29	20.00	16.66	13.65	12.20
50000	90000	0	0	2686.62	16.19	256.09	979195.32	979231.14	20.86	17.63	14.72	13.32
BASE # 02				2686.02	16.44		979194.68					

Data Computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 2

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE BASE TO 3-4

Loop Time: 1 28 Hours Drift Rate -.02 Gravimeter EC 561 Operator P.ANNETT
Loop Drift: -.030 Mgals Time Zone 9.500 Calibration Factor 1.009 Date 01/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 03				2687.35	9.45		979195.32					
50000	85000	0	0	2682.40	10.11	282.35	979190.54	979229.00	23.02	20.27	17.07	15.54
50000	90000	0	0	2687.34	10.37	256.97	979195.32	979231.14	20.06	17.63	14.73	13.33
50000	85000	0	0	2682.40	11.06	282.35	979190.55	979229.00	23.03	20.28	17.09	15.55
BASE # 03				2687.32	11.32		979195.32					

Data computed on 24/12/81

BOLJ GEOPHYSICS & CO

LOOP NUMBER 1.0

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 95000E FROM 50000N TO 54000N

Loop Time: 2.00 Hours
Loop Drift: -.091 Mgals
Drift Rate -.04
Time Zone: 9.500
Gravimeter #G 561
Calibration Factor: 1.009
Operator: R.BARRETT
Date: 01/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (UNITS/GC) 2.1	2.4	2.67	2.0
BASE # 02				2686.62	13.06		979194.68					
50000	95000	0	0	2686.62	13.06	265.72	979194.68	979233.29	20.01	16.66	13.66	12.21
50200	95000	0	0	2686.59	13.11	265.11	979194.86	979233.19	20.15	16.82	13.82	12.37
50400	95000	0	0	2686.61	13.16	266.82	979194.68	979233.08	20.46	17.10	14.00	12.63
50600	95000	0	0	2687.18	13.21	265.24	979195.17	979232.97	20.80	17.46	14.45	13.01
50800	95000	0	0	2687.14	13.26	266.25	979195.22	979232.82	21.09	17.74	14.72	13.27
51000	95000	0	0	2687.51	13.30	266.18	979195.39	979232.76	21.35	18.00	14.99	13.54
51200	95000	0	0	2688.39	13.36	262.19	979196.49	979232.69	21.67	18.37	15.41	13.98
51400	95000	0	0	2688.51	13.41	262.39	979196.61	979232.55	21.92	18.64	15.66	14.23
51600	95000	0	0	2689.07	13.46	260.54	979197.18	979232.44	22.21	18.93	15.99	14.57
51800	95000	0	0	2689.09	13.51	259.26	979196.86	979232.34	22.49	19.24	16.33	14.93
52000	95000	0	0	2690.21	13.55	256.98	979198.40	979232.23	22.75	19.52	16.62	15.22
52200	95000	0	0	2690.62	13.59	257.19	979198.75	979232.12	23.14	19.92	17.02	15.63
52400	95000	0	0	2690.95	14.03	255.57	979199.09	979232.02	23.45	20.23	17.34	15.95
52600	95000	0	0	2691.47	14.08	254.21	979199.62	979231.91	23.78	20.56	17.71	16.32
52800	95000	0	0	2691.91	14.13	253.46	979199.92	979231.81	24.03	20.84	17.97	16.59
53000	95000	0	0	2692.13	14.17	252.05	979200.27	979231.70	24.36	21.16	18.30	16.95
53200	95000	0	0	2692.70	14.23	251.24	979200.87	979231.59	24.62	21.54	18.69	17.32
53400	95000	0	0	2693.02	14.27	250.76	979201.19	979231.49	25.01	21.90	19.05	17.68
53600	95000	0	0	2693.31	14.31	250.16	979201.57	979231.38	25.37	22.22	19.39	18.03
53800	95000	0	0	2693.34	14.37	249.46	979202.03	979231.28	25.70	22.65	19.83	18.47
54000	95000	0	0	2693.36	14.44	252.57	979201.55	979231.17	26.11	22.94	20.00	18.70
BASE # 02				2686.53	15.11		979194.60					

Data computed on 24/12/01

GOLD GEOPHYSICS & CO

LOOP NUMBER 11

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid 9th Australia

COVERAGE LINE 100000E FROM 50000N TO 47800N

Loop Time: 1.90 Hours Drift Rate -.03 Gravimeter #G 037 Operator M.SLAVIN
Loop Drift: -.063 Mgals Time Zone: 9.500 Calibration Factor: 1.047 Date: 01/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.0
BASE # 01				2700.69	9.49		979200.00					
50000	100000	0	0	2700.89	9.59	249.35	979200.00	979235.44	19.97	16.43	13.61	12.25
49800	100000	0	0	2700.39	9.58	250.35	979199.80	979235.54	19.48	16.34	13.50	12.14
49600	100000	0	0	2700.14	10.07	251.53	979199.54	979235.65	19.38	16.22	13.37	12.00
49400	100000	0	0	2707.81	10.14	253.41	979199.20	979235.75	19.47	16.10	13.31	11.93
49200	100000	0	0	2707.51	10.27	255.19	979198.89	979235.86	19.32	16.11	13.23	11.84
49000	100000	0	0	2707.23	10.30	257.10	979198.60	979235.97	19.14	16.00	13.09	11.88
48800	100000	0	0	2707.30	10.41	257.09	979198.68	979236.07	19.50	16.25	13.34	11.93
48600	100000	0	0	2707.23	10.48	258.92	979198.62	979236.18	19.36	16.20	13.32	11.96
48400	100000	0	0	2707.03	10.58	256.59	979199.35	979236.28	19.67	16.44	13.54	12.14
48200	100000	0	0	2700.45	11.12	255.20	979199.90	979236.39	19.72	16.70	13.81	12.41
48000	100000	0	0	2709.04	11.19	253.26	979200.52	979236.50	20.00	16.81	13.94	12.56
47800	100000	0	0	2708.95	11.26	255.30	979200.43	979236.60	20.17	16.96	14.07	12.60
BASE # 01				2708.53	11.30		979200.00					

Data Computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 112

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 100000E FROM 47000N TO 44000N

Loop Time: 2.10 Hours Drift Rate -.03 Gravimeter # 032 Operator M.SLAVIN
Loop Drift: -.073 Mgals Time Zone 9.500 Calibration Factor: 1.047 Date: 01/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 05				2708.00	12.23		979200.43					
47000	100000	0	0	2708.00	12.23	255.40	979200.43	979236.60	20.17	16.05	14.06	12.67
47600	100000	0	0	2709.12	12.30	255.02	979200.66	979236.71	20.33	17.11	14.22	12.83
47400	100000	0	0	2709.37	12.37	255.93	979200.83	979236.82	20.42	17.25	14.35	12.96
47200	100000	0	0	2709.44	12.13	256.15	979201.01	979236.92	20.52	17.39	14.47	13.08
47000	100000	0	0	2709.24	12.50	256.02	979201.33	979237.03	20.72	17.55	14.66	13.26
46800	100000	0	0	2710.00	12.57	254.17	979202.00	979237.15	20.93	17.74	14.86	13.48
46600	100000	0	0	2710.16	13.03	256.23	979201.77	979237.24	21.06	17.83	14.93	13.54
46400	100000	0	0	2710.51	13.15	255.86	979202.15	979237.35	21.20	17.93	15.02	13.70
46200	100000	0	0	2710.34	13.28	257.47	979201.97	979237.45	21.31	18.00	15.16	13.76
46000	100000	0	0	2710.66	13.36	256.87	979202.31	979237.56	21.42	18.11	15.26	13.86
45800	100000	0	0	2711.13	13.34	255.69	979202.81	979237.66	21.55	18.13	15.44	14.04
45600	100000	0	0	2711.41	13.41	255.11	979203.10	979237.77	21.61	18.18	15.51	14.10
45400	100000	0	0	2711.27	13.49	256.61	979202.96	979237.88	21.69	18.27	15.56	14.16
45200	100000	0	0	2712.91	13.58	251.77	979204.27	979237.98	21.69	18.28	15.65	14.42
45000	100000	0	0	2713.22	14.06	249.19	979205.01	979238.09	21.90	18.36	15.94	14.58
44800	100000	0	0	2713.27	14.13	249.58	979205.07	979238.19	21.95	18.41	15.99	14.63
BASE # 05				2708.03	14.29		979200.43					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 3.3

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 100000E FROM 44800N TO 42200N

Loop Time: 1.82 Hours
Loop Drift: -.073 Mgals
Drift Rate -.04
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator: R.SLAVIN
Date: 01/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 06				2713.31	14:38		979205.09					
44800	100000	0	0	2713.31	14.58	249.50	979205.09	979238.19	21.95	18.81	15.99	14.63
44600	100000	0	0	2713.25	15.02	248.43	979205.56	979238.30	22.06	18.93	16.12	14.77
44400	100000	0	0	2714.59	15.17	245.56	979206.44	979238.41	22.20	19.12	16.34	15.00
44200	100000	0	0	2714.72	15.32	246.81	979206.58	979238.51	22.34	19.24	16.46	15.12
44000	100000	0	0	2715.15	15.48	244.96	979207.04	979238.62	22.44	19.38	16.60	15.27
43800	100000	0	0	2715.32	15.57	245.21	979207.22	979238.73	22.59	19.50	16.73	15.39
43600	100000	0	0	2715.72	15.44	244.27	979207.65	979238.83	22.70	19.63	16.86	15.53
43400	100000	0	0	2716.12	15.51	243.72	979208.14	979238.94	22.82	19.90	17.14	15.82
43200	100000	0	0	2716.36	15.52	244.22	979208.32	979239.04	23.17	20.10	17.33	16.00
43000	100000	0	0	2716.44	16.04	245.53	979208.41	979239.15	23.32	20.34	17.56	16.23
42800	100000	0	0	2716.91	16.11	244.20	979208.91	979239.26	23.60	20.48	17.83	16.49
42600	100000	0	0	2717.12	16.17	245.38	979209.13	979239.36	23.70	20.81	18.04	16.70
42400	100000	0	0	2717.44	16.24	245.81	979209.47	979239.47	24.05	20.92	18.20	16.86
42200	100000	0	0	2717.80	16.33	244.26	979209.95	979239.57	24.26	21.19	18.42	17.09
BASE # 05				2713.24	16:47		979205.09					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 14

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 100000E FROM 42200N TO 40000N

Loop Time: 1.35 Hours Drift Rate -.04 Gravimeter #G 037 Operator N.GLAVIN
Loop Drift: -.052 Mgals Time Zone: 9.500 Calibration Factor: 1.047 Date: 02/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 07				2718.06	9.48		979209.94					
42200	100000	0	0	2718.96	9.48	244.26	979209.94	979239.57	24.25	21.18	18.41	17.08
42000	100000	0	0	2718.50	9.56	243.82	979210.41	979239.68	24.33	21.20	18.53	17.20
41800	100000	0	0	2719.16	10.03	241.34	979211.10	979239.79	24.55	21.52	18.79	17.47
41600	100000	0	0	2719.58	10.10	240.77	979211.50	979239.82	24.52	21.70	18.97	17.66
41400	100000	0	0	2719.64	10.16	241.98	979211.61	979240.00	24.99	21.95	19.21	17.89
41200	100000	0	0	2719.71	10.23	243.42	979211.69	979240.11	25.28	22.22	19.47	18.14
41000	100000	0	0	2720.57	10.30	241.07	979212.60	979240.21	25.56	22.53	19.80	18.49
40800	100000	0	0	2721.14	10.36	240.27	979213.20	979240.32	25.80	22.86	20.14	18.83
40600	100000	0	0	2721.32	10.41	241.05	979213.44	979240.42	26.19	23.16	20.43	19.12
40400	100000	0	0	2721.93	10.47	239.85	979214.03	979240.53	26.41	23.39	20.68	19.37
40200	100000	0	0	2722.09	10.52	240.58	979214.20	979240.64	26.64	23.61	20.89	19.58
40000	100000	0	0	2722.32	10.57	241.35	979214.45	979240.74	26.84	23.81	21.10	19.86
BASE # 07				2718.01	11.02		979209.94					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 15

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 95000E FROM 54000N TO 57400N

Loop Time: 1.83 Hours
Loop Drift: -.010 Mgals
Drift Rate -.01
Time Zone 9.500
Gravimeter #G 561
Calibration Factor: 1.009
Operator P.ANNETT
Date: 02/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 08				2693.46	9.31		979201.55					
54000	95000	0	0	2693.46	9.31	252.67	979201.55	979231.17	26.12	22.94	20.00	18.70
54200	95000	0	0	2693.93	9.35	253.04	979201.82	979231.06	26.50	23.30	20.53	19.15
54400	95000	0	0	2694.05	9.31	252.58	979202.15	979230.96	26.98	23.72	20.96	19.49
54600	95000	0	0	2694.13	9.35	253.03	979202.23	979230.85	27.30	24.11	21.24	19.86
54800	95000	0	0	2694.10	9.39	254.03	979202.20	979230.75	27.66	24.46	21.58	20.19
55000	95000	0	0	2694.21	9.43	255.01	979202.31	979230.64	28.05	24.84	21.95	20.55
55230	95000	0	0	2694.23	9.48	255.11	979202.83	979230.52	28.59	25.39	22.49	21.10
55400	95000	0	0	2694.73	9.52	255.13	979202.83	979230.43	28.86	25.64	22.75	21.35
55600	95000	0	0	2694.06	9.54	260.20	979202.16	979230.32	29.23	25.96	23.02	21.60
55800	95000	0	0	2693.86	10.01	262.20	979201.96	979230.22	29.58	26.28	23.31	21.89
56000	95000	0	0	2693.67	10.05	264.08	979201.77	979230.11	29.91	26.59	23.60	22.16
56200	95000	0	0	2694.52	10.07	260.75	979202.59	979230.01	30.25	26.97	24.02	22.60
56400	95000	0	0	2693.82	10.24	265.43	979201.92	979229.90	30.57	27.23	24.23	22.78
56600	95000	0	0	2693.50	10.28	267.23	979201.60	979229.79	30.91	27.54	24.50	23.05
56800	95000	0	0	2694.26	10.36	265.42	979202.36	979229.69	31.22	27.89	24.88	23.44
57000	95000	0	0	2694.10	10.40	262.66	979202.20	979229.58	31.44	28.09	25.02	23.62
57200	95000	0	0	2695.68	10.44	260.48	979203.80	979229.48	31.78	28.50	25.56	24.14
57400	95000	0	0	2696.02	10.49	257.38	979204.14	979229.37	31.96	28.78	25.77	24.36
BASE # 08				2693.45	11.11		979201.55					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 16

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 95000E FROM 57400N TO 61000N

Loop Time: 1.65 Hours | Drift Rate: -.02 | Gravimeter #G 561 | Operator P.ANNETT
Loop Drift: -.040 Mgals | Time Zone: 9.50u | Calibration Factor: 1.009 | Date: 02/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 09				2696.02	11.11		979204.14					
57400	95000	0	0	2696.02	11.34	259.20	979204.14	979229.47	31.96	28.70	25.77	24.36
57600	95000	0	0	2695.84	11.42	256.16	979204.97	979229.26	32.21	28.99	26.09	24.70
57800	95000	0	0	2698.36	11.48	250.23	979206.51	979229.16	32.55	29.40	26.57	25.20
58000	95000	0	0	2698.54	11.53	249.90	979206.69	979229.05	32.70	29.64	26.81	25.45
58200	95000	0	0	2698.35	11.57	250.88	979206.50	979228.95	32.80	29.72	26.89	25.52
58400	95000	0	0	2699.04	12.01	248.35	979207.20	979228.84	33.12	30.08	27.19	25.83
58600	95000	0	0	2699.11	12.06	248.42	979207.27	979228.74	33.33	30.21	27.40	26.05
58800	95000	0	0	2699.06	12.10	248.06	979207.22	979228.64	33.49	30.36	27.54	26.19
59000	95000	0	0	2699.51	12.14	247.25	979207.68	979228.52	33.69	30.58	27.79	26.44
59200	95000	0	0	2698.82	12.17	250.30	979207.03	979228.42	33.83	30.66	27.85	26.48
59400	95000	0	0	2699.03	12.20	250.29	979207.20	979228.31	34.02	30.95	28.12	26.75
59600	95000	0	0	2699.17	12.26	250.18	979207.34	979228.21	34.32	31.17	28.34	26.98
59800	95000	0	0	2699.00	12.30	247.91	979207.97	979228.10	34.56	31.44	28.64	27.29
60000	95000	0	0	2698.76	12.34	247.50	979208.14	979227.99	34.78	31.59	28.79	27.44
60200	95000	0	0	2699.70	12.37	247.64	979207.88	979227.89	34.62	31.50	28.70	27.35
60400	95000	0	0	2700.03	12.41	245.93	979208.21	979227.78	34.69	31.60	28.81	27.47
60600	95000	0	0	2700.30	12.45	244.47	979208.48	979227.68	34.73	31.66	28.89	27.56
60800	95000	0	0	2700.64	12.51	242.40	979208.83	979227.54	34.73	31.68	28.94	27.62
61000	95000	0	0	2700.64	12.56	241.80	979208.83	979227.42	34.72	31.68	28.94	27.63
BASE # 09				2695.98	13.13		979204.14					

Data computed on 24/12/81

SOLO GEOPHYSICS & QU

LOOP NUMBER 17

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 95000E FROM 50000N TO 46400N

Loop Time: 1.95 Hours Drift Rate 0.00 Gravimeter #G 561 Operator K.ANNETT
Loop Drift: 0.000 Mgals Time Zone 9.500 Calibration Factor: 1.009 Date: 03/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 02				2686.60	11.52		979194.68					
50000	95000	0	0	2686.60	11.52	265.78	979194.68	979233.29	20.01	16.66	13.66	12.21
49800	95000	0	0	2686.57	11.58	265.42	979194.65	979233.40	19.88	16.47	13.46	12.02
49600	95000	0	0	2686.12	12.05	267.42	979194.20	979233.50	19.68	16.32	13.30	11.84
49400	95000	0	0	2685.74	12.12	269.17	979193.81	979233.61	19.58	16.20	13.15	11.68
49200	95000	0	0	2685.14	12.16	272.00	979193.21	979233.71	19.51	16.09	13.01	11.53
49000	95000	0	0	2684.94	12.20	273.01	979193.01	979233.82	19.54	16.10	13.01	11.51
48800	95000	0	0	2684.95	12.29	273.74	979193.02	979233.93	19.47	16.03	12.94	11.44
48600	95000	0	0	2685.13	12.32	271.41	979193.20	979234.03	19.44	16.03	12.96	11.48
48400	95000	0	0	2686.60	12.37	266.68	979194.68	979234.14	19.37	16.02	13.00	11.55
48200	95000	0	0	2686.75	12.41	264.88	979194.83	979234.24	19.22	15.89	12.89	11.45
48000	95000	0	0	2687.14	12.45	264.39	979195.22	979234.35	19.20	15.87	12.88	11.44
47800	95000	0	0	2686.76	12.51	267.16	979194.84	979234.46	19.32	15.96	12.94	11.48
47600	95000	0	0	2687.30	12.59	264.88	979195.47	979234.56	19.33	16.00	13.01	11.56
47400	95000	0	0	2687.33	13.04	266.18	979195.42	979234.67	19.46	16.12	13.11	11.66
47200	95000	0	0	2687.43	13.08	267.09	979195.52	979234.77	19.66	16.30	13.28	11.82
47000	95000	0	0	2687.32	13.12	267.88	979195.41	979234.88	19.86	16.46	13.44	11.97
46800	95000	0	0	2687.06	13.17	271.16	979195.14	979234.99	19.97	16.56	13.50	12.02
46600	95000	0	0	2687.52	13.21	270.56	979195.61	979235.09	20.20	16.80	13.74	12.26
46400	95000	0	0	2687.42	13.26	272.00	979195.56	979235.20	20.36	16.94	13.86	12.39
BASE # 02				2686.60	13.42		979194.68					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 18

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 95000E FROM 46400N TO 42000N

Loop Time: 1.95 Hours Drift Rate -.01 Gravimeter #G 561 Operator: R.ARNETT
Loop Drift: -.020 Mgals Time Zone 9.500 Calibration Factor: 1.009 Date: 03/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 10				2687.45	14.44		979195.56					
46400	95000	0	0	2687.45	14.44	272.00	979195.56	979235.20	20.36	16.94	13.86	12.30
46200	95000	0	0	2688.15	14.40	270.13	979196.27	979235.30	20.55	17.15	14.10	12.63
46000	95000	0	0	2688.38	14.53	271.12	979196.40	979235.41	20.39	17.39	14.32	12.84
45800	95000	0	0	2688.09	14.57	270.47	979197.01	979235.52	21.16	17.76	14.70	13.23
45600	95000	0	0	2689.64	15.01	269.24	979197.77	979235.62	21.54	18.16	15.11	13.64
45400	95000	0	0	2690.10	15.05	268.06	979198.24	979235.73	21.82	18.48	15.39	13.93
45200	95000	0	0	2691.06	15.10	266.17	979199.21	979235.83	22.09	18.74	15.73	14.28
45000	95000	0	0	2691.71	15.14	264.14	979199.86	979235.94	22.23	18.91	15.92	14.48
44800	95000	0	0	2690.71	15.20	269.37	979198.85	979236.05	22.23	18.84	15.79	14.33
44600	95000	0	0	2690.00	15.24	269.20	979199.03	979236.15	22.26	18.89	15.83	14.36
44400	95000	0	0	2690.45	15.28	270.04	979198.59	979236.26	22.10	18.69	15.63	14.15
44200	95000	0	0	2690.41	15.32	270.03	979198.55	979236.36	21.95	18.55	15.48	14.00
44000	95000	0	0	2690.45	15.36	270.05	979198.59	979236.47	21.94	18.54	15.48	14.00
43800	95000	0	0	2689.72	15.40	272.09	979198.06	979236.58	21.58	18.06	15.00	13.52
43600	95000	0	0	2688.71	15.45	277.03	979196.84	979236.68	21.27	17.70	14.65	13.14
43400	95000	0	0	2689.13	15.50	275.43	979197.27	979236.80	21.15	17.61	14.60	13.10
43200	95000	0	0	2690.24	15.54	270.76	979198.39	979236.90	21.11	17.71	14.65	13.10
43000	95000	0	0	2690.85	15.59	267.53	979199.00	979237.00	21.06	17.64	14.66	13.20
42800	95000	0	0	2691.11	16.03	266.61	979199.26	979237.11	20.97	17.62	14.60	13.15
42600	95000	0	0	2691.42	16.07	265.53	979199.65	979237.21	21.01	17.67	14.67	13.22
42400	95000	0	0	2692.04	16.11	263.37	979200.20	979237.32	20.98	17.67	14.69	13.25
42200	95000	0	0	2692.50	16.15	262.02	979200.75	979237.43	21.12	17.83	14.86	13.44
42000	95000	0	0	2692.50	16.19	263.85	979200.67	979237.53	21.34	18.02	15.04	13.60
BASE # 10				2687.45	16.41		979195.56					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 19

SURVEYED FOR: **CRA EXPLORATION Pty Ltd**

LOCATION: **NILPINNA grid Sth Australia**

COVERAGE: LINE 90000E FROM 50800N TO 53600N

Loop Time: 2.02 Hours | Drift Rate: .01 | Gravimeter #G 037 | Operator: A.SLAVIN
Loop Drift: .010 Mgals | Time Zone: 9.500 | Calibration Factor: 1.047 | Date: 03/12/91

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 03				2704.11	9.57		979195.32					
50000	90000	0	0	2704.11	9.57	256.97	979195.32	979231.14	20.86	17.63	14.72	13.32
50200	90000	0	0	2704.12	10.05	256.71	979195.33	979231.04	20.92	17.69	14.78	13.38
50400	90000	0	0	2704.16	10.10	256.60	979195.37	979230.93	21.04	17.82	14.91	13.51
50600	90000	0	0	2703.88	10.16	258.09	979194.99	979230.83	21.19	18.04	15.11	13.68
50800	90000	0	0	2703.77	10.21	259.48	979194.96	979230.72	21.46	18.20	15.26	13.85
51000	90000	0	0	2703.47	10.28	260.87	979194.65	979230.61	21.58	18.38	15.35	13.92
51200	90000	0	0	2703.76	10.33	259.93	979194.95	979230.51	21.28	18.51	15.57	14.15
51400	90000	0	0	2704.13	10.38	257.88	979195.34	979230.40	21.08	18.56	15.64	14.24
51600	90000	0	0	2703.96	10.43	258.48	979195.16	979230.30	21.00	18.63	15.70	14.30
51800	90000	0	0	2703.54	10.48	260.41	979194.72	979230.19	21.02	18.70	15.75	14.34
52000	90000	0	0	2703.39	10.55	261.02	979194.56	979230.09	22.05	18.77	15.82	14.40
52200	90000	0	0	2703.17	11.02	261.95	979194.35	979229.98	22.13	18.84	15.88	14.45
52400	90000	0	0	2702.56	11.08	264.59	979193.69	979229.87	22.18	18.86	15.86	14.42
52600	90000	0	0	2702.20	11.14	266.02	979193.31	979229.77	22.23	18.88	15.87	14.42
52800	90000	0	0	2701.85	11.20	267.71	979192.95	979229.66	22.34	18.97	15.94	14.48
53000	90000	0	0	2702.33	11.26	265.83	979193.45	979229.56	22.25	18.92	15.92	14.48
53200	90000	0	0	2702.37	11.31	265.08	979193.49	979229.45	22.21	19.10	16.18	14.74
53400	90000	0	0	2702.60	11.37	263.71	979193.61	979229.34	22.14	19.13	16.14	14.80
53600	90000	0	0	2701.81	11.43	267.52	979192.90	979229.24	22.68	19.31	16.28	14.83
BASE # 03				2704.12	11.58		979195.32					

Data computed on 24/12/91

SOLO GEOPHYSICS & CO

LOOP NUMBER 20

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 90000E FROM 53600N TO 57200N

Loop Time: 2.07 Hours Drift Rate -.02 Gravimeter #G 037 Operator N.SLAVIN
Loop Drift: -.042 Mgals Time Zone 9.500 Calibration Factor: 1.047 Date: 03/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.0
BASE # 13				2701.83	12 38		979192.91					
53600	90000	0	0	2701.83	12 38	267.52	979192.91	979229.24	22.68	19.32	16.29	14.04
53800	90000	0	0	2701.51	12 40	268.87	979192.58	979229.13	22.76	19.38	16.34	14.07
54000	90000	0	0	2702.00	12 53	267.01	979193.09	979229.03	22.97	19.61	16.59	15.13
54200	90000	0	0	2701.70	13 02	268.91	979192.78	979228.92	23.18	19.86	16.76	15.29
54400	90000	0	0	2701.64	13 09	269.37	979192.72	979228.82	23.33	19.94	16.89	15.42
54600	90000	0	0	2701.53	13 14	270.14	979192.61	979228.71	23.49	20.09	17.04	15.56
54800	90000	0	0	2701.71	13 19	269.44	979192.80	979228.60	23.63	20.24	17.19	15.73
55000	90000	0	0	2702.36	13 25	266.31	979193.46	979228.50	23.93	20.38	17.37	15.92
55200	90000	0	0	2702.04	13 31	264.66	979193.99	979228.39	23.90	20.65	17.65	16.21
55400	90000	0	0	2703.07	13 38	263.03	979194.25	979228.29	24.16	20.85	17.86	16.42
55600	90000	0	0	2703.35	13 42	262.04	979194.52	979228.18	24.30	21.02	18.04	16.61
55800	90000	0	0	2703.30	13 47	263.41	979194.45	979228.07	24.40	21.13	18.19	16.78
56000	90000	0	0	2703.72	13 52	261.66	979194.91	979227.97	24.67	21.38	18.41	16.99
56200	90000	0	0	2704.22	13 57	259.55	979195.51	979227.86	24.96	21.64	18.70	17.29
56400	90000	0	0	2704.54	14 02	258.17	979195.78	979227.76	24.97	21.72	18.80	17.40
56600	90000	0	0	2704.74	14 07	257.68	979195.99	979227.65	25.16	21.92	19.01	17.60
56800	90000	0	0	2705.06	14 13	256.55	979196.33	979227.55	25.37	22.15	19.24	17.85
57000	90000	0	0	2705.35	14 18	255.30	979196.63	979227.44	25.51	22.30	19.41	18.02
57200	90000	0	0	2705.33	14 23	255.47	979196.61	979227.33	25.63	22.42	19.53	18.14
BASE # 13				2701.99	14 42		979192.91					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 224

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 90000E FROM 57200N TO 61000N

Loop Time: 1.90 Hours
Loop Drift: -.021 Mgals
Drift Rate: -.01
Time Zone 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator: R.SLAVIN
Date: 03/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 14				2705.09	15.18		979196.60					
57200	90000	0	0	2705.09	15.18	255.47	979196.60	979227.33	25.62	22.41	17.52	16.13
57400	90000	0	0	2705.32	15.24	252.72	979197.28	979227.23	25.48	22.68	17.74	16.39
57600	90000	0	0	2704.99	15.29	256.96	979196.29	979227.12	25.85	22.62	19.71	18.31
57800	90000	0	0	2705.24	15.34	252.61	979197.20	979227.02	25.79	22.81	19.96	18.56
58000	90000	0	0	2706.27	15.39	250.74	979197.63	979226.91	26.03	22.88	20.04	18.67
58200	90000	0	0	2705.99	15.45	252.87	979197.32	979226.80	25.12	22.95	20.09	18.72
58400	90000	0	0	2706.09	15.50	251.52	979197.44	979226.70	26.03	23.07	20.22	18.85
58600	90000	0	0	2706.43	15.55	250.81	979197.80	979226.59	26.07	23.23	20.40	19.04
58800	90000	0	0	2706.48	15.59	250.26	979197.85	979226.49	26.07	23.42	20.59	19.23
59000	90000	0	0	2706.06	16.05	248.71	979198.21	979226.38	26.04	23.61	20.80	19.44
59200	90000	0	0	2706.09	16.09	248.25	979198.37	979226.28	26.05	23.73	20.92	19.57
59400	90000	0	0	2707.09	16.14	248.80	979198.50	979226.17	25.95	23.83	21.12	19.77
59600	90000	0	0	2706.98	16.17	249.09	979198.28	979226.06	25.96	24.03	21.21	19.85
59800	90000	0	0	2707.01	16.22	248.75	979198.41	979225.96	25.98	24.16	21.44	19.99
60000	90000	0	0	2706.93	16.27	250.08	979198.12	979225.85	27.33	24.09	21.46	20.10
60200	90000	0	0	2706.57	16.33	250.14	979198.10	979225.75	27.32	24.38	21.53	20.16
60400	90000	0	0	2706.76	16.39	249.69	979198.15	979225.64	27.39	24.45	21.62	20.26
60600	90000	0	0	2706.55	16.46	249.98	979198.04	979225.54	27.43	24.45	21.66	20.30
60800	90000	0	0	2706.46	16.51	250.62	979197.84	979225.43	27.28	24.50	21.71	20.34
61000	90000	0	0	2706.15	16.56	251.54	979197.53	979225.32	27.14	24.55	21.78	20.42
BASE # 14				2705.27	17.12		979196.60					

Data Computed on 24/12/01

SOLO GEOPHYSICS & CO

GROUP NUMBER 223

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 95000E FROM 42000N TO 38000N

Loop Time: 1.73 Hours Drift Rate .02 Gravimeter #C 561 Operator P ANNETT
Loop Drift: .040 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 04/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 11				2692.46	9 08		979200 67					
42000	95000	0	0	2692.46	9 08	263.08	979200 67	979237.53	21.34	18.02	15.04	13.60
41800	95000	0	0	2692.93	9 13	265.04	979200 48	979237.74	21.46	18.14	15.11	13.66
41600	95000	0	0	2692.52	9 20	265.04	979200 73	979237.74	21.60	18.26	15.25	13.81
41400	95000	0	0	2693.94	9 28	260.82	979202 15	979237.85	21.74	18.56	15.61	14.19
41200	95000	0	0	2693.63	9 34	263.33	979201.84	979237.96	21.97	18.66	15.60	14.25
41000	95000	0	0	2694.34	9 41	261.24	979202 55	979238.08	22.13	18.94	15.96	14.58
40800	95000	0	0	2695.08	9 46	259.15	979203 30	979238.17	22.37	19.20	16.26	14.84
40600	95000	0	0	2696.02	9 50	257.24	979204 31	979238.29	22.66	19.55	16.64	15.24
40400	95000	0	0	2696.29	9 54	257.18	979204 51	979238.39	22.86	19.63	16.72	15.32
40200	95000	0	0	2697.14	9 58	254.47	979205 37	979238.49	22.92	19.80	16.94	15.55
40000	95000	0	0	2697.87	10 02	252.13	979206 11	979238.59	23.13	19.96	17.11	15.73
39800	95000	0	0	2698.60	10 07	249.77	979206 84	979238.74	23.17	20.05	17.23	15.85
39600	95000	0	0	2698.30	10 11	251.14	979206.54	979238.81	23.13	19.97	17.13	15.76
39400	95000	0	0	2698.17	10 15	250.43	979206.71	979238.91	23.26	19.89	17.05	15.69
39200	95000	0	0	2698.44	10 19	250.38	979206.67	979239.02	22.93	19.78	16.95	15.58
39000	95000	0	0	2698.72	10 23	248.28	979206.76	979239.13	22.80	19.68	16.82	15.52
38800	95000	0	0	2698.46	10 27	250.14	979206.66	979239.23	22.61	19.46	16.63	15.27
38600	95000	0	0	2698.71	10 31	249.25	979206.84	979239.34	22.54	19.39	16.55	15.19
38400	95000	0	0	2698.86	10 35	248.58	979207.09	979239.34	22.48	19.36	16.54	15.19
38200	95000	0	0	2699.22	10 39	247.34	979207.45	979239.56	22.54	19.40	16.58	15.25
38000	95000	0	0	2699.10	10 43	248.67	979207.33	979239.65	22.53	19.40	16.59	15.23
BASE # 11				2692.50	10 52		979200 67					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 22.5

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 95000E FROM 38000N TO 36000N

Loop Time: .82 Hours Drift Rate: -.01 Gravimeter #C 561 Operator: R.ANNETT
Loop Drift: -.010 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 04/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 12				2699.12	11.03		979207.33					
38000	95000	0	0	2699.12	11.03	248.67	979207.33	979239.65	22.53	19.40	16.59	15.03
37800	95000	0	0	2699.25	11.08	250.05	979207.46	979239.76	20.06	19.22	16.09	15.32
37600	95000	0	0	2699.49	11.12	249.84	979207.70	979239.82	22.95	19.81	16.70	15.62
37400	95000	0	0	2699.55	11.16	250.25	979207.72	979239.92	23.11	19.95	17.17	15.76
37200	95000	0	0	2699.69	11.20	251.02	979207.91	979240.08	23.26	20.10	17.25	15.88
37000	95000	0	0	2700.43	11.24	249.61	979208.65	979240.19	23.53	20.32	17.57	16.23
36800	95000	0	0	2701.23	11.28	247.74	979209.46	979240.29	23.82	20.70	17.90	16.57
36600	95000	0	0	2701.88	11.34	247.09	979209.31	979240.40	24.06	20.92	18.09	16.78
36400	95000	0	0	2701.62	11.38	247.81	979209.86	979240.50	24.28	21.15	18.33	16.98
36200	95000	0	0	2701.56	11.42	250.29	979209.80	979240.61	24.50	21.34	18.51	17.14
36000	95000	0	0	2702.05	11.46	250.03	979210.29	979240.72	24.73	21.59	18.76	17.39
BASE # 12				2699.11	11.55		979207.33					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 24

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 90000E FROM 61000N TO 65000N

Loop Time: 1.95 Hours
Loop Drift: -.010 Mgals
Drift Rate -.01
Time Zone: 9.500
Gravimeter #C 037
Calibration Factor: 1.047
Operator M.SLAVIN
Date: 04/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 15				2706.23	9.30		979197.53					
61000	90000	0	0	2706.23	9.30	251.64	979197.53	979225.32	27.92	24.55	21.70	20.36
61200	90000	0	0	2706.04	9.45	249.75	979197.86	979225.22	27.99	24.63	21.80	20.44
61400	90000	0	0	2706.09	9.50	248.35	979198.22	979225.11	27.89	24.77	21.96	20.61
61600	90000	0	0	2707.19	9.54	246.80	979198.54	979225.01	27.75	24.84	22.05	20.71
61800	90000	0	0	2706.43	9.59	249.95	979197.74	979224.90	27.90	24.83	22.01	20.64
62000	90000	0	0	2706.72	10.03	247.40	979198.33	979224.80	28.12	25.01	22.21	20.86
62200	90000	0	0	2707.20	10.09	245.86	979198.63	979224.69	28.18	25.09	22.30	20.96
62400	90000	0	0	2707.13	10.14	246.63	979198.48	979224.58	28.30	25.20	22.40	21.06
62600	90000	0	0	2707.15	10.19	246.40	979198.50	979224.48	28.37	25.27	22.49	21.14
62800	90000	0	0	2706.93	10.24	247.60	979198.16	979224.37	28.41	25.29	22.49	21.14
63000	90000	0	0	2706.47	10.30	249.86	979197.79	979224.27	28.46	25.33	22.51	21.15
63200	90000	0	0	2706.46	10.34	248.86	979197.78	979224.16	28.51	25.38	22.57	21.21
63400	90000	0	0	2706.51	10.38	248.20	979197.83	979224.06	28.63	25.51	22.69	21.34
63600	90000	0	0	2707.21	10.42	245.42	979198.56	979223.95	28.75	25.66	22.80	21.55
63800	90000	0	0	2707.98	10.46	242.38	979199.26	979223.84	28.89	25.84	23.10	21.78
64000	90000	0	0	2708.36	10.51	240.88	979199.72	979223.74	28.99	25.97	23.25	21.96
64200	90000	0	0	2708.91	10.56	238.12	979200.24	979223.63	29.13	26.14	23.45	22.15
64400	90000	0	0	2708.97	11.01	237.16	979200.41	979223.53	29.20	26.21	23.53	22.24
64600	90000	0	0	2709.03	11.06	236.92	979200.47	979223.42	29.32	26.34	23.66	22.37
64800	90000	0	0	2708.71	11.10	238.32	979200.14	979223.32	29.39	26.39	23.70	22.40
65000	90000	0	0	2708.02	11.15	239.09	979200.25	979223.21	29.52	26.52	23.83	22.54
BASE # 15				2706.28	11.35		979197.53					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

****
LOOP NUMBER 25
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SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 90000E FROM 65000N TO 67000N

Loop Time: 1.02 Hours
Loop Drift: -.010 Mgals
Drift Rate: -.01
Time Zone: 9.500
Gravimeter #: 037
Calibration Factor: 1.042
Operator: H.SLAVIN
Date: 04/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 16				2708.76	12.36		979200.24					
65000	90000	0	0	2708.76	12.36	237.08	979200.24	979223.21	29.50	26.51	23.82	22.53
65200	90000	0	0	2709.14	12.41	236.31	979200.64	979223.10	29.66	26.69	24.02	22.73
65400	90000	0	0	2709.36	12.46	235.43	979200.87	979223.00	29.81	26.84	24.18	22.90
65600	90000	0	0	2709.42	12.52	234.98	979200.93	979222.89	29.88	26.92	24.26	22.98
65800	90000	0	0	2709.40	12.55	234.88	979200.91	979222.79	29.94	26.99	24.33	23.05
66000	90000	0	0	2708.93	13.01	236.79	979200.42	979222.68	29.92	27.00	24.32	23.03
66200	90000	0	0	2708.42	13.07	238.71	979199.89	979222.58	29.92	26.97	24.27	22.99
66400	90000	0	0	2708.21	13.12	239.42	979199.67	979222.47	30.01	27.00	24.29	22.99
66600	90000	0	0	2708.30	13.17	238.82	979199.77	979222.36	30.00	27.00	24.30	23.00
66800	90000	0	0	2707.92	13.22	241.18	979199.16	979222.26	30.10	27.07	24.34	23.03
67000	90000	0	0	2706.94	13.26	244.31	979198.34	979222.15	30.00	27.01	24.24	22.91
BASE # 16				2708.75	13.37		979200.24					

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Data computed on 24/12/01

BOLD GEOPHYSICS & CO

LOOP NUMBER 226

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 05000E FROM 50000N TO 54000N

Loop Time: 2.25 Hours Drift Rate: -.02 Gravimeter #G 561 Operator: R.ANNETT
Loop Drift: -.040 Mgals Time Zone 9.500 Calibration Factor: 1.009 Date: 05/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 04				2682.15	14.11		979190.55					
50000	85000	0	0	2682.15	14.11	282.35	979190.55	979229.00	23.93	20.28	17.09	15.55
50200	85000	0	0	2682.05	14.17	281.44	979190.65	979228.87	23.84	20.20	17.02	15.48
50400	85000	0	0	2681.53	14.22	283.09	979189.93	979228.79	23.76	20.19	16.98	15.43
50600	85000	0	0	2682.08	14.31	280.42	979190.69	979228.68	23.68	20.35	17.18	15.65
50800	85000	0	0	2682.13	14.35	280.28	979190.54	979228.58	23.79	20.26	17.09	15.56
51000	85000	0	0	2681.13	14.37	284.12	979187.53	979228.47	23.93	20.16	16.94	15.40
51200	85000	0	0	2681.29	14.45	282.60	979189.69	979228.37	23.67	20.11	16.91	15.37
51400	85000	0	0	2682.47	14.50	276.77	979190.70	979228.26	23.70	20.22	17.09	15.56
51600	85000	0	0	2681.99	14.55	278.48	979190.40	979228.15	23.69	20.18	17.02	15.51
51800	85000	0	0	2682.02	15.00	277.67	979190.43	979228.05	23.64	20.15	17.00	15.48
52000	85000	0	0	2681.51	15.05	279.45	979189.92	979227.94	23.62	20.11	16.95	15.42
52200	85000	0	0	2680.53	15.10	283.32	979188.93	979227.84	23.59	20.03	16.83	15.28
52400	85000	0	0	2679.85	15.15	289.03	979187.44	979227.73	23.42	19.93	16.56	14.99
52600	85000	0	0	2679.75	15.20	285.02	979188.15	979227.63	23.59	19.98	16.75	15.18
52800	85000	0	0	2679.69	15.26	284.88	979188.09	979227.52	23.41	19.93	16.61	15.04
53000	85000	0	0	2679.54	15.33	284.62	979187.94	979227.41	23.32	19.94	16.58	14.99
53200	85000	0	0	2681.64	15.40	274.40	979190.06	979227.31	23.28	19.83	16.73	15.23
53400	85000	0	0	2682.16	15.46	271.40	979190.59	979227.20	23.05	19.84	16.77	15.28
53600	85000	0	0	2682.72	15.51	269.81	979191.15	979227.10	23.13	19.77	16.74	15.20
53800	85000	0	0	2682.25	15.56	269.13	979190.68	979226.99	23.06	19.68	16.63	15.16
54000	85000	0	0	2682.27	16.01	268.49	979190.70	979226.88	23.05	19.67	16.63	15.17
BASE # 04				2682.11	16.06		979190.55					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 27

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid 3th Australia

COVERAGE: LINE 85000E FROM 54000N TO 58000N

Loop Time: 2.07 Hours Drift Rate -.00 Gravimeter #G 561 Operator R.ANNETT
Loop Drift: -.010 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 06/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 17				2682.25	10.07		979190.70					
54000	85000	0	0	2682.25	10.07	260.49	979190.70	979226.80	23.04	19.67	16.63	15.16
54200	85000	0	0	2682.40	10.16	267.60	979190.85	979226.78	23.10	19.74	16.71	15.25
54400	85000	0	0	2682.09	10.21	268.25	979190.54	979226.67	23.15	19.77	16.73	15.27
54600	85000	0	0	2681.74	10.27	270.01	979190.19	979226.57	23.18	19.84	16.83	15.36
54800	85000	0	0	2682.29	10.31	267.23	979190.74	979226.46	23.23	19.87	16.85	15.39
55000	85000	0	0	2682.03	10.36	264.73	979191.29	979226.36	23.33	20.00	17.00	15.56
55200	85000	0	0	2682.54	10.41	265.71	979191.00	979226.25	23.36	20.02	17.01	15.56
55400	85000	0	0	2683.27	10.46	262.57	979191.73	979226.14	23.53	20.23	17.26	15.82
55600	85000	0	0	2683.07	10.50	263.58	979191.53	979226.04	23.62	20.30	17.32	15.89
55800	85000	0	0	2682.83	10.56	264.57	979191.34	979225.93	23.77	20.44	17.45	16.01
56000	85000	0	0	2682.78	10.59	265.05	979191.24	979225.83	23.88	20.55	17.55	16.10
56200	85000	0	0	2683.51	11.06	262.22	979191.98	979225.72	24.10	20.80	17.83	16.46
56400	85000	0	0	2682.91	11.10	264.24	979191.37	979225.62	24.15	20.82	17.83	16.39
56600	85000	0	0	2683.10	11.14	264.36	979191.56	979225.51	24.17	21.04	18.05	16.61
56800	85000	0	0	2682.21	11.18	268.45	979190.67	979225.40	24.48	21.10	18.07	16.60
57000	85000	0	0	2682.57	11.22	266.72	979191.05	979225.30	24.50	21.23	18.21	16.76
57200	85000	0	0	2683.61	11.26	262.56	979192.08	979225.19	24.80	21.50	18.53	17.10
57400	85000	0	0	2684.12	11.31	260.77	979192.59	979225.07	25.03	21.75	18.80	17.38
57600	85000	0	0	2683.34	11.36	264.10	979191.81	979224.98	25.00	21.76	18.77	17.34
57800	85000	0	0	2683.32	11.42	264.70	979191.79	979224.86	25.30	21.94	18.98	17.54
58000	85000	0	0	2684.22	11.46	260.71	979192.69	979224.77	25.44	22.16	19.21	17.79
BASE # 17				2682.24	12.11		979190.70					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 28

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 90000E FROM 50000N TO 46200N

Loop Time: 2.03 Hours
Loop Drift: -.021 Mgals
Drift Rate: -.01
Time Zone: 9.500
Gravimeter #C 037
Calibration Factor: 1.047
Operator: M.SLAVIN
Date: 06/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 03				2704.07	9.48		979195.32					
50000	90000	0	0	2704.07	9.48	256.99	979195.32	979231.14	20.06	17.63	14.72	13.32
49800	90000	0	0	2703.92	9.54	257.43	979195.16	979231.25	20.70	17.46	14.55	13.15
49600	90000	0	0	2703.93	9.58	257.56	979195.18	979231.36	20.63	17.40	14.48	13.08
49400	90000	0	0	2704.30	10.04	256.25	979195.56	979231.46	20.63	17.41	14.51	13.11
49200	90000	0	0	2703.96	10.09	258.37	979195.21	979231.57	20.63	17.39	14.46	13.09
49000	90000	0	0	2703.92	10.13	258.00	979195.24	979231.67	20.65	17.40	14.47	13.06
48800	90000	0	0	2704.04	10.19	259.14	979195.29	979231.78	20.60	17.42	14.49	13.07
48600	90000	0	0	2704.04	10.24	260.14	979195.29	979231.87	20.59	17.52	14.58	13.16
48400	90000	0	0	2704.67	10.28	258.38	979195.96	979231.99	20.96	17.71	14.79	13.38
48200	90000	0	0	2704.72	10.36	257.44	979196.00	979232.10	21.21	17.95	15.02	13.60
48000	90000	0	0	2705.01	10.41	259.94	979196.31	979232.20	21.45	18.10	15.24	13.82
47800	90000	0	0	2704.92	10.47	262.31	979196.22	979232.31	21.77	18.40	15.51	14.08
47600	90000	0	0	2704.79	10.52	264.71	979196.09	979232.42	22.06	18.73	15.74	14.30
47400	90000	0	0	2704.54	10.57	267.47	979195.82	979232.52	22.30	18.94	15.91	14.46
47200	90000	0	0	2704.71	11.03	267.00	979196.00	979232.63	22.47	19.10	16.07	14.61
47000	90000	0	0	2704.54	11.08	270.22	979195.83	979232.73	22.70	19.30	16.24	14.77
46800	90000	0	0	2704.60	11.15	271.74	979195.89	979232.84	22.99	19.58	16.50	15.02
46600	90000	0	0	2705.00	11.19	271.96	979196.31	979232.95	23.36	19.94	16.86	15.38
46400	90000	0	0	2704.82	11.26	274.18	979196.17	979233.05	23.60	20.16	17.05	15.56
46200	90000	0	0	2703.94	11.31	277.83	979195.20	979233.16	23.99	20.25	17.09	15.56
BASE # 03				2704.05	11.50		979195.32					

Data computed on 24/12/81

GOLD GEOPHYSICS & CO

LOOP NUMBER 29

SURVEYED FOR: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 58000N TO 62000N

Loop Time: 1.87 Hours
Loop Drift: -.061 Mgals
Drift Rate: -.03
Time Zone: 9.500
Gravimeter #C 561
Calibration Factor: 1.009
Operator: R.ANNETT
Date: 07/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 18				2684.28	6.37		979192.70					
58000	85000	0	0	2684.28	6.37	260.71	979192.70	979224.77	25.44	22.16	19.21	17.79
58200	85000	0	0	2684.27	6.41	260.57	979192.71	979224.66	25.53	22.26	19.31	17.89
58400	85000	0	0	2684.42	6.45	260.33	979192.85	979224.56	25.71	22.44	19.49	18.08
58600	85000	0	0	2683.91	6.48	262.37	979192.33	979224.45	25.81	22.50	19.53	18.10
58800	85000	0	0	2683.85	6.51	262.35	979192.27	979224.35	25.80	22.50	19.53	18.10
59000	85000	0	0	2684.58	6.55	259.13	979192.99	979224.24	25.91	22.65	19.72	18.31
59200	85000	0	0	2683.87	6.58	261.81	979192.30	979224.14	25.92	22.62	19.66	18.23
59400	85000	0	0	2683.75	7.02	262.17	979192.18	979224.03	25.90	22.60	19.72	18.29
59600	85000	0	0	2682.63	7.06	266.72	979191.05	979223.92	25.96	22.61	19.59	18.14
59800	85000	0	0	2682.96	7.07	265.19	979191.37	979223.82	26.02	22.73	19.73	18.29
60000	85000	0	0	2683.13	7.13	264.16	979191.56	979223.71	26.12	22.80	19.81	18.37
60200	85000	0	0	2683.35	7.17	260.44	979192.39	979223.61	26.23	22.96	20.01	18.58
60400	85000	0	0	2684.45	7.21	258.02	979192.90	979223.50	26.31	23.07	20.15	18.74
60600	85000	0	0	2684.74	7.25	256.78	979193.19	979223.40	26.43	23.20	20.30	18.90
60800	85000	0	0	2685.52	7.29	253.27	979193.98	979223.29	26.56	23.37	20.51	19.13
61000	85000	0	0	2685.97	7.33	251.68	979194.43	979223.18	26.76	23.60	20.75	19.38
61200	85000	0	0	2686.02	7.36	251.49	979194.49	979223.08	26.88	23.72	20.88	19.51
61400	85000	0	0	2686.51	7.40	249.51	979194.98	979222.97	26.85	23.71	21.89	19.73
61600	85000	0	0	2686.99	7.43	247.55	979195.47	979222.87	27.21	24.10	21.29	19.95
61800	85000	0	0	2687.17	7.47	247.37	979195.65	979222.76	27.46	24.35	21.55	20.20
62000	85000	0	0	2687.78	7.50	244.08	979196.27	979222.66	27.63	24.55	21.78	20.45
62200	85000	0	0	2688.39	7.54	242.63	979196.88	979222.55	27.66	24.61	22.06	20.74
62400	85000	0	0	2688.54	7.57	242.05	979197.04	979222.44	27.99	24.95	22.21	20.89
62600	85000	0	0	2688.51	8.01	242.26	979197.01	979222.34	28.22	25.17	22.42	21.10
62800	85000	0	0	2688.52	8.06	242.28	979197.02	979222.23	28.35	25.29	22.55	21.22
BASE # 18				2684.22	8.12		979192.70					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 50

SURVEYED FOR: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 62000N TO 65000N

Loop Time: 1.27 Hours | Drift Rate: 0.00 | Gravimeter #G 561 | Operator: R ANNETT
Loop Drift: 0.000 Mgals | Time Zone: 9.500 | Calibration Factor: 1.009 | Date: 07/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 19				2688.50	8.50		979197.02					
62800	85000	0	0	2688.50	8.50	242.28	979197.02	979222.23	28.34	25.29	22.54	21.22
63000	85000	0	0	2688.00	8.55	241.51	979197.32	979222.13	28.47	25.45	22.72	21.40
63200	85000	0	0	2689.13	8.59	240.12	979197.66	979222.02	28.60	25.58	22.87	21.56
63400	85000	0	0	2689.23	9.03	239.02	979197.76	979221.92	28.74	25.73	23.01	21.71
63700	85000	0	0	2689.48	9.08	238.77	979198.01	979221.76	28.92	25.92	23.22	21.92
63800	85000	0	0	2689.49	9.11	238.55	979198.02	979221.70	28.94	25.94	23.24	21.94
64000	85000	0	0	2689.55	9.16	238.55	979198.08	979221.60	29.10	26.10	23.40	22.10
64200	85000	0	0	2689.71	9.20	237.36	979198.24	979221.47	29.11	26.12	23.44	22.14
64400	85000	0	0	2689.66	9.23	237.56	979198.19	979221.39	29.20	26.22	23.53	22.24
64600	85000	0	0	2689.32	9.27	238.72	979197.85	979221.28	29.22	26.22	23.50	22.22
64800	85000	0	0	2689.09	9.31	239.51	979197.62	979221.18	29.27	26.26	23.55	22.24
65000	85000	0	0	2688.90	9.34	242.19	979196.90	979221.07	29.32	26.27	23.53	22.20
65200	85000	0	0	2688.88	9.38	244.25	979196.52	979220.97	29.43	26.36	23.59	22.26
65400	85000	0	0	2687.38	9.41	246.38	979195.87	979220.86	29.37	26.28	23.49	22.15
65600	85000	0	0	2687.48	9.46	246.12	979195.99	979220.75	29.53	26.43	23.65	22.31
65800	85000	0	0	2687.45	9.50	246.00	979195.96	979220.65	29.50	26.40	23.60	22.26
BASE # 19				2688.50	10.06		979197.02					

Data computed on 24/12/81

SOLO GEOPHYSICS A.C.U.

LOOP NUMBER .51

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 65000E FROM 65000N TO 68000N

Loop Time: .87 Hours
Loop Drift: .010 Mgals
Drift Rate .01
Time Zone: 9.500
Gravimeter #G 561
Calibration Factor: 1.009
Operator: R.ANNETT
Date: 07/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 20				2687.59	10.52		979195.96					
65000	85000	0	0	2687.50	10.52	246.00	979195.96	979220.65	29.50	26.40	23.70	22.36
66000	85000	0	0	2687.42	10.56	246.22	979195.88	979220.54	29.65	26.55	23.77	22.43
66200	85000	0	0	2687.34	11.00	246.72	979195.80	979220.44	29.78	26.68	23.89	22.55
66400	85000	0	0	2687.29	11.05	247.29	979195.75	979220.33	29.96	26.85	24.05	22.70
66600	85000	0	0	2687.62	11.08	245.57	979196.08	979220.23	30.02	26.93	24.16	22.82
66800	85000	0	0	2688.17	11.11	242.93	979196.63	979220.12	30.10	27.04	24.30	22.97
67000	85000	0	0	2688.04	11.15	239.83	979197.31	979220.02	30.20	27.10	24.47	23.16
67200	85000	0	0	2688.92	11.18	239.17	979197.39	979219.91	30.24	27.23	24.53	23.22
67400	85000	0	0	2688.85	11.21	239.06	979197.32	979219.80	30.25	27.24	24.53	23.23
67600	85000	0	0	2688.93	11.24	238.51	979197.40	979219.70	30.31	27.31	24.61	23.31
67800	85000	0	0	2688.87	11.27	238.21	979197.33	979219.59	30.29	27.29	24.60	23.30
68000	85000	0	0	2688.81	11.30	238.27	979197.27	979219.49	30.35	27.35	24.65	23.36
BASE # 20				2687.51	11.44		979195.96					

Data Computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 511

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid 6th Australia

COVERAGE: LINE 90000E FROM 46200N TO 42200N

Loop Time: 1.98 Hours
Loop Drift: -.073 Mgals
Drift Rate: -.04
Time Zone: 9.500
Gravimeter SG 037
Calibration Factor: 1.047
Operator R.SLAVIN
Date: 07/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 21				2703.96	6.47		979195.20					
46200	90000	0	0	2703.96	6.47	279.03	979195.20	979233.16	23.77	20.25	17.08	15.56
46000	90000	0	0	2703.73	6.52	282.25	979194.96	979233.26	23.76	20.41	17.22	15.68
45800	90000	0	0	2703.60	6.56	283.91	979194.83	979233.37	24.09	20.52	17.30	15.76
45600	90000	0	0	2703.15	7.01	287.91	979194.36	979233.48	24.20	20.59	17.34	15.78
45400	90000	0	0	2702.92	7.06	289.53	979194.17	979233.50	24.46	20.82	17.54	15.97
45200	90000	0	0	2704.19	7.11	286.20	979195.46	979233.67	24.92	21.32	18.00	16.52
45000	90000	0	0	2705.00	7.15	284.43	979196.39	979233.79	25.34	21.76	18.54	16.99
44800	90000	0	0	2705.36	7.20	285.46	979196.69	979233.90	25.76	22.17	18.94	17.38
44600	90000	0	0	2705.93	7.25	284.99	979197.29	979234.01	26.15	22.56	19.34	17.79
44400	90000	0	0	2706.62	7.29	283.66	979198.01	979234.11	26.47	22.91	19.70	18.15
44200	90000	0	0	2708.26	7.34	279.98	979199.73	979234.22	26.83	23.34	20.19	18.60
44000	90000	0	0	2708.86	7.38	278.62	979200.36	979234.32	26.85	23.36	20.26	18.76
43800	90000	0	0	2709.19	7.42	274.59	979200.71	979234.43	26.95	23.40	20.29	18.80
43600	90000	0	0	2709.68	7.47	273.07	979201.12	979234.54	26.82	23.39	20.30	18.81
43400	90000	0	0	2710.04	7.55	271.74	979201.61	979234.64	26.91	23.49	20.42	18.94
43200	90000	0	0	2710.10	8.00	272.84	979201.66	979234.75	26.94	23.50	20.44	18.96
43000	90000	0	0	2711.41	8.06	266.06	979203.05	979234.85	27.06	23.71	20.69	19.24
42800	90000	0	0	2711.76	8.10	265.32	979203.00	979234.96	27.01	23.65	20.62	19.17
42600	90000	0	0	2711.96	8.15	265.16	979203.42	979235.07	26.95	23.52	20.52	19.07
42400	90000	0	0	2711.96	8.19	265.78	979203.60	979235.19	26.66	23.34	20.35	18.91
42200	90000	0	0	2711.86	8.24	263.59	979203.53	979235.28	26.40	23.09	20.10	18.67
BASE # 21				2703.09	8.46		979195.20					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 333

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 90000E FROM 42200N TO 37200N

Loop Time: 2.08 Hours Drift Rate: -.02 Gravimeter #G 037 Operator R.SLAVIN
Loop Drift: -.031 Mgals Time Zone: 9.500 Calibration Factor: 1.047 Date: 07/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 22				2711.08	9.34		979203.92					
42200	90000	0	0	2711.98	9.34	263.59	979203.92	979235.20	26.39	23.07	20.09	18.65
42000	90000	0	0	2712.36	9.40	260.06	979204.02	979235.30	26.10	22.78	19.95	18.53
41800	90000	0	0	2712.11	9.44	261.39	979203.76	979235.49	25.93	22.65	19.69	18.26
41600	90000	0	0	2712.29	9.48	259.45	979203.95	979235.60	25.59	22.33	19.39	17.98
41400	90000	0	0	2712.03	9.52	260.21	979203.68	979235.70	25.38	22.11	19.16	17.75
41200	90000	0	0	2711.54	9.56	261.26	979203.17	979235.61	25.01	21.74	18.77	17.35
41000	90000	0	0	2710.74	10.00	264.30	979202.33	979235.91	24.72	21.40	18.41	16.97
40800	90000	0	0	2709.98	10.04	267.26	979201.54	979236.02	24.47	21.11	18.09	16.63
40600	90000	0	0	2709.58	10.08	268.53	979201.12	979236.13	24.23	20.85	17.81	16.35
40400	90000	0	0	2710.12	10.12	265.80	979201.69	979236.23	24.05	20.72	17.74	16.27
40200	90000	0	0	2710.46	10.16	263.80	979202.04	979236.34	23.90	20.59	17.59	16.16
40000	90000	0	0	2710.70	10.20	262.90	979202.30	979236.44	23.84	20.54	17.56	16.13
39800	90000	0	0	2711.21	10.24	260.80	979202.83	979236.55	23.83	20.55	17.60	16.17
39600	90000	0	0	2711.17	10.28	261.54	979202.79	979236.66	23.83	20.54	17.58	16.15
39400	90000	0	0	2711.03	10.34	262.70	979202.64	979236.76	23.85	20.54	17.57	16.14
39200	90000	0	0	2711.01	10.38	263.56	979202.62	979236.87	23.89	20.58	17.60	16.16
39000	90000	0	0	2710.42	10.42	267.10	979202.01	979236.90	23.95	20.59	17.57	16.12
38800	90000	0	0	2710.11	10.46	269.55	979201.68	979237.00	24.06	20.67	17.62	16.15
38600	90000	0	0	2710.16	10.51	270.56	979201.74	979237.19	24.23	20.83	17.77	16.30
38400	90000	0	0	2710.01	10.55	269.12	979201.62	979237.29	24.47	21.11	18.06	16.60
38200	90000	0	0	2711.51	10.59	267.66	979203.15	979237.40	24.80	21.43	18.40	16.94
38000	90000	0	0	2712.30	11.03	265.06	979203.98	979237.51	25.19	21.78	18.77	17.32
37800	90000	0	0	2713.64	11.08	261.66	979205.39	979237.61	25.49	22.20	19.24	17.82
37600	90000	0	0	2714.62	11.12	259.08	979206.41	979237.72	25.87	22.61	19.68	18.27
37400	90000	0	0	2715.42	11.17	257.64	979207.25	979237.82	26.26	23.02	20.11	18.70
37200	90000	0	0	2716.12	11.21	256.04	979207.99	979237.93	26.65	23.42	20.52	19.12
BASE # 22				2711.05	11.39		979203.92					

Data computed on 24/12/01

SOLO GEOPHYSICS A CO

LOOP NUMBER 34

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 90000E FROM 37200N TO 32000N

Loop Time: 1.98 Hours
Loop Drift: .073 Mgals
Drift Rate: .04
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator R.SLAVIN
Date: 07/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.9
BASE # 23				2716.12	12.35		979207.98					
37200	90000	0	0	2716.12	12.35	256.54	979207.98	979237.93	26.64	23.41	20.51	17.11
37000	90000	0	0	2716.67	12.37	256.00	979208.55	979238.04	26.99	23.77	20.87	17.48
36800	90000	0	0	2717.49	12.43	253.61	979209.41	979238.14	27.21	24.02	21.15	17.77
36600	90000	0	0	2716.99	12.47	257.10	979208.88	979238.25	27.35	24.18	21.31	17.91
36400	90000	0	0	2717.31	12.51	257.07	979209.22	979238.35	27.57	24.34	21.43	20.03
36200	90000	0	0	2717.15	12.54	258.47	979207.05	979238.46	27.61	24.36	21.43	20.02
36000	90000	0	0	2716.92	12.58	260.09	979208.80	979238.59	27.61	24.34	21.40	19.98
35800	90000	0	0	2716.76	13.03	261.38	979208.63	979238.69	27.62	24.33	21.37	19.95
35600	90000	0	0	2716.67	13.06	262.41	979208.54	979238.78	27.64	24.34	21.37	19.94
35400	90000	0	0	2716.78	13.10	262.60	979208.65	979238.87	27.69	24.39	21.42	19.99
35200	90000	0	0	2716.61	13.14	264.31	979208.47	979238.99	27.78	24.46	21.47	20.03
35000	90000	0	0	2717.94	13.17	263.39	979209.92	979239.10	27.92	24.61	21.63	20.19
34800	90000	0	0	2716.80	13.20	265.60	979208.66	979239.20	28.02	24.73	21.72	20.27
34600	90000	0	0	2717.07	13.24	265.73	979208.94	979239.31	28.25	24.91	21.90	20.46
34400	90000	0	0	2717.04	13.29	267.37	979208.91	979239.42	28.47	25.11	22.09	20.63
34200	90000	0	0	2716.74	13.33	270.11	979208.59	979239.51	28.65	25.26	22.20	20.73
34000	90000	0	0	2716.94	13.36	270.39	979208.80	979239.63	28.82	25.42	22.36	20.80
33800	90000	0	0	2717.20	13.40	267.45	979209.80	979239.74	29.05	25.70	22.68	21.22
33600	90000	0	0	2718.60	13.43	264.67	979210.62	979239.84	29.16	25.83	22.84	21.40
33400	90000	0	0	2719.51	13.48	261.76	979211.49	979239.95	29.28	25.99	23.03	21.60
33200	90000	0	0	2719.72	13.52	261.37	979211.70	979240.05	29.30	26.02	23.06	21.64
33000	90000	0	0	2719.55	13.56	262.36	979211.52	979240.16	29.18	25.90	23.04	21.58
32800	90000	0	0	2719.75	14.00	262.50	979211.73	979240.27	29.32	26.07	23.10	21.67
32600	90000	0	0	2720.23	14.05	261.03	979212.23	979240.37	29.44	26.16	23.20	21.78
32400	90000	0	0	2720.99	14.08	258.50	979213.02	979240.48	29.57	26.32	23.39	21.90
32200	90000	0	0	2721.65	14.13	256.70	979213.71	979240.58	29.65	26.42	23.52	22.02
32000	90000	0	0	2722.11	14.18	255.78	979214.19	979240.69	29.72	26.51	23.61	22.12
BASE # 23				2716.19	14.34		979207.98					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 455

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 50000N TO 46000N

Loop Time: 2.13 Hours
Loop Drift: .020 Mgals
Drift Rate: .01
Time Zone: 9.500
Gravimeter #G 561
Calibration Factor: 1.009
Operator R.ANNETT
Date: 10/12/91

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 04				2682.13	11.02		979190.55					
50000	85000	0	0	2682.13	11.02	282.35	979190.55	979229.00	23 83	20.28	17 09	15.55
49800	85000	0	0	2684.10	11.09	274.40	979192.54	979229.11	23 96	20 51	17 40	15 91
49600	85000	0	0	2684.40	11.14	273.43	979192.84	979229.21	23 94	20 50	17 41	15.92
49400	85000	0	0	2685.23	11.17	270.76	979193.67	979229.32	24 00	20 68	17 61	16 14
49200	85000	0	0	2685.97	11.25	268.01	979194.42	979229.42	24 11	20 95	17 71	16 25
49000	85000	0	0	2686.22	11.39	267.47	979194.67	979229.53	24 14	20 98	17 75	16 29
48800	85000	0	0	2686.37	11.34	267.28	979194.82	979229.64	24 14	20 98	17 76	16 30
48600	85000	0	0	2686.20	11.38	267.71	979194.65	979229.74	24 01	20 64	17 61	16 15
48400	85000	0	0	2685.63	11.46	269.86	979194.07	979229.85	23 75	20 36	17 31	15.84
48200	85000	0	0	2685.37	11.51	270.66	979193.81	979229.95	23 56	20 16	17 10	15 62
48000	85000	0	0	2684.98	11.55	271.49	979193.42	979230.06	23.24	19 83	16.76	15.28
47800	85000	0	0	2685.55	12.00	268.51	979193.99	979230.17	23 00	19 70	16 66	15 20
47600	85000	0	0	2685.75	12.04	266.69	979194.19	979230.27	22 95	19 40	16 38	14.92
47400	85000	0	0	2684.77	12.07	270.06	979193.22	979230.38	22 59	19 19	16 12	14 65
47200	85000	0	0	2683.85	12.13	274.44	979192.27	979230.40	22 33	18 88	15 77	14.20
47000	85000	0	0	2683.40	12.17	275.53	979191.82	979230.54	22 18	18 63	15 51	14 00
46800	85000	0	0	2683.26	12.26	277.06	979191.68	979230.69	22.10	18 61	15 48	13.97
46600	85000	0	0	2682.95	12.30	277.58	979191.36	979230.80	21 97	18 38	15 16	13 65
46400	85000	0	0	2683.08	12.35	276.78	979191.49	979230.91	21.64	18 16	15 03	13.52
46200	85000	0	0	2683.37	12.37	274.77	979191.99	979231.01	21 43	17 97	14 86	13.46
46000	85000	0	0	2683.83	12.45	272.57	979192.25	979231.12	21.26	17.93	14.74	13.26
BASE # 04				2682.15	13.19		979190.55					

Data computed on 24/12/91

BOLD GEOPHYSICS & CO

LOOP NUMBER 36

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 47000N TO 42000N

Loop Time: 1.83 Hours
Loop Drift: 131 Mgals
Drift Rate: .07
Time Zone: 9.500
Gravimeter BG 561
Calibration Factor: 1.009
Operator: R.ANNETT
Date: 10/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 24				2683.86	14.15		979192.25					
46000	85000	0	0	2683.86	14.15	272.57	979192.25	979231.12	21.26	17.83	14.75	13.26
45800	85000	0	0	2683.54	14.21	273.09	979191.92	979231.22	21.11	17.67	14.59	13.08
45600	85000	0	0	2683.10	14.25	275.42	979191.47	979231.33	20.90	17.43	14.32	12.82
45400	85000	0	0	2683.08	14.30	275.55	979191.45	979231.44	20.79	17.33	14.21	12.71
45200	85000	0	0	2683.01	14.34	275.59	979191.37	979231.54	20.62	17.15	14.04	12.53
45000	85000	0	0	2682.62	14.38	277.54	979190.97	979231.65	20.55	17.06	13.98	12.48
44800	85000	0	0	2682.29	14.42	279.22	979190.63	979231.75	20.47	16.96	13.80	12.20
44600	85000	0	0	2682.33	14.46	277.15	979190.67	979231.86	20.39	16.88	13.72	12.20
44400	85000	0	0	2680.99	14.50	285.15	979189.31	979231.97	20.25	16.66	13.44	11.88
44200	85000	0	0	2680.75	14.54	286.65	979189.06	979232.07	20.22	16.62	13.38	11.82
44000	85000	0	0	2681.19	15.01	285.57	979189.50	979232.18	20.32	16.73	13.50	11.94
43800	85000	0	0	2681.73	15.05	284.11	979190.04	979232.28	20.45	16.86	13.64	12.09
43600	85000	0	0	2682.05	15.08	283.49	979190.36	979232.39	20.51	16.94	13.73	12.19
43400	85000	0	0	2682.52	15.12	282.11	979190.83	979232.50	20.57	17.02	13.83	12.29
43200	85000	0	0	2682.95	15.15	280.98	979191.26	979232.60	20.64	17.11	13.93	12.40
43000	85000	0	0	2683.43	15.17	279.81	979191.74	979232.71	20.75	17.24	14.07	12.55
42800	85000	0	0	2684.25	15.22	277.55	979192.56	979232 81	20.97	17.48	14.34	12.83
42600	85000	0	0	2684.76	15.26	276.64	979193.07	979232.92	21.10	17.58	14.52	13.06
42400	85000	0	0	2685.20	15.30	276.03	979193.51	979233.03	21.38	17.90	14.78	13.28
42200	85000	0	0	2685.70	15.34	274.97	979194.09	979233.13	21.62	18.16	15.05	13.55
42000	85000	0	0	2685.52	15.39	277.08	979193.82	979233.24	21.08	18.39	15.25	13.73
BASE # 24				2683.99	16.05		979192.25					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 37

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE BASE TIL 4-28

Loop Time: 1.92 Hours
Loop Drift: -.021 Mgals
Drift Rate: -.01
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator M.SLAVIN
Date: 10/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 04				2699.48	10.42		979190.55					
50000	80000	0	0	2701.98	11.10	280.70	979193.17	979226.86	28.28	24.75	21.57	20.04
50000	85000	0	0	2699.47	11.46	282.35	979190.55	979229.00	23.03	20.28	17.09	15.55
50000	80000	0	0	2702.02	12.15	280.70	979193.23	979226.86	28.33	24.80	21.62	20.09
BASE # 04				2699.46	12.44		979190.55					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 158

SURVEYED FOR GRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 80000E FROM 50000N TO 54000N

Loop Time: 2.08 Hours
Loop Drift: .136 Mgals
Drift Rate: .07
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator M.SLAVIN
Date: 10/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 28				2702.04	13.53		979193.20					
50000	80000	0	0	2702.04	13.53	280.90	979193.20	979226.86	28.30	24.77	21.59	20.06
50200	80000	0	0	2702.20	13.58	279.31	979193.55	979226.75	28.41	24.90	21.74	20.22
50400	80000	0	0	2702.33	14.03	279.04	979193.49	979226.65	28.40	24.89	21.73	20.21
50600	80000	0	0	2702.20	14.07	279.22	979193.35	979226.54	28.40	24.89	21.73	20.21
50800	80000	0	0	2703.01	14.12	275.50	979194.20	979226.44	28.53	25.07	21.95	20.45
51000	80000	0	0	2703.33	14.16	274.05	979194.53	979226.33	28.65	25.20	22.10	20.61
51200	80000	0	0	2703.69	14.20	272.57	979194.90	979226.22	28.80	25.37	22.29	20.80
51400	80000	0	0	2703.49	14.25	273.63	979194.68	979226.12	28.93	25.49	22.39	20.90
51600	80000	0	0	2703.00	14.32	276.25	979194.16	979226.01	29.09	25.62	22.49	20.98
51800	80000	0	0	2703.37	14.37	274.79	979194.54	979225.91	29.25	25.80	22.69	21.19
52000	80000	0	0	2703.67	14.44	273.55	979194.85	979225.80	29.39	25.95	22.86	21.37
52200	80000	0	0	2703.48	14.49	274.23	979194.65	979225.70	29.44	26.00	22.89	21.40
52400	80000	0	0	2703.73	14.53	273.44	979194.90	979225.59	29.63	26.20	23.10	21.61
52600	80000	0	0	2704.34	14.59	270.87	979195.54	979225.48	29.80	26.40	23.33	21.86
52800	80000	0	0	2704.20	15.04	271.43	979195.47	979225.30	29.97	26.55	23.40	22.00
53000	80000	0	0	2703.80	15.10	274.04	979195.04	979225.27	30.22	26.70	23.60	22.18
53200	80000	0	0	2703.36	15.17	276.79	979194.49	979225.17	30.38	26.90	23.77	22.36
53400	80000	0	0	2704.27	15.22	273.45	979195.44	979225.06	30.70	27.26	24.19	22.80
53600	80000	0	0	2704.78	15.26	271.05	979195.97	979224.95	30.90	27.56	24.49	23.01
53800	80000	0	0	2705.19	15.32	270.70	979196.39	979224.85	31.30	27.89	24.83	23.35
54000	80000	0	0	2705.40	15.36	270.36	979196.61	979224.74	31.50	28.10	25.04	23.57
BASE # 28				2702.17	15.58		979193.20					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 39

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 80000E FROM 54000N TO 56000N

Loop Time: 1.10 Hours
Loop Drift: .115 Mgals
Drift Rate: .10
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator R.SLAVIN
Date: 10/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 29				2705.46	16.20		979196.60					
54000	80000	0	0	2705.46	16.20	270.36	979196.60	979224.74	31.49	28.10	25.04	23.56
54200	80000	0	0	2705.06	16.28	269.19	979197.01	979224.64	31.75	28.36	25.32	23.85
54400	80000	0	0	2706.33	16.31	267.28	979197.49	979224.53	31.92	28.56	25.53	24.08
54600	80000	0	0	2706.53	16.37	266.55	979197.69	979224.43	32.06	28.71	25.70	24.24
54800	80000	0	0	2707.11	16.42	263.96	979198.29	979224.32	32.20	28.88	25.89	24.46
55000	80000	0	0	2707.34	16.46	262.83	979198.52	979224.21	32.29	28.98	26.01	24.58
55200	80000	0	0	2707.68	16.50	261.25	979198.87	979224.11	32.39	29.11	26.15	24.73
55400	80000	0	0	2707.46	16.54	261.09	979198.64	979224.00	32.40	29.11	26.14	24.72
55600	80000	0	0	2707.77	16.58	260.08	979198.95	979223.90	32.49	29.20	26.25	24.83
55800	80000	0	0	2707.87	17.11	259.99	979199.04	979223.79	32.55	29.28	26.34	24.92
56000	80000	0	0	2707.54	17.14	261.29	979198.68	979223.69	32.64	29.35	26.39	24.97
BASE # 29				2705.52	17.20		979196.60					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 40

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 42000N TO 38000N

Loop Time: 1.78 Hours Drift Rate: -.06 Gravimeter 4C 561 Operator R.ANNETT
Loop Drift: -.111 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 11/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE @ 25				2685.73	7.54		979193.82					
42000	85000	0	0	2685.73	7.54	277.08	979193.82	979233.24	21.88	18.39	15.24	13.73
41800	85000	0	0	2686.36	8.04	276.70	979194.47	979233.34	22.20	18.72	15.59	14.08
41600	85000	0	0	2687.40	8.08	274.00	979195.52	979233.45	22.51	19.07	15.96	14.47
41400	85000	0	0	2688.51	8.13	270.72	979196.64	979233.56	22.81	19.40	16.34	14.86
41200	85000	0	0	2688.66	9.18	271.61	979196.80	979233.66	23.05	19.64	16.56	15.08
41000	85000	0	0	2688.77	8.22	272.51	979196.91	979233.77	23.26	19.83	16.75	15.27
40800	85000	0	0	2688.77	9.26	274.03	979196.92	979233.89	23.49	20.05	16.95	15.45
40600	85000	0	0	2688.98	8.29	274.28	979197.13	979233.98	23.64	20.19	17.09	15.60
40400	85000	0	0	2689.12	8.33	274.09	979197.28	979234.09	23.83	20.39	17.26	15.77
40200	85000	0	0	2689.23	8.41	275.55	979197.40	979234.14	24.01	20.55	17.43	15.93
40000	85000	0	0	2689.33	8.44	276.38	979197.50	979234.30	24.17	20.70	17.57	16.06
39800	85000	0	0	2689.20	8.47	277.71	979197.46	979234.40	24.31	20.82	17.68	16.16
39600	85000	0	0	2688.95	8.53	280.36	979197.13	979234.51	24.46	20.94	17.77	16.24
39400	85000	0	0	2689.18	8.57	280.32	979197.36	979234.62	24.58	21.06	17.89	16.36
39200	85000	0	0	2690.22	9.01	276.90	979198.42	979234.72	24.78	21.30	18.16	16.65
39000	85000	0	0	2691.29	9.05	273.84	979199.41	979234.83	24.99	21.55	18.45	16.95
38800	85000	0	0	2692.22	9.09	270.83	979200.44	979234.93	25.25	21.85	18.78	17.31
38600	85000	0	0	2692.40	9.12	271.44	979200.63	979235.04	25.46	22.05	18.98	17.50
38400	85000	0	0	2692.79	9.16	271.44	979201.03	979235.15	25.76	22.34	19.27	17.79
38200	85000	0	0	2692.77	9.17	272.71	979201.03	979235.25	25.93	22.50	19.42	17.93
38000	85000	0	0	2692.29	9.23	276.54	979200.53	979235.36	26.17	22.69	19.57	18.06
BASE @ 25				2685.62	9.41		979193.82					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 41

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 38000N TO 34000N

Loop Time: 1.60 Hours Drift Rate: -.07 Gravimeter #G 561 Operator R.ANNETT
Loop Drift: -.111 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 11/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 26				2692.24	9.59		979200.53					
38000	85000	0	0	2692.24	9.59	276.54	979200.53	979235.36	26.17	22.70	19.57	18.06
37800	85000	0	0	2692.74	10.05	275.86	979201.04	979235.46	26.43	22.96	19.84	18.34
37600	85000	0	0	2693.27	10.08	272.97	979202.08	979235.57	26.73	23.30	20.21	18.72
37400	85000	0	0	2694.77	10.11	270.38	979203.12	979235.68	27.08	23.66	20.62	19.15
37200	85000	0	0	2695.31	10.14	269.63	979203.64	979235.78	27.34	23.95	20.90	19.43
37000	85000	0	0	2695.47	10.17	270.47	979203.81	979235.87	27.58	24.18	21.12	19.65
36800	85000	0	0	2695.03	10.25	270.01	979204.18	979235.99	27.75	24.35	21.30	19.83
36600	85000	0	0	2695.00	10.30	270.74	979204.16	979236.10	27.78	24.37	21.34	19.84
36400	85000	0	0	2696.40	10.33	268.12	979204.76	979236.21	27.70	24.33	21.30	19.84
36200	85000	0	0	2696.35	10.37	268.50	979204.72	979236.31	27.65	24.28	21.24	19.77
36000	85000	0	0	2696.79	10.41	267.13	979205.17	979236.42	27.67	24.32	21.29	19.84
35800	85000	0	0	2697.01	10.44	265.26	979206.20	979236.52	27.75	24.44	21.45	20.02
35600	85000	0	0	2698.09	10.49	263.07	979206.49	979236.63	27.89	24.58	21.60	20.17
35400	85000	0	0	2697.88	10.52	266.42	979206.28	979236.74	28.31	24.96	21.95	20.50
35200	85000	0	0	2698.15	10.57	269.35	979206.56	979236.84	29.13	25.74	22.70	21.23
35000	85000	0	0	2699.78	11.01	266.26	979208.21	979236.95	29.94	26.65	23.63	22.18
34800	85000	0	0	2701.04	11.04	263.79	979209.48	979237.06	30.61	27.30	24.31	22.87
34600	85000	0	0	2701.74	11.07	261.88	979210.39	979237.16	31.00	27.78	24.74	23.34
34400	85000	0	0	2702.20	11.11	260.76	979210.74	979237.27	30.99	27.71	24.76	23.34
34200	85000	0	0	2702.52	11.16	259.91	979210.99	979237.37	30.95	27.68	24.74	23.32
34000	85000	0	0	2703.14	11.19	257.63	979211.61	979237.48	30.96	27.73	24.81	23.41
BASE # 26				2692.13	11.35		979200.53					

Data computed on 24/12/81

BOLD GEOPHYSICAL & CO

LOOP NUMBER 422

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 85000E FROM 34000N TO 28000N

Loop Time: 2.15 Hours Drift Rate: .00 Gravimeter #C 561 Operator R.ANNETT
Loop Drift: .010 Mgals Time Zone: 9.500 Calibration Factor: 1.009 Date: 11/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 27				2703.13	12.49		979211.61					
34000	85000	0	0	2703.13	12.49	257.63	979211.61	979237.48	30.96	27.72	24.81	23.48
33800	85000	0	0	2703.39	12.56	256.07	979211.87	979237.57	30.95	27.72	24.81	23.41
33600	85000	0	0	2703.65	12.59	256.20	979212.13	979237.69	30.96	27.74	24.84	23.44
33400	85000	0	0	2703.77	13.01	256.09	979212.25	979237.80	30.95	27.73	24.83	23.43
33200	85000	0	0	2703.55	13.05	256.68	979212.03	979237.98	30.75	27.52	24.62	23.22
33000	85000	0	0	2703.81	13.08	255.44	979212.36	979238.01	30.70	27.47	24.60	23.21
32800	85000	0	0	2704.01	13.11	254.71	979212.50	979238.12	30.57	27.36	24.48	23.09
32600	85000	0	0	2703.57	13.16	256.77	979212.05	979238.22	30.51	27.28	24.37	22.97
32400	85000	0	0	2704.19	13.19	254.70	979212.68	979238.33	30.53	27.33	24.45	23.06
32200	85000	0	0	2703.94	13.23	255.87	979212.42	979238.44	30.43	27.21	24.32	22.93
32000	85000	0	0	2704.82	13.26	252.59	979213.11	979238.54	30.29	27.11	24.25	22.83
31800	85000	0	0	2704.31	13.29	253.83	979212.80	979238.65	29.97	26.78	23.92	22.54
31600	85000	0	0	2704.23	13.33	252.22	979212.72	979238.75	29.60	26.43	23.57	22.20
31400	85000	0	0	2704.58	13.36	250.37	979212.99	979238.86	29.38	26.21	23.38	22.01
31200	85000	0	0	2703.99	13.42	252.24	979212.47	979238.97	29.15	25.98	23.12	21.75
31000	85000	0	0	2704.05	13.46	252.44	979212.53	979239.07	29.15	25.97	23.12	21.74
30800	85000	0	0	2704.55	13.50	250.50	979213.04	979239.18	29.12	25.97	23.13	21.77
30600	85000	0	0	2704.24	13.53	252.11	979212.72	979239.28	29.05	25.88	23.03	21.66
30400	85000	0	0	2704.64	13.56	250.23	979213.13	979239.39	29.05	25.89	23.06	21.69
30200	85000	0	0	2705.11	14.04	249.83	979213.60	979239.50	29.01	25.87	23.05	21.68
30000	85000	0	0	2705.33	14.08	249.95	979213.82	979239.60	29.36	26.21	23.38	22.02
29700	85000	0	0	2705.61	14.11	250.52	979214.10	979239.76	29.60	26.45	23.62	22.25
29400	85000	0	0	2706.28	14.15	249.30	979214.78	979239.92	29.85	26.72	23.90	22.54
29200	85000	0	0	2706.79	14.19	248.27	979215.29	979240.03	30.04	26.91	24.11	22.75
29000	85000	0	0	2707.01	14.23	248.11	979215.52	979240.13	30.11	26.99	24.19	22.83
28800	85000	0	0	2707.23	14.26	247.48	979215.74	979240.24	30.07	26.96	24.18	22.83
28600	85000	0	0	2707.51	14.28	247.34	979216.02	979240.35	30.23	27.12	24.33	22.98
28400	85000	0	0	2707.74	14.31	247.47	979216.25	979240.45	30.39	27.26	24.48	23.13
28200	85000	0	0	2708.27	14.36	247.14	979216.79	979240.56	30.74	27.64	24.84	23.49
28000	85000	0	0	2708.47	14.39	247.39	979216.99	979240.67	30.89	27.78	24.98	23.64
BASE # 27				2703.14	14.58		979211.61					

Data computed on 24/12/81

SOLO GEOPHYSICS A CO

LOOP NUMBER 4A

SURVEYED FOR: GKA EXPLORATION Pty Ltd.

LOCATION: NILPINNA grid Sth Australia

COVERAGE: LINE 80000E FROM 50000N TO 45000N

Loop Time: 2.00 Hours
Loop Drift: -.136 Mgals
Drift Rate: -.07
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator: R.SLAVIN
Date: 11/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 28				2702.27	7.43		979193.20					
50000	80000	0	0	2702.27	7.43	280.90	979193.20	979226.86	28.30	24.77	21.59	20.06
49800	80000	0	0	2701.70	7.51	283.14	979192.70	979226.96	28.17	24.65	21.48	19.88
49600	80000	0	0	2701.53	7.55	283.98	979192.44	979227.07	28.01	24.44	21.23	19.68
49400	80000	0	0	2701.28	8.00	284.95	979192.18	979227.18	27.86	24.28	21.06	19.50
49200	80000	0	0	2700.48	8.06	288.28	979191.35	979227.28	27.66	24.04	20.77	19.20
49000	80000	0	0	2699.77	8.12	290.66	979190.84	979227.37	27.57	23.92	20.63	19.05
48800	80000	0	0	2698.56	8.16	296.71	979189.35	979227.49	27.31	23.59	20.22	18.60
48600	80000	0	0	2698.78	8.20	295.54	979189.58	979227.69	27.18	23.46	20.12	18.54
48400	80000	0	0	2698.83	8.25	294.06	979189.64	979227.70	26.98	23.27	19.94	18.33
48200	80000	0	0	2698.51	8.27	296.36	979189.31	979227.81	26.89	23.15	19.80	18.18
48000	80000	0	0	2698.10	8.34	298.27	979188.89	979227.92	26.77	23.02	19.64	18.02
47800	80000	0	0	2697.53	8.39	300.67	979188.30	979228.02	26.60	22.82	19.42	17.78
47600	80000	0	0	2697.38	8.42	301.61	979188.14	979228.13	26.55	22.75	19.34	17.70
47400	80000	0	0	2697.74	8.48	298.64	979188.53	979228.23	26.17	22.41	19.03	17.41
47200	80000	0	0	2697.24	8.53	300.21	979188.01	979228.34	25.89	22.12	18.72	17.09
47000	80000	0	0	2697.77	8.57	297.10	979188.59	979228.45	25.60	21.84	18.50	16.86
46800	80000	0	0	2697.59	9.02	297.98	979188.36	979228.55	25.45	21.71	18.35	16.72
46600	80000	0	0	2696.28	9.06	303.29	979187.02	979228.66	25.24	21.43	18.00	16.35
46400	80000	0	0	2694.48	9.11	311.16	979185.03	979228.76	24.91	20.99	17.47	15.78
46200	80000	0	0	2694.73	9.15	309.83	979185.40	979228.87	24.83	20.94	17.44	15.75
46000	80000	0	0	2694.20	9.22	311.24	979184.86	979228.97	24.54	20.62	17.10	15.41
45800	80000	0	0	2694.85	9.27	307.90	979185.54	979229.08	24.38	20.51	17.02	15.35
BASE # 28				2702.14	9.48		979193.20					

Data computed on 24/12/01

SOLO GEOPHYSICS & CO

LOOP NUMBER 44

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 60000E FROM 45800N TO 41600N

Loop Time: 2.00 Hours
Loop Drift: -.094 Mgals

Drift Rate -.05
Time Zone: 9.500

Gravimeter #C 837
Calibration Factor: 1.047

Operator R.SLAVIN
Date: 11/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 30				2694.81	10.37		979185.53					
45800	80000	0	0	2694.81	10.37	307.90	979185.53	979229.08	24.37	20.50	17.01	15.34
45600	80000	0	0	2695.08	10.43	305.83	979185.82	979229.17	24.09	20.25	16.79	15.12
45400	80000	0	0	2694.53	10.47	307.98	979185.24	979229.29	23.89	20.02	16.53	14.85
45200	80000	0	0	2694.87	10.52	306.86	979185.63	979229.40	23.74	19.85	16.43	14.71
45000	80000	0	0	2693.64	10.57	312.14	979184.32	979229.50	23.67	19.75	16.21	14.51
44800	80000	0	0	2693.77	11.00	312.30	979184.46	979229.61	23.74	19.81	16.28	14.58
44600	80000	0	0	2694.81	11.05	309.03	979185.55	979229.72	24.00	20.12	16.62	14.94
44400	80000	0	0	2695.56	11.09	307.25	979186.34	979229.82	24.29	20.43	16.95	15.28
44200	80000	0	0	2695.27	11.13	310.45	979186.04	979229.93	24.59	20.69	17.18	15.49
44000	80000	0	0	2697.02	11.18	304.61	979187.88	979230.03	25.04	21.21	17.76	16.10
43800	80000	0	0	2697.96	11.21	302.41	979189.86	979230.14	25.43	21.63	18.21	16.56
43600	80000	0	0	2698.46	11.25	301.76	979189.39	979230.25	25.71	21.92	18.50	16.86
43400	80000	0	0	2699.93	11.29	296.93	979190.93	979230.35	26.08	22.35	18.99	17.37
43200	80000	0	0	2701.03	11.34	293.71	979192.09	979230.46	26.42	22.73	19.41	17.81
43000	80000	0	0	2701.03	11.39	294.89	979192.09	979230.56	26.58	22.87	19.54	17.93
42800	80000	0	0	2700.46	11.43	298.06	979191.50	979230.67	26.48	22.83	19.46	17.84
42600	80000	0	0	2700.92	11.48	296.06	979191.99	979230.77	26.50	22.78	19.43	17.82
42400	80000	0	0	2700.62	11.53	298.01	979191.68	979230.88	26.53	22.79	19.41	17.79
42200	80000	0	0	2700.88	11.57	296.87	979191.95	979230.99	26.45	22.72	19.36	17.74
42000	80000	0	0	2700.84	12.02	297.75	979191.91	979231.09	26.54	22.80	19.43	17.80
41800	80000	0	0	2699.81	12.07	303.41	979190.84	979231.20	26.52	22.75	19.32	17.67
41600	80000	0	0	2702.17	12.13	293.67	979193.31	979231.30	26.79	23.10	19.78	18.18
BASE # 30				2694.72	12.37		979185.53					

Data computed on 24/12/01

SOLO GEOPHYSICS A CO

LOOP NUMBER 45

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 80000E FROM 41600N TO 38600N

Loop Time: 1.85 Hours
Loop Drift: .063 Mgals
Drift Rate: .03
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor 1.047
Operator H.SLAVIN
Date: 12/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 31				2702.14	13.27		979193.33					
41600	80000	0	0	2702.14	13.27	293.69	979193.33	979231.30	26.81	23.12	19.79	18.19
41400	80000	0	0	2702.45	13.32	293.22	979193.65	979231.41	26.92	23.24	19.92	18.32
41200	80000	0	0	2703.48	13.37	289.65	979194.73	979231.52	27.11	23.46	20.19	18.61
41000	80000	0	0	2704.16	13.42	287.53	979195.44	979231.62	27.24	23.63	20.38	18.81
40800	80000	0	0	2705.14	13.48	284.83	979196.46	979231.73	27.56	23.98	20.76	19.21
40600	80000	0	0	2705.74	13.52	282.67	979197.10	979231.83	27.82	24.27	21.07	19.53
40400	80000	0	0	2706.92	13.58	279.66	979198.32	979231.94	28.07	24.55	21.39	19.87
40200	80000	0	0	2707.45	14.09	278.22	979198.87	979232.05	28.35	24.85	21.69	20.17
40000	80000	0	0	2707.13	14.09	280.09	979198.53	979232.15	28.34	24.81	21.63	20.10
39800	80000	0	0	2707.12	14.11	281.07	979198.52	979232.26	28.45	24.99	21.91	20.48
39600	80000	0	0	2707.66	14.14	280.53	979199.09	979232.36	28.60	25.00	21.90	20.37
39400	80000	0	0	2708.00	14.17	280.25	979199.44	979232.47	28.74	25.24	22.09	20.59
39200	80000	0	0	2708.08	14.23	281.18	979199.52	979232.58	28.92	25.43	22.25	20.73
39000	80000	0	0	2707.74	14.27	284.17	979199.06	979232.68	29.06	25.49	22.29	20.72
38800	80000	0	0	2706.82	14.34	288.26	979198.19	979232.79	28.99	25.37	22.11	20.54
38600	80000	0	0	2707.04	14.39	287.80	979198.42	979232.89	29.03	25.41	22.15	20.58
BASE # 31				2702.20	15.10		979193.33					

Data computed on 24/12/01

WOLD GEOPHYSICS & CO

LOOP NUMBER 46

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE: LINE 00000E FROM 30600N TO 33800N

Loop Time: 2.07 Hours
Loop Drift: -.115 Mgals
Drift Rate: -.06
Time Zone: 9.500
Gravimeter #G 037
Calibration Factor: 1.047
Operator: R.SLAVIN
Date: 13/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 32				2707.22	9.49		979198.41					
38600	80000	0	0	2707.22	9.49	287.88	979198.41	979232.89	29.02	25.40	22.14	20.57
38400	80000	0	0	2707.45	10.01	287.37	979198.66	979233.00	29.06	25.44	22.19	20.63
38200	80000	0	0	2708.79	10.06	281.87	979200.07	979233.11	29.14	25.60	22.41	20.87
38000	80000	0	0	2709.25	10.10	277.17	979200.56	979233.21	28.93	25.42	22.26	20.74
37800	80000	0	0	2709.55	10.13	277.58	979200.87	979233.32	28.99	25.30	22.16	20.64
37600	80000	0	0	2709.94	10.18	275.64	979201.29	979233.42	28.87	25.29	22.08	20.58
37400	80000	0	0	2710.27	10.23	274.56	979201.64	979233.53	28.67	25.22	22.11	20.62
37200	80000	0	0	2710.50	10.27	273.46	979201.96	979233.64	28.65	25.21	22.12	20.63
37000	80000	0	0	2710.00	10.31	276.65	979201.36	979233.74	28.65	25.17	22.04	20.53
36800	80000	0	0	2709.44	10.35	277.67	979200.78	979233.85	28.63	25.11	21.95	20.42
36600	80000	0	0	2708.97	10.39	281.64	979200.29	979233.95	28.46	24.92	21.73	20.20
36400	80000	0	0	2708.65	10.47	282.59	979199.96	979234.06	28.24	24.68	21.49	19.95
36200	80000	0	0	2709.49	10.51	278.78	979200.85	979234.17	28.18	24.67	21.52	20.00
36000	80000	0	0	2710.09	10.56	276.97	979201.48	979234.27	28.11	24.64	21.51	20.01
35800	80000	0	0	2710.42	10.59	274.68	979201.83	979234.38	28.04	24.59	21.48	19.98
35600	80000	0	0	2710.74	11.04	273.17	979202.17	979234.48	27.94	24.51	21.42	19.93
35400	80000	0	0	2710.99	11.07	272.73	979202.22	979234.59	27.99	24.36	21.28	19.79
35200	80000	0	0	2710.59	11.10	272.98	979202.00	979234.70	27.93	24.09	21.00	19.52
35000	80000	0	0	2710.59	11.13	272.15	979202.02	979234.80	27.95	23.83	20.75	19.27
34800	80000	0	0	2710.62	11.16	271.60	979202.05	979234.91	27.86	23.64	20.57	19.09
34600	80000	0	0	2709.83	11.22	275.16	979201.23	979235.01	26.91	23.45	20.34	18.84
34400	80000	0	0	2710.13	11.27	273.71	979201.55	979235.12	26.81	23.32	20.22	18.78
34200	80000	0	0	2710.29	11.30	272.54	979201.72	979235.23	26.61	23.19	20.10	18.62
34000	80000	0	0	2710.39	11.35	272.11	979201.73	979235.33	26.43	23.01	19.93	18.44
33800	80000	0	0	2709.85	11.39	274.12	979201.27	979235.44	26.30	22.85	19.75	18.25
BASE # 32				2707.11	11.53		979198.41					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 47

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 000000E FROM 33000N TO 29000N

Loop Time: 1.80 Hours Drift Rate: -.03 Gravimeter #G 037 Operator M.SLAVIN
Loop Drift: -.052 Mgals Time Zone: 9.500 Calibration Factor: 1.047 Date: 13/12/81

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 33				2709.01	12 39		979201.26					
33800	80000	0	0	2709.01	12 39	274.12	979201.26	979235.44	26.29	22.04	19.74	18.25
33600	80000	0	0	2710.36	12 44	271.08	979201.94	979235.54	26.19	22.78	19.72	18.24
33400	80000	0	0	2709.87	12 49	274.04	979201.33	979235.65	26.13	22.68	19.58	18.09
33200	80000	0	0	2709.99	12 54	273.37	979201.46	979235.76	26.08	22.56	19.47	17.98
33000	80000	0	0	2709.95	12 59	273.59	979201.41	979235.86	25.90	22.46	19.37	17.88
32800	80000	0	0	2710.30	13 03	271.75	979201.78	979235.97	25.76	22.34	19.27	17.79
32600	80000	0	0	2710.93	13.07	269.07	979202.45	979236.07	25.73	22.34	19.30	17.83
32400	80000	0	0	2711.29	13 11	267.52	979202.83	979236.18	25.67	22.31	19.28	17.82
32200	80000	0	0	2711.38	13 14	267.07	979202.92	979236.29	25.55	22.19	19.17	17.71
32000	80000	0	0	2711.77	13 18	264.68	979203.33	979236.39	25.52	22.04	19.08	17.56
31800	80000	0	0	2711.47	13 22	265.35	979203.02	979236.50	25.05	21.72	18.71	17.27
31600	80000	0	0	2711.70	13 27	262.96	979203.35	979236.61	24.95	21.44	18.46	17.03
31400	80000	0	0	2712.10	13 31	260.91	979203.68	979236.71	24.53	21.25	18.29	16.87
31200	80000	0	0	2712.90	13 36	260.14	979203.66	979236.82	24.23	20.96	18.02	16.60
31000	80000	0	0	2711.32	13.39	262.89	979202.87	979236.92	23.94	20.63	17.66	16.22
30800	80000	0	0	2711.55	13 43	260.98	979203.11	979237.03	23.65	20.37	17.42	16.00
30600	80000	0	0	2711.49	13 46	260.72	979203.05	979237.14	23.43	20.15	17.20	15.78
30400	80000	0	0	2711.02	13 50	262.57	979202.56	979237.24	23.24	19.94	16.98	15.54
30200	80000	0	0	2711.29	13 54	261.26	979202.84	979237.35	23.13	19.84	16.89	15.46
30000	80000	0	0	2711.80	13 58	257.51	979203.38	979237.45	23.17	19.91	16.97	15.56
29800	80000	0	0	2712.07	14 03	258.95	979203.67	979237.56	23.23	19.97	17.04	15.63
29600	80000	0	0	2712.73	14 06	256.73	979204.36	979237.67	23.39	20.14	17.23	15.83
29400	80000	0	0	2713.33	14 10	256.06	979204.99	979237.77	23.70	20.40	17.58	16.19
29200	80000	0	0	2713.87	14 14	255.74	979205.56	979237.88	24.09	20.80	17.98	16.59
29000	80000	0	0	2714.14	14.18	256.51	979205.84	979237.98	24.44	21.21	18.31	16.91
BASE # 33				2709.76	14 32		979201.26					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

LOOP NUMBER 48

SURVEYED FOR CRA EXPLORATION Pty Ltd

LOCATION NILPINNA grid Sth Australia

COVERAGE LINE 80000E FROM 29000N TO 25000N

Loop Time: 1.70 Hours Drift Rate: .03 Gravimeter #C 037 Operator N.SLAVIN
Loop Drift: .052 Mgals Time Zone 9.500 Calibration Factor: 1.047 Date: 13/12/01

GRID NORTH	GRID EAST	MERCATOR NORTHING	MERCATOR EASTING	METER READING	TIME	ELEVATION (metres)	OBSERVED GRAVITY	THEORETICAL GRAVITY	BOUGUER GRAVITY (gms/cc) 2.1	2.4	2.67	2.8
BASE # 34				2714.13	15.05		979205.83					
29000	80000	0	0	2714.13	15.05	256.51	979205.83	979237.90	24.43	21.20	18.30	16.90
28800	80000	0	0	2714.76	15.11	256.04	979206.49	979238.07	24.88	21.66	18.76	17.36
28600	80000	0	0	2715.24	15.15	256.24	979206.99	979238.20	25.31	22.09	19.19	17.80
28400	80000	0	0	2715.82	15.18	256.48	979207.59	979238.30	25.86	22.65	19.73	18.34
28200	80000	0	0	2716.20	15.23	257.02	979208.07	979238.41	26.36	23.13	20.22	18.82
28000	80000	0	0	2716.54	15.26	257.92	979208.34	979238.52	26.72	23.48	20.56	19.16
27800	80000	0	0	2716.85	15.32	257.63	979208.67	979238.62	26.87	23.63	20.72	19.32
27600	80000	0	0	2717.37	15.35	255.72	979209.23	979238.73	26.91	23.70	20.80	19.41
27400	80000	0	0	2717.79	15.41	255.35	979209.65	979238.83	27.14	23.93	21.04	19.65
27200	80000	0	0	2717.89	15.45	257.17	979209.54	979238.94	27.39	24.16	21.24	19.84
27000	80000	0	0	2718.00	15.49	257.60	979209.86	979239.05	27.64	24.40	21.48	20.08
26800	80000	0	0	2718.53	15.53	256.70	979210.41	979239.15	27.87	24.66	21.75	20.36
26600	80000	0	0	2718.79	15.57	256.79	979210.68	979239.26	28.07	24.84	21.94	20.54
26400	80000	0	0	2719.18	16.00	256.33	979211.01	979239.36	28.17	24.96	22.06	20.67
26200	80000	0	0	2719.31	16.03	255.90	979211.23	979239.47	28.20	24.99	22.09	20.70
26000	80000	0	0	2719.47	16.07	255.67	979211.39	979239.58	28.22	25.00	22.11	20.72
25800	80000	0	0	2719.70	16.11	255.40	979211.63	979239.68	28.29	25.07	22.18	20.79
25600	80000	0	0	2720.21	16.16	254.51	979212.16	979239.77	28.51	25.31	22.43	21.05
25400	80000	0	0	2720.56	16.20	254.25	979212.53	979239.90	28.72	25.52	22.64	21.26
25200	80000	0	0	2720.52	16.24	255.33	979212.48	979240.00	28.80	25.59	22.70	21.31
25000	80000	0	0	2721.14	16.29	253.33	979213.13	979240.11	28.90	25.72	22.85	21.47
BASE # 34				2714.18	16.47		979205.83					

Data computed on 24/12/81

SOLO GEOPHYSICS & CO

Job # 15 308

LINE 00000 E

row #	STATION #	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP #	RPTS	BOUGUER GRAVITY (gms/cc) 1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
1	0	25000	00000	253.33	48		32.07	31.03	29.96	28.90	27.84	26.78	25.72	24.66	23.59	22.53
2	0	25200	00000	255.33	48		32.01	30.94	29.87	28.80	27.73	26.66	25.59	24.52	23.45	22.38
3	0	25400	00000	254.25	48		31.91	30.85	29.78	28.72	27.65	26.58	25.52	24.45	23.39	22.32
4	0	25600	00000	254.51	48		31.71	30.65	29.58	28.51	27.45	26.38	25.31	24.25	23.18	22.11
5	0	25800	00000	255.40	48		31.50	30.43	29.36	28.29	27.22	26.14	25.07	24.00	22.93	21.86
6	0	26000	00000	255.69	48		31.43	30.36	29.29	28.22	27.15	26.07	25.00	23.93	22.86	21.79
7	0	26200	00000	255.90	48		31.42	30.35	29.28	28.20	27.13	26.06	24.99	23.91	22.84	21.77
8	0	26400	00000	256.33	48		31.41	30.34	29.26	28.19	27.11	26.04	24.96	23.89	22.82	21.74
9	0	26600	00000	256.79	48		31.30	30.22	29.15	28.07	26.99	25.92	24.84	23.77	22.69	21.61
10	0	26800	00000	256.70	48		31.11	30.04	28.96	27.89	26.81	25.74	24.66	23.58	22.51	21.43
11	0	27000	00000	257.60	48		30.88	29.80	28.72	27.64	26.56	25.48	24.40	23.32	22.24	21.16
12	0	27200	00000	257.47	48		30.63	29.55	28.47	27.39	26.31	25.24	24.16	23.08	22.00	20.92
13	0	27400	00000	255.35	48		30.35	29.28	28.21	27.14	26.07	25.00	23.93	22.86	21.79	20.72
14	0	27600	00000	255.72	48		30.13	29.05	27.98	26.91	25.84	24.77	23.70	22.62	21.55	20.48
15	0	27800	00000	257.63	48		30.11	29.03	27.95	26.87	25.79	24.71	23.63	22.56	21.48	20.40
16	0	28000	00000	257.92	48		29.97	28.88	27.80	26.72	25.64	24.56	23.48	22.40	21.32	20.24
17	0	28200	00000	257.02	48		29.59	28.51	27.44	26.36	25.28	24.21	23.13	22.05	20.97	19.90
18	0	28400	00000	256.44	48		29.08	28.01	26.93	25.86	24.78	23.71	22.63	21.56	20.48	19.41
19	0	28600	00000	256.24	48		28.54	27.46	26.39	25.31	24.24	23.17	22.09	21.02	19.94	18.87
20	0	28800	00000	256.04	48		28.09	27.02	25.95	24.88	23.80	22.73	21.66	20.58	19.51	18.44
21	0	29000	00000	256.51	47		27.67	26.59	25.52	24.44	23.36	22.29	21.21	20.14	19.06	17.99
22	0	29000	00000	256.51	48	* RPT	27.65	26.58	25.50	24.43	23.35	22.28	21.20	20.13	19.05	17.98
23	0	29200	00000	255.74	47		27.31	26.24	25.16	24.09	23.02	21.95	20.88	19.80	18.73	17.66
24	0	29400	00000	256.06	47		26.92	25.85	24.77	23.70	22.63	21.55	20.48	19.41	18.34	17.26
25	0	29600	00000	256.93	47		26.60	25.52	24.45	23.37	22.29	21.21	20.14	19.06	17.98	16.91
26	0	29800	00000	258.95	47		26.40	25.40	24.31	23.23	22.14	21.06	19.97	18.89	17.80	16.72
27	0	30000	00000	259.51	47		26.43	25.35	24.26	23.17	22.08	21.00	19.91	18.82	17.73	16.65
28	0	30200	00000	261.26	47		26.41	25.32	24.22	23.13	22.03	20.94	19.84	18.75	17.65	16.56
29	0	30400	00000	262.59	47		26.54	25.44	24.34	23.24	22.14	21.04	19.94	18.84	17.74	16.64
30	0	30600	00000	260.72	47		26.71	25.61	24.52	23.43	22.33	21.24	20.15	19.06	17.96	16.87
31	0	30800	00000	260.98	47		26.93	25.84	24.75	23.65	22.56	21.46	20.37	19.28	18.18	17.09
32	0	31000	00000	262.89	47		27.24	26.14	25.04	23.94	22.83	21.73	20.63	19.53	18.43	17.33
33	0	31200	00000	260.14	47		27.50	26.41	25.32	24.23	23.14	22.05	20.96	19.87	18.78	17.69
34	0	31400	00000	260.91	47		27.81	26.71	25.62	24.53	23.43	22.34	21.25	20.15	19.06	17.96
35	0	31600	00000	262.96	47		28.05	26.95	25.85	24.75	23.64	22.54	21.44	20.34	19.24	18.13
36	0	31800	00000	265.35	47		28.32	27.28	26.17	25.05	23.94	22.83	21.72	20.60	19.49	18.38
37	0	32000	00000	264.68	47		28.65	27.54	26.43	25.32	24.21	23.11	22.00	20.89	19.78	18.67
38	0	32200	00000	267.07	47		28.90	27.79	26.67	25.55	24.43	23.31	22.19	21.07	19.95	18.83
39	0	32400	00000	267.59	47		29.04	27.91	26.79	25.69	24.55	23.43	22.31	21.19	20.06	18.94
40	0	32600	00000	269.07	47		29.11	27.98	26.85	25.73	24.60	23.47	22.34	21.21	20.09	18.96
41	0	32800	00000	271.75	47		29.16	28.04	26.90	25.76	24.62	23.48	22.34	21.21	20.07	18.93
42	0	33000	00000	273.59	47		29.34	28.20	27.05	25.90	24.76	23.61	22.46	21.32	20.17	19.02
43	0	33200	00000	273.37	47		29.44	28.29	27.15	26.00	24.86	23.71	22.56	21.42	20.27	19.13
44	0	33400	00000	274.04	47		29.57	28.42	27.28	26.13	24.98	23.83	22.68	21.53	20.38	19.24
45	0	33600	00000	271.06	47		29.60	28.46	27.33	26.19	25.06	23.92	22.78	21.65	20.54	19.38
46	0	33800	00000	274.12	47		29.74	28.59	27.44	26.29	25.14	23.99	22.84	21.69	20.55	19.40
47	0	33800	00000	274.12	46	* RPT	29.74	28.59	27.45	26.30	25.15	24.00	22.85	21.70	20.55	19.40
48	0	34000	00000	272.11	46		29.85	28.71	27.57	26.43	25.29	24.15	23.01	21.87	20.72	19.58
49	0	34200	00000	272.54	46		30.04	28.90	27.75	26.61	25.47	24.33	23.19	22.04	20.90	19.76
50	0	34400	00000	273.71	46		30.25	29.10	27.95	26.81	25.66	24.51	23.37	22.22	21.07	19.92

51	0	34600	80000	275.16	46		30.37	29.22	28.07	26.91	25.76	24.61	23.45	22.30	21.15	19.99
52	0	34800	80000	271.60	46		30.47	29.33	28.20	27.06	25.92	24.78	23.64	22.50	21.37	20.23
53	0	35000	80000	272.15	46		30.67	29.53	28.39	27.25	26.11	24.97	23.83	22.69	21.55	20.41
54	0	35200	80000	272.98	46		30.76	29.61	28.47	27.33	26.20	25.06	23.92	22.78	21.64	20.50
55	0	35400	80000	272.73	46		31.22	30.08	28.94	27.79	26.65	25.51	24.36	23.22	22.08	20.94
56	0	35600	80000	273.17	46		31.30	30.23	29.09	27.94	26.80	25.65	24.51	23.36	22.22	21.07
57	0	35800	80000	274.50	46		31.42	30.34	29.19	28.04	26.89	25.74	24.59	23.44	22.28	21.13
58	0	36000	80000	276.09	46		31.58	30.42	29.27	28.11	26.95	25.79	24.64	23.48	22.32	21.17
59	0	36200	80000	278.78	46		31.60	30.51	29.34	28.18	27.01	25.84	24.67	23.50	22.33	21.17
60	0	36400	80000	282.59	46		31.79	30.61	29.42	28.24	27.05	25.87	24.69	23.50	22.32	21.13
61	0	36600	80000	281.64	46		32.00	30.82	29.64	28.46	29.20	26.10	24.92	23.74	22.56	21.38
62	0	36800	80000	279.69	46		32.14	30.97	29.80	28.63	27.45	26.20	25.11	23.94	22.77	21.59
63	0	37000	80000	276.65	46		32.12	30.96	29.80	28.65	27.47	26.33	25.19	24.01	22.85	21.69
64	0	37200	80000	273.46	46		32.09	30.94	29.80	28.65	27.51	26.36	25.21	24.07	22.92	21.77
65	0	37400	80000	274.56	46		32.12	30.97	29.82	28.67	27.52	26.37	25.22	24.07	22.92	21.77
66	0	37600	80000	275.64	46		32.13	30.98	29.82	28.67	27.51	26.35	25.20	24.04	22.89	21.73
67	0	37800	80000	277.58	46		32.20	31.11	29.95	28.79	27.62	26.46	25.30	24.13	22.99	21.81
68	0	38000	80000	279.17	46		32.44	31.27	30.10	28.93	27.76	26.59	25.42	24.25	23.08	21.91
69	0	38200	80000	281.07	46		32.69	31.50	30.32	29.14	27.96	26.78	25.60	24.42	23.24	22.05
70	0	38400	80000	282.39	46		32.67	31.47	30.26	29.06	27.85	26.65	25.44	24.24	23.04	21.83
71	0	38600	80000	282.88	45		32.65	31.44	30.24	29.03	27.82	26.62	25.41	24.21	23.00	21.79
72	0	38600	80000	282.88	46	* RPT	32.64	31.43	30.23	29.02	27.81	26.61	25.40	24.19	22.99	21.78
73	0	38800	80000	280.26	45		32.62	31.41	30.20	28.99	27.79	26.58	25.39	24.16	22.95	21.74
74	0	39000	80000	284.17	45		32.63	31.44	30.25	27.06	27.87	26.68	25.49	24.29	23.10	21.91
75	0	39200	80000	281.18	45		32.50	31.33	30.15	28.97	27.79	26.61	25.43	24.26	23.08	21.90
76	0	39400	80000	280.25	45		32.31	31.14	29.96	28.79	27.61	26.44	25.27	24.09	22.92	21.74
77	0	39600	80000	280.53	45		32.13	30.95	29.78	28.60	27.43	26.25	25.08	23.90	22.72	21.55
78	0	39800	80000	281.89	45		31.99	30.81	29.63	28.45	27.26	26.08	24.90	23.72	22.54	21.36
79	0	40000	80000	280.87	45		31.87	30.69	29.52	28.34	27.16	25.98	24.81	23.63	22.45	21.28
80	0	40200	80000	278.92	45		31.86	30.69	29.52	28.35	27.18	26.02	24.85	23.68	22.51	21.34
81	0	40400	80000	279.66	45		31.59	30.41	29.24	28.07	26.90	25.73	24.55	23.38	22.21	21.04
82	0	40600	80000	282.69	45		31.37	30.19	29.00	27.82	26.64	25.45	24.27	23.08	21.90	20.71
83	0	40800	80000	284.03	45		31.14	29.95	28.76	27.56	26.37	25.18	23.98	22.79	21.59	20.40
84	0	41000	80000	287.53	45		30.86	29.65	28.45	27.24	26.04	24.83	23.63	22.42	21.22	20.01
85	0	41200	80000	289.65	45		30.75	29.53	28.32	27.11	25.89	24.68	23.46	22.25	21.04	19.82
86	0	41400	80000	293.22	45		30.61	29.38	28.15	26.92	25.69	24.46	23.24	22.01	20.78	19.55
87	0	41600	80000	293.69	45		30.50	29.27	28.04	26.81	25.58	24.35	23.16	21.89	20.66	19.43
88	0	41600	80000	293.69	44	* RPT	30.47	29.26	28.03	26.79	25.56	24.33	23.10	21.87	20.64	19.41
89	0	41800	80000	303.41	44		30.30	29.11	27.84	26.57	25.30	24.02	22.75	21.48	20.21	18.94
90	0	42000	80000	297.95	44		30.29	29.04	27.79	26.54	25.30	24.05	22.80	21.55	20.30	19.05
91	0	42200	80000	296.07	44		30.18	28.94	27.69	26.45	25.21	23.96	22.72	21.47	20.23	18.98
92	0	42400	80000	298.01	44		30.28	29.03	27.78	26.53	25.28	24.03	22.79	21.54	20.29	19.04
93	0	42600	80000	296.00	44		30.23	28.97	27.75	26.50	25.26	24.02	22.78	21.54	20.30	19.06
94	0	42800	80000	298.06	44		30.33	29.08	27.83	26.58	25.33	24.08	22.83	21.58	20.33	19.08
95	0	43000	80000	294.89	44		30.27	29.05	27.82	26.58	25.34	24.11	22.87	21.64	20.40	19.16
96	0	43200	80000	293.71	44		30.11	28.88	27.65	26.42	25.19	23.96	22.73	21.50	20.27	19.04
97	0	43400	80000	296.93	44		27.91	28.57	27.33	26.08	24.84	23.59	22.35	21.10	19.86	18.62
98	0	43600	80000	301.76	44		29.50	28.24	26.97	25.71	24.45	23.18	21.92	20.65	19.39	18.12
99	0	43800	80000	302.41	44		27.23	27.77	26.70	25.43	24.17	22.90	21.63	20.36	19.10	17.83
100	0	44000	80000	304.61	44		28.87	27.59	26.31	25.04	23.76	22.48	21.21	19.93	18.65	17.38
101	0	44200	80000	310.45	44		28.50	27.20	25.90	24.59	23.29	21.99	20.69	19.39	18.09	16.79
102	0	44400	80000	307.25	44		28.16	26.87	25.58	24.29	23.01	21.72	20.43	19.14	17.86	16.57
103	0	44600	80000	309.03	44		27.87	26.59	25.30	24.00	22.71	21.41	20.12	18.82	17.53	16.23
104	0	44800	80000	312.30	44		27.67	26.36	25.05	23.74	22.43	21.12	19.81	18.50	17.19	15.89
105	0	45000	80000	312.14	44		27.60	26.29	24.98	23.67	22.36	21.05	19.75	18.44	17.13	15.82
106	0	45200	80000	306.06	44		27.39	26.31	25.02	23.74	22.46	21.18	19.89	18.61	17.33	16.04
107	0	45400	80000	307.98	44		27.76	26.47	25.18	23.89	22.60	21.31	20.02	18.73	17.44	16.14
108	0	45600	80000	305.83	44		27.74	26.66	25.38	24.09	22.81	21.53	20.25	18.97	17.68	16.40
109	0	45800	80000	307.90	44		28.04	26.95	25.66	24.37	23.08	21.79	20.50	19.21	17.92	16.63
110	0	45800	80000	307.90	43	* RPT	28.25	26.96	25.67	24.38	23.09	21.80	20.51	19.22	17.93	16.64
111	0	46000	80000	311.24	43		28.45	27.15	25.84	24.54	23.23	21.93	20.62	19.32	18.01	16.71
112	0	46200	80000	309.62	43		28.73	27.43	26.13	24.83	23.54	22.24	20.94	19.64	18.35	17.05
113	0	46400	80000	311.16	43		28.62	27.32	26.21	24.91	23.60	22.30	20.99	19.69	18.39	17.08
114	0	46600	80000	303.20	43		29.05	27.70	26.51	25.24	23.97	22.70	21.43	20.16	18.89	17.62
115	0	46800	80000	297.58	43		27.20	27.93	26.70	25.45	24.21	22.96	21.71	20.47	19.22	17.97
116	0	47000	80000	297.10	43		29.41	28.17	26.92	25.68	24.43	23.19	21.94	20.70	19.45	18.21

117	0	47200	80000	300.21	43		27.67	28.41	27.15	25.89	24.63	23.37	22.12	20.86	19.60	18.34
118	0	47400	80000	298.64	43		27.72	28.47	27.22	26.17	24.92	23.67	22.41	21.16	19.91	18.66
119	0	47600	80000	301.61	43		30.34	29.07	27.81	26.55	25.28	24.02	22.75	21.49	20.23	18.96
120	0	47800	80000	300.67	43		30.38	29.12	27.86	26.60	25.34	24.08	22.82	21.56	20.30	19.04
121	0	48000	80000	298.27	43		30.52	29.27	28.02	26.77	25.52	24.27	23.02	21.77	20.52	19.27
122	0	48200	80000	296.36	43		30.60	29.36	28.12	26.87	25.63	24.39	23.15	21.91	20.66	19.42
123	0	48400	80000	294.86	43		30.69	29.45	28.22	26.98	25.74	24.51	23.27	22.04	20.80	19.59
124	0	48600	80000	295.54	43		30.89	29.66	28.42	27.18	25.94	24.70	23.46	22.22	20.99	19.75
125	0	48800	80000	296.71	43		31.04	29.79	28.55	27.31	26.06	24.82	23.58	22.33	21.09	19.85
126	0	49000	80000	290.66	43		31.23	30.01	28.79	27.57	26.35	25.14	23.92	22.70	21.48	20.26
127	0	49200	80000	288.20	43		31.28	30.08	28.87	27.66	26.45	25.24	24.04	22.83	21.62	20.41
128	0	49400	80000	284.95	43		31.45	30.25	29.06	27.86	26.67	25.47	24.28	23.09	21.89	20.70
129	0	49600	80000	283.98	43		31.50	30.37	29.20	28.01	26.82	25.63	24.44	23.25	22.06	20.87
130	0	49800	80000	283.14	43		31.75	30.56	29.38	28.19	27.00	25.82	24.63	23.44	22.26	21.07
131	0	50000	80000	280.90	43		31.84	30.66	29.48	28.30	27.13	25.95	24.77	23.60	22.42	21.24
132	0	50000	80000	280.90	5	* RPT	31.86	30.68	29.50	28.32	27.15	25.97	24.79	23.62	22.44	21.26
133	0	50000	80000	280.90	38	* RPT	31.84	30.66	29.48	28.30	27.13	25.95	24.77	23.60	22.42	21.24
134	0	50000	80000	280.90	37	* RPT	31.86	30.69	29.51	28.33	27.15	25.98	24.80	23.62	22.44	21.27
135	0	50000	80000	280.90	37	* RPT	31.81	30.63	29.46	28.28	27.10	25.92	24.75	23.57	22.39	21.22
136	0	50200	80000	279.31	38		31.92	30.75	29.58	28.41	27.24	26.07	24.90	23.73	22.56	21.39
137	0	50400	80000	279.04	38		31.91	30.74	29.57	28.40	27.23	26.06	24.89	23.72	22.55	21.38
138	0	50600	80000	279.22	38		31.91	30.74	29.57	28.40	27.23	26.06	24.89	23.72	22.55	21.38
139	0	50800	80000	275.50	38		32.00	30.84	29.69	28.53	27.36	26.22	25.07	23.91	22.76	21.60
140	0	51000	80000	274.05	38		32.09	30.95	29.80	28.65	27.50	26.35	25.20	24.05	22.91	21.76
141	0	51200	80000	272.57	38		32.23	31.09	29.94	28.80	27.66	26.52	25.37	24.23	23.09	21.95
142	0	51400	80000	273.63	38		32.37	31.22	30.07	28.93	27.78	26.63	25.49	24.34	23.19	22.04
143	0	51600	80000	276.25	38		32.56	31.40	30.25	29.09	27.93	26.77	25.62	24.46	23.30	22.14
144	0	51800	80000	274.79	38		32.71	31.56	30.40	29.25	28.10	26.95	25.80	24.65	23.49	22.34
145	0	52000	80000	273.55	38		32.83	31.69	30.54	29.39	28.25	27.10	25.95	24.81	23.66	22.51
146	0	52200	80000	274.23	38		32.89	31.74	30.59	29.44	28.30	27.15	26.00	24.85	23.70	22.55
147	0	52400	80000	273.44	38		33.07	31.93	30.78	29.63	28.49	27.34	26.20	25.05	23.90	22.76
148	0	52600	80000	270.87	38		33.21	32.08	30.94	29.80	28.67	27.53	26.40	25.26	24.13	22.99
149	0	52800	80000	271.43	38		33.38	32.24	31.10	29.97	28.83	27.69	26.55	25.42	24.28	23.14
150	0	53000	80000	274.04	38		33.67	32.52	31.37	30.22	29.07	27.92	26.78	25.63	24.48	23.33
151	0	53200	80000	276.79	38		33.86	32.70	31.54	30.38	29.22	28.06	26.90	25.74	24.58	23.42
152	0	53400	80000	273.45	38		34.14	32.99	31.84	30.70	29.55	28.41	27.26	26.11	24.97	23.82
153	0	53600	80000	271.85	38		34.40	33.26	32.12	30.98	29.84	28.70	27.56	26.42	25.28	24.14
154	0	53800	80000	270.90	38		34.71	33.57	32.44	31.30	30.16	29.03	27.89	26.76	25.62	24.49
155	0	54000	80000	270.36	39		34.89	33.75	32.63	31.49	30.35	29.23	28.10	26.96	25.83	24.70
156	0	54000	80000	270.36	38	* RPT	34.90	33.77	32.64	31.50	30.37	29.24	28.10	26.97	25.84	24.70
157	0	54200	80000	269.19	39		35.13	34.00	32.88	31.75	30.62	29.49	28.36	27.23	26.11	24.98
158	0	54400	80000	267.28	39		35.20	34.16	33.04	31.92	30.80	29.68	28.56	27.44	26.32	25.20
159	0	54600	80000	266.55	39		35.41	34.36	33.18	32.06	30.95	29.83	28.71	27.59	26.48	25.36
160	0	54800	80000	263.96	39		35.51	34.41	33.30	32.20	31.09	29.98	28.88	27.77	26.66	25.56
161	0	55000	80000	262.83	39		35.59	34.49	33.39	32.29	31.18	30.08	28.98	27.88	26.78	25.68
162	0	55200	80000	261.25	39		35.68	34.58	33.49	32.39	31.30	30.20	29.11	28.01	26.92	25.82
163	0	55400	80000	261.88	39		35.69	34.59	33.50	32.40	31.30	30.20	29.11	28.01	26.91	25.81
164	0	55600	80000	260.20	39		35.74	34.65	33.56	32.47	31.38	30.29	29.20	28.11	27.02	25.93
165	0	55800	80000	259.79	39		35.82	34.73	33.64	32.55	31.46	30.39	29.28	28.19	27.11	26.02
166	0	56000	80000	261.29	39		35.92	34.83	33.73	32.64	31.54	30.45	29.35	28.26	27.16	26.07

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Data Computed on 24/12/81

GULF GEOPHYSICS & CO

Job # 15 308

LINE 85000 E

FOR #	STATION #	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP #.	RPTS	BOUGUER GRAVITY (gms/cc) 1.0	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
1	0	28000	85000	247.39	42		34.00	32.97	31.93	30.89	29.86	28.82	27.78	26.75	25.71	24.67
2	0	28200	85000	247.14	42		33.85	32.81	31.78	30.74	29.71	28.67	27.64	26.60	25.56	24.53
3	0	28400	85000	247.49	42		33.50	32.46	31.43	30.39	29.35	28.31	27.28	26.24	25.20	24.17
4	0	28600	85000	247.34	42		33.34	32.31	31.27	30.23	29.20	28.16	27.12	26.09	25.05	24.01
5	0	28800	85000	247.40	42		33.20	32.16	31.13	30.09	29.05	28.01	26.98	25.94	24.90	23.87
6	0	29000	85000	248.11	42		33.23	32.19	31.15	30.11	29.07	28.03	26.99	25.95	24.91	23.87
7	0	29200	85000	248.29	42		33.16	32.12	31.08	30.04	29.00	27.96	26.91	25.87	24.83	23.79
8	0	29400	85000	249.30	42		32.99	31.94	30.90	29.85	28.81	27.76	26.72	25.67	24.63	23.58
9	0	29700	85000	250.52	42		32.75	31.70	30.65	29.60	28.55	27.50	26.45	25.40	24.35	23.30
10	0	30000	85000	249.95	42		32.50	31.45	30.40	29.36	28.31	27.26	26.21	25.17	24.12	23.07
11	0	30200	85000	249.83	42		32.35	31.31	30.26	29.21	28.17	27.12	26.07	25.03	23.98	22.93
12	0	30400	85000	250.73	42		32.20	31.15	30.10	29.05	27.99	26.94	25.89	24.84	23.79	22.74
13	0	30600	85000	252.11	42		32.22	31.17	30.11	29.05	28.00	26.94	25.88	24.83	23.77	22.71
14	0	30800	85000	250.50	42		32.27	31.22	30.17	29.12	28.07	27.02	25.97	24.92	23.87	22.82
15	0	31000	85000	252.44	42		32.32	31.26	30.20	29.15	28.09	27.03	25.97	24.91	23.86	22.80
16	0	31200	85000	252.24	42		32.32	31.26	30.21	29.15	28.09	27.03	25.98	24.92	23.86	22.81
17	0	31400	85000	250.37	42		32.51	31.46	30.41	29.36	28.31	27.26	26.21	25.16	24.11	23.06
18	0	31600	85000	252.22	42		32.77	31.71	30.66	29.60	28.54	27.49	26.43	25.37	24.31	23.26
19	0	31800	85000	253.03	42		33.15	32.09	31.03	29.97	28.90	27.84	26.78	25.72	24.66	23.60
20	0	32000	85000	252.59	42		33.46	32.40	31.35	30.29	29.23	28.17	27.11	26.05	24.99	23.94
21	0	32200	85000	255.87	42		33.65	32.59	31.50	30.43	29.36	28.29	27.21	26.14	25.07	24.00
22	0	32400	85000	254.70	42		33.73	32.67	31.60	30.52	29.46	28.40	27.33	26.26	25.19	24.13
23	0	32600	85000	256.97	42		33.74	32.67	31.59	30.51	29.44	28.36	27.28	26.21	25.13	24.05
24	0	32800	85000	254.71	42		33.77	32.70	31.63	30.57	29.50	28.43	27.36	26.30	25.23	24.16
25	0	33000	85000	255.44	42		33.91	32.84	31.77	30.70	29.63	28.56	27.49	26.42	25.35	24.28
26	0	33200	85000	256.60	42		33.98	32.90	31.82	30.75	29.69	28.60	27.52	26.45	25.37	24.29
27	0	33400	85000	256.09	42		34.17	33.09	32.02	30.95	29.87	28.80	27.73	26.65	25.58	24.51
28	0	33600	85000	256.20	42		34.19	33.10	32.03	30.96	29.88	28.81	27.74	26.66	25.59	24.51
29	0	33800	85000	256.87	42		34.18	33.10	32.02	30.95	29.87	28.80	27.72	26.64	25.57	24.49
30	0	34000	85000	257.63	42		34.20	33.12	32.04	30.96	29.89	28.80	27.72	26.64	25.56	24.48
31	0	34000	85000	257.63	41	# RPT	34.20	33.12	32.04	30.96	29.89	28.81	27.73	26.65	25.57	24.49
32	0	34200	85000	259.91	41		34.21	33.12	32.03	30.95	29.86	28.77	27.68	26.59	25.50	24.41
33	0	34400	85000	260.76	41		34.27	33.18	32.08	30.99	29.90	28.81	27.71	26.62	25.53	24.43
34	0	34600	85000	261.88	41		34.29	33.19	32.09	31.00	29.90	28.80	27.70	26.61	25.51	24.41
35	0	34800	85000	263.79	41		33.93	32.82	31.72	30.61	29.51	28.40	27.30	26.19	25.09	23.98
36	0	35000	85000	266.28	41		33.34	32.23	31.11	29.99	28.88	27.76	26.65	25.53	24.41	23.30
37	0	35200	85000	269.35	41		32.52	31.39	30.26	29.13	28.00	26.87	25.74	24.61	23.49	22.36
38	0	35400	85000	266.42	41		31.46	30.34	29.43	28.31	27.19	26.08	24.96	23.85	22.73	21.61
39	0	35600	85000	263.07	41		31.19	30.09	28.99	27.89	26.78	25.68	24.58	23.48	22.37	21.27
40	0	35800	85000	263.26	41		31.06	29.95	28.85	27.75	26.64	25.54	24.44	23.33	22.23	21.13
41	0	36000	85000	267.13	41		31.03	29.91	28.79	27.67	26.56	25.44	24.32	23.20	22.08	20.96
42	0	36200	85000	268.58	41		31.03	29.90	28.78	27.65	26.52	25.40	24.28	23.15	22.02	20.90
43	0	36400	85000	268.12	41		31.07	29.95	28.83	27.70	26.58	25.45	24.33	23.21	22.08	20.96
44	0	36600	85000	270.24	41		31.10	30.00	28.91	27.78	26.64	25.51	24.37	23.24	22.10	20.97
45	0	36800	85000	270.01	41		31.14	30.01	28.88	27.75	26.62	25.48	24.35	23.22	22.09	20.96
46	0	37000	85000	270.47	41		30.99	29.85	28.72	27.58	26.45	25.32	24.18	23.05	21.92	20.78
47	0	37200	85000	269.63	41		30.77	29.60	28.47	27.34	26.21	25.08	23.95	22.82	21.69	20.56
48	0	37400	85000	270.30	41		30.48	29.32	28.22	27.08	25.95	24.82	23.68	22.55	21.42	20.29
49	0	37600	85000	272.02	41		30.16	29.02	27.87	26.73	25.58	24.44	23.30	22.17	21.01	19.86
50	0	37800	85000	275.86	41		29.78	28.64	27.50	26.43	25.27	24.12	22.96	21.80	20.65	19.49

91	0	38000	85000	276.54	41		29.65	28.49	27.33	26.17	25.01	23.86	22.70	21.54	20.38	19.22
92	0	38000	85000	276.54	40	* RPT	29.65	28.49	27.33	26.17	25.01	23.85	22.69	21.54	20.38	19.22
93	0	38200	85000	272.71	40		29.35	28.22	27.08	25.93	24.79	23.65	22.50	21.36	20.22	19.08
94	0	38400	85000	271.44	40		29.17	28.02	26.89	25.76	24.62	23.48	22.34	21.21	20.07	18.93
95	0	38600	85000	271.44	40		28.83	27.74	26.60	25.46	24.33	23.19	22.05	20.91	19.78	18.64
96	0	38800	85000	270.83	40		28.66	27.52	26.39	25.25	24.12	22.98	21.85	20.71	19.58	18.44
97	0	39000	85000	273.04	40		28.43	27.28	26.14	24.99	23.84	22.69	21.55	20.40	19.25	18.10
98	0	39200	85000	276.90	40		28.26	27.10	25.94	24.78	23.62	22.46	21.30	20.13	18.97	17.81
99	0	39400	85000	280.32	40		28.11	26.93	25.76	24.58	23.41	22.23	21.06	19.89	18.71	17.54
100	0	39600	85000	280.36	40		27.99	26.81	25.64	24.46	23.29	22.11	20.94	19.76	18.59	17.41
101	0	39800	85000	277.71	40		27.89	26.64	25.48	24.31	23.15	21.98	20.82	19.66	18.49	17.33
102	0	40000	85000	276.38	40		27.65	26.49	25.33	24.17	23.01	21.85	20.70	19.54	18.38	17.22
103	0	40200	85000	275.65	40		27.48	26.32	25.17	24.01	22.86	21.70	20.55	19.39	18.24	17.08
104	0	40400	85000	274.89	40		27.29	26.14	24.98	23.83	22.68	21.53	20.38	19.22	18.07	16.92
105	0	40600	85000	274.20	40		27.09	25.94	24.79	23.64	22.49	21.34	20.19	19.04	17.89	16.74
106	0	40800	85000	274.03	40		26.94	25.79	24.64	23.49	22.34	21.20	20.05	18.90	17.75	16.60
107	0	41000	85000	272.51	40		26.69	25.54	24.40	23.26	22.12	20.98	19.83	18.69	17.55	16.41
108	0	41200	85000	271.61	40		26.47	25.33	24.19	23.05	21.91	20.78	19.64	18.50	17.36	16.22
109	0	41400	85000	270.72	40		26.21	25.07	23.94	22.81	21.67	20.54	19.40	18.27	17.13	16.00
110	0	41600	85000	274.00	40		25.96	24.81	23.66	22.51	21.36	20.21	19.07	17.92	16.77	15.62
111	0	41000	85000	276.90	40		25.60	24.52	23.36	22.20	21.04	19.88	18.72	17.56	16.40	15.24
112	0	42000	85000	277.08	36		25.30	24.21	23.05	21.88	20.72	19.55	18.39	17.23	16.06	14.70
113	0	42000	85000	277.80	40	* RPT	25.37	24.21	23.04	21.88	20.71	19.55	18.39	17.22	16.06	14.89
114	0	42200	85000	274.97	36		25.07	23.92	22.77	21.62	20.46	19.31	18.16	17.01	15.85	14.70
115	0	42400	85000	276.03	36		24.85	23.69	22.53	21.38	20.22	19.06	17.90	16.75	15.59	14.43
116	0	42600	85000	276.64	36		24.66	23.50	22.34	21.18	20.02	18.86	17.70	16.54	15.38	14.22
117	0	42000	85000	277.55	36		24.46	23.30	22.14	20.97	19.81	18.65	17.48	16.32	15.16	13.99
118	0	43000	85000	279.81	36		24.27	23.10	21.93	20.76	19.58	18.41	17.24	16.06	14.89	13.72
119	0	43200	85000	280.98	36		24.17	23.00	21.82	20.64	19.46	18.28	17.11	15.93	14.75	13.57
120	0	43400	85000	282.11	36		24.11	22.93	21.75	20.57	19.38	18.20	17.02	15.84	14.65	13.47
121	0	43600	85000	283.49	36		24.07	22.89	21.69	20.51	19.32	18.13	16.94	15.75	14.57	13.38
122	0	43800	85000	284.11	36		24.00	22.81	21.62	20.43	19.24	18.05	16.86	15.67	14.48	13.29
123	0	44000	85000	285.57	36		23.91	22.71	21.51	20.32	19.12	17.92	16.73	15.53	14.33	13.14
124	0	44200	85000	286.65	36		23.83	22.63	21.43	20.22	19.02	17.82	16.62	15.42	14.22	13.02
125	0	44400	85000	285.15	36		23.83	22.64	21.44	20.25	19.05	17.86	16.66	15.47	14.27	13.08
126	0	44600	85000	279.19	36		23.98	22.73	21.56	20.39	19.22	18.05	16.88	15.71	14.54	13.37
127	0	44800	85000	279.22	36		23.98	22.81	21.64	20.47	19.30	18.13	16.96	15.79	14.62	13.45
128	0	45000	85000	277.54	36		23.94	22.87	21.71	20.55	19.38	18.22	17.06	15.89	14.73	13.57
129	0	45200	85000	275.59	36		24.00	22.73	21.77	20.62	19.46	18.31	17.15	16.00	14.84	13.69
130	0	45400	85000	275.55	36		24.26	23.10	21.95	20.79	19.64	18.48	17.33	16.17	15.02	13.86
131	0	45600	85000	275.42	36		24.36	23.20	22.05	20.90	19.74	18.59	17.43	16.28	15.12	13.99
132	0	45800	85000	273.89	36		24.56	23.41	22.26	21.11	19.96	18.82	17.67	16.52	15.37	14.23
133	0	46000	85000	272.57	35		24.68	23.54	22.40	21.26	20.11	18.97	17.83	16.69	15.54	14.40
134	0	46000	85000	272.57	36	* RPT	24.68	23.54	22.40	21.26	20.11	18.97	17.83	16.69	15.55	14.40
135	0	46200	85000	274.99	35		24.99	23.74	22.58	21.43	20.28	19.13	17.97	16.82	15.67	14.52
136	0	46400	85000	276.79	35		25.12	23.96	22.80	21.64	20.48	19.32	18.16	17.00	15.84	14.68
137	0	46600	85000	277.58	35		25.28	24.12	22.96	21.79	20.63	19.47	18.30	17.14	15.98	14.81
138	0	46800	85000	277.06	35		25.50	24.42	23.26	22.10	20.94	19.78	18.61	17.45	16.29	15.13
139	0	47000	85000	275.93	35		25.57	24.41	23.25	22.10	20.94	19.78	18.63	17.47	16.31	15.16
140	0	47200	85000	274.44	35		25.70	24.63	23.48	22.33	21.18	20.03	18.88	17.72	16.58	15.43
141	0	47400	85000	270.86	35		26.00	24.86	23.73	22.59	21.46	20.32	19.19	18.05	16.92	15.78
142	0	47600	85000	266.69	35		26.10	24.98	23.87	22.75	21.63	20.51	19.40	18.28	17.16	16.04
143	0	47800	85000	268.61	35		26.45	25.33	24.20	23.00	21.75	20.83	19.70	18.57	17.45	16.32
144	0	48000	85000	271.49	35		26.66	25.52	24.38	23.24	22.11	20.97	19.83	18.69	17.55	16.42
145	0	48200	85000	270.66	35		26.76	25.63	24.70	23.56	22.43	21.29	20.16	19.02	17.89	16.75
146	0	48400	85000	269.86	35		27.15	26.02	24.88	23.75	22.62	21.49	20.36	19.23	18.10	16.97
147	0	48600	85000	267.91	35		27.47	26.25	25.13	24.01	22.88	21.76	20.64	19.51	18.39	17.29
148	0	48800	85000	267.28	35		27.50	26.38	25.26	24.14	23.02	21.90	20.78	19.66	18.54	17.42
149	0	49000	85000	267.47	35		27.50	26.38	25.26	24.14	23.02	21.90	20.78	19.66	18.54	17.42
150	0	49200	85000	268.01	35		27.48	26.36	25.24	24.11	22.99	21.87	20.75	19.62	18.50	17.38
151	0	49400	85000	270.76	35		27.42	26.35	25.22	24.08	22.95	21.81	20.68	19.54	18.41	17.27
152	0	49600	85000	273.43	35		27.30	26.23	25.09	23.94	22.79	21.65	20.50	19.36	18.21	17.06
153	0	49000	85000	274.40	35		27.41	26.26	25.11	23.96	22.81	21.66	20.51	19.36	18.21	17.06
154	0	50000	85000	282.35	0		27.37	26.19	25.00	23.82	22.64	21.45	20.27	19.09	17.90	16.72
155	0	50000	85000	282.35	0	* RPT	27.30	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73
156	0	50000	85000	282.35	24	* RPT	27.30	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73

117	0	50000	85000	282.35	25	* RPT	27.38	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73	
118	0	50000	85000	282.35	25	* RPT	27.38	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73	
119	0	50000	85000	282.35	25	* RPT	27.38	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73	
120	0	50200	85000	281.44	26		27.30	26.20	25.02	23.84	22.66	21.48	20.30	19.12	17.94	16.76	
121	0	50400	85000	283.89	26		27.33	26.14	24.95	23.76	22.57	21.38	20.19	19.00	17.81	16.62	
122	0	50600	85000	280.49	26		27.40	26.21	25.05	23.88	22.70	21.53	20.35	19.17	18.00	16.82	
123	0	50800	85000	280.29	26		27.31	26.14	24.96	23.79	22.61	21.44	20.26	19.09	17.91	16.74	
124	0	51000	85000	284.10	26		27.30	26.11	24.92	23.73	22.54	21.35	20.16	18.99	17.78	16.59	
125	0	51200	85000	282.60	26		27.22	26.03	24.85	23.67	22.48	21.30	20.11	18.93	17.74	16.56	
126	0	51400	85000	276.07	26		27.18	26.02	24.86	23.70	22.54	21.38	20.22	19.06	17.90	16.74	
127	0	51600	85000	278.40	26		27.10	26.01	24.84	23.68	22.51	21.34	20.18	19.01	17.84	16.67	
128	0	51800	85000	277.67	26		27.13	25.96	24.80	23.64	22.47	21.31	20.15	18.98	17.82	16.65	
129	0	52000	85000	279.45	26		27.14	25.96	24.79	23.62	22.45	21.28	20.11	18.94	17.77	16.59	
130	0	52200	85000	283.32	26		27.16	25.97	24.78	23.59	22.41	21.22	20.03	18.84	17.66	16.47	
131	0	52400	85000	289.03	26		27.10	25.89	24.68	23.47	22.26	21.05	19.83	18.62	17.41	16.20	
132	0	52600	85000	285.82	26		27.17	25.97	24.77	23.57	22.38	21.18	19.98	18.78	17.58	16.39	
133	0	52800	85000	284.88	26		27.00	25.80	24.61	23.41	22.22	21.03	19.83	18.64	17.44	16.25	
134	0	53000	85000	284.67	26		26.90	25.71	24.52	23.32	22.13	20.94	19.74	18.55	17.36	16.17	
135	0	53200	85000	274.40	26		26.73	25.58	24.43	23.20	22.12	20.98	19.83	18.68	17.53	16.38	
136	0	53400	85000	271.40	26		26.67	25.53	24.39	23.25	22.12	20.98	19.84	18.70	17.57	16.43	
137	0	53600	85000	267.81	26		26.50	25.38	24.26	23.13	22.01	20.89	19.77	18.65	17.52	16.40	
138	0	53800	85000	269.13	26		26.44	25.31	24.19	23.06	21.93	20.80	19.68	18.55	17.42	16.29	
139	0	54000	85000	268.49	26		26.42	25.30	24.17	23.05	21.92	20.79	19.67	18.54	17.42	16.29	
140	0	54000	85000	268.49	27	* RPT	26.42	25.29	24.17	23.04	21.92	20.79	19.67	18.54	17.42	16.29	
141	0	54200	85000	267.60	27		26.42	25.35	24.22	23.10	21.98	20.86	19.74	18.62	17.50	16.37	
142	0	54400	85000	268.75	27		26.34	25.40	24.28	23.15	22.02	20.90	19.77	18.64	17.52	16.39	
143	0	54600	85000	270.01	27		26.50	25.44	24.31	23.18	22.05	20.92	19.79	18.65	17.52	16.39	
144	0	54800	85000	267.23	27		26.59	25.47	24.35	23.23	22.11	20.99	19.87	18.75	17.63	16.51	
145	0	55000	85000	264.73	27		26.66	25.55	24.44	23.33	22.22	21.11	20.00	18.89	17.78	16.67	
146	0	55200	85000	265.71	27		26.70	25.59	24.47	23.36	22.24	21.13	20.02	18.90	17.79	16.68	
147	0	55400	85000	262.69	27		26.63	25.73	24.63	23.53	22.43	21.33	20.23	19.13	18.03	16.92	
148	0	55600	85000	263.50	27		26.75	25.83	24.72	23.62	22.51	21.41	20.30	19.20	18.10	16.99	
149	0	55800	85000	264.57	27		27.07	25.99	24.88	23.77	22.66	21.55	20.44	19.33	18.22	17.12	
150	0	56000	85000	265.95	27		27.21	26.10	24.99	23.88	22.77	21.66	20.55	19.44	18.33	17.21	
151	0	56200	85000	262.22	27		27.30	26.30	25.20	24.10	23.00	21.90	20.80	19.70	18.60	17.50	
152	0	56400	85000	264.73	27		27.48	26.37	25.26	24.15	23.04	21.93	20.82	19.71	18.60	17.50	
153	0	56600	85000	264.36	27		27.69	26.58	25.48	24.37	23.26	22.15	21.04	19.94	18.83	17.72	
154	0	56800	85000	260.49	27		27.85	26.73	25.60	24.48	23.35	22.23	21.10	19.98	18.85	17.73	
155	0	57000	85000	266.72	27		27.94	26.82	25.70	24.59	23.47	22.35	21.23	20.12	19.00	17.88	
156	0	57200	85000	262.56	27		28.10	27.00	25.90	24.80	23.70	22.60	21.50	20.40	19.30	18.20	
157	0	57400	85000	260.77	27		28.31	27.21	26.12	25.03	23.94	22.84	21.75	20.56	19.56	18.47	
158	0	57600	85000	264.18	27		28.48	27.36	26.19	25.08	23.98	22.87	21.76	20.66	19.55	18.44	
159	0	57800	85000	264.70	27		28.43	27.52	26.41	25.30	24.19	23.08	21.97	20.86	19.75	18.65	
160	0	58000	85000	260.71	27		28.71	27.62	26.53	25.44	24.34	23.25	22.16	21.06	19.97	18.88	
161	0	58000	85000	260.71	29	* RPT	28.72	27.63	26.53	25.44	24.35	23.26	22.16	21.07	19.98	18.88	
162	0	58200	85000	260.59	29		28.81	27.72	26.62	25.53	24.44	23.35	22.26	21.16	20.07	18.98	
163	0	58400	85000	260.33	29		28.97	27.90	26.80	25.71	24.62	23.53	22.44	21.35	20.26	19.17	
164	0	58600	85000	262.59	29		29.11	28.01	26.91	25.81	24.70	23.60	22.50	21.40	20.30	19.20	
165	0	58800	85000	262.35	29		29.10	28.00	26.90	25.80	24.70	23.60	22.50	21.40	20.30	19.20	
166	0	59000	85000	259.13	29		29.17	28.00	27.00	25.91	24.83	23.74	22.65	21.57	20.48	19.40	
167	0	59200	85000	261.81	29		29.21	28.11	27.01	25.92	24.82	23.72	22.62	21.53	20.43	19.33	
168	0	59400	85000	262.17	29		29.28	28.18	27.08	25.98	24.88	23.78	22.69	21.59	20.49	19.39	
169	0	59600	85000	266.72	29		29.32	28.20	27.08	25.96	24.85	23.73	22.61	21.49	20.37	19.26	
170	0	59800	85000	265.19	29		29.40	28.29	27.18	26.07	24.95	23.84	22.73	21.62	20.51	19.40	
171	0	60000	85000	264.16	29		29.43	28.33	27.23	26.12	25.01	23.90	22.80	21.69	20.58	19.48	
172	0	60200	85000	260.44	29		29.51	28.42	27.32	26.23	25.14	24.05	22.96	21.87	20.79	19.68	
173	0	60400	85000	258.02	29		29.55	28.47	27.39	26.31	25.23	24.15	23.07	21.99	20.90	19.82	
174	0	60600	85000	256.78	29		29.66	28.59	27.51	26.43	25.36	24.28	23.20	22.12	21.05	19.98	
175	0	60800	85000	253.27	29		29.74	28.68	27.62	26.56	25.50	24.43	23.39	22.31	21.25	20.19	
176	0	61000	85000	251.66	29		29.83	28.80	27.82	26.76	25.71	24.65	23.60	22.55	21.49	20.44	
177	0	61200	85000	251.49	29		30.05	28.99	27.94	26.88	25.83	24.78	23.72	22.67	21.61	20.56	
178	0	61400	85000	249.91	29		30.19	29.14	28.10	27.05	26.00	24.96	23.91	22.87	21.82	20.78	
179	0	61600	85000	247.55	29		30.32	29.28	28.25	27.21	26.17	25.13	24.10	23.06	22.02	20.98	
180	0	61800	85000	247.37	29		30.47	29.54	28.50	27.46	26.43	25.39	24.35	23.32	22.28	21.24	
181	0	62000	85000	244.88	29		30.71	29.68	28.66	27.63	26.61	25.58	24.55	23.53	22.50	21.47	
182	0	62200	85000	242.69	29		30.91	29.87	28.80	27.86	26.84	25.82	24.81	23.79	22.77	21.76	

193		0	62400	85000	242.05	29		31.03	30.02	29.00	27.99	26.97	25.95	24.95	23.93	22.92	21.90
194		0	62600	85000	242.76	29		31.30	30.28	29.24	28.22	27.21	26.19	25.17	24.15	23.14	22.12
195		0	62800	85000	242.78	29		31.40	30.38	29.36	28.35	27.33	26.31	25.29	24.28	23.26	22.24
196		0	62800	85000	242.78	30	* RPT	31.39	30.38	29.36	28.34	27.33	26.31	25.29	24.27	23.25	22.24
197		0	63000	85000	241.61	30		31.53	30.52	29.50	28.49	27.48	26.47	25.45	24.44	23.43	22.42
198		0	63200	85000	240.12	30		31.62	30.61	29.61	28.60	27.60	26.59	25.58	24.58	23.57	22.56
199		0	63400	85000	239.02	30		31.71	30.70	29.70	28.69	27.69	26.68	25.68	24.68	23.67	22.67
200		0	63700	85000	238.72	30		31.82	30.82	29.82	28.82	27.82	26.82	25.82	24.82	23.82	22.82
201		0	63800	85000	238.55	30		31.83	30.83	29.83	28.84	27.84	26.84	25.84	24.84	23.84	22.84
202		0	64000	85000	238.55	30		32.10	31.10	30.10	29.10	28.10	27.10	26.10	25.10	24.10	23.10
203		0	64200	85000	237.36	30		32.07	31.10	30.10	29.11	28.11	27.12	26.12	25.13	24.13	23.14
204		0	64400	85000	237.56	30		32.12	31.20	30.20	29.20	28.21	27.21	26.22	25.22	24.23	23.23
205		0	64600	85000	238.72	30		32.22	31.22	30.22	29.22	28.22	27.22	26.22	25.22	24.22	23.22
206		0	64800	85000	239.51	30		32.28	31.28	30.28	29.27	28.27	27.26	26.26	25.26	24.25	23.25
207		0	65000	85000	242.49	30		32.37	31.35	30.33	29.32	28.30	27.29	26.27	25.25	24.24	23.22
208		0	65200	85000	244.25	30		32.50	31.48	30.45	29.43	28.41	27.30	26.36	25.33	24.31	23.29
209		0	65400	85000	246.36	30		32.47	31.44	30.41	29.37	28.34	27.31	26.28	25.24	24.21	23.18
210		0	65600	85000	246.12	30		32.62	31.59	30.56	29.53	28.50	27.47	26.43	25.40	24.37	23.34
211		0	65800	85000	246.00	30		32.67	31.64	30.61	29.58	28.55	27.52	26.48	25.45	24.42	23.39
212		0	65800	85000	246.00	31	* RPT	32.67	31.64	30.61	29.58	28.55	27.51	26.48	25.45	24.42	23.39
213		0	66000	85000	246.22	31		32.74	31.71	30.68	29.65	28.62	27.58	26.55	25.52	24.49	23.46
214		0	66200	85000	246.72	31		32.99	31.85	30.82	29.78	28.75	27.72		205	0	66400
85000	247.27		31		33.07	32.03	30.99	29.96	28.92	27.89	26.85	25.81	24.78	23.74			
215		0	66600	85000	245.57	31		33.11	32.08	31.05	30.02	28.99	27.96	26.93	25.90	24.88	23.85
216		0	66800	85000	242.93	31		33.15	32.14	31.12	30.10	29.08	28.06	27.04	26.03	25.01	23.99
217		0	67000	85000	239.83	31		33.21	32.21	31.20	30.20	29.19	28.19	27.18	26.17	25.17	24.16
218		0	67200	85000	239.19	31		33.25	32.24	31.24	30.24	29.24	28.24	27.23	26.23	25.23	24.23
219		0	67400	85000	239.06	31		33.25	32.25	31.25	30.25	29.24	28.24	27.24	26.24	25.24	24.23
220		0	67600	85000	238.51	31		33.31	32.31	31.31	30.31	29.31	28.31	27.31	26.31	25.31	24.31
221		0	67800	85000	238.21	31		33.28	32.28	31.29	30.29	29.29	28.29	27.29	26.29	25.30	24.30
222		0	68000	85000	238.27	31		33.34	32.34	31.34	30.35	29.35	28.35	27.35	26.35	25.35	24.35

Data Computed on 24/12/01

SCINTREX GEOPHYSICS & CO

Job # 15 308

LINE 90000 E

STATION #		GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP #	RMKS	BOUGUER GRAVITY (gms/cc) 1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
1	N	32000	90000	255.78	34		32.14	32.07	30.99	29.92	28.85	27.78	26.71	25.63	24.56	23.49		
2	N	32200	90000	256.70	34		32.98	31.90	30.83	29.75	28.68	27.60	26.52	25.45	24.37	23.30		
3	N	32400	90000	258.50	34		32.82	31.73	30.65	29.57	28.48	27.40	26.32	25.23	24.15	23.07		
4	N	32600	90000	261.03	34		32.72	31.63	30.53	29.44	28.34	27.25	26.16	25.06	23.97	22.87		
5	N	32800	90000	262.50	34		32.67	31.57	30.47	29.37	28.27	27.17	26.07	24.97	23.87	22.77		
6	N	33000	90000	262.56	34		32.58	31.48	30.38	29.28	28.18	27.08	25.98	24.88	23.78	22.68		
7	N	33200	90000	261.37	34		32.59	31.50	30.40	29.30	28.21	27.11	26.02	24.92	23.83	22.73		
8	N	33400	90000	261.76	34		32.57	31.47	30.38	29.28	28.18	27.09	25.99	24.89	23.79	22.70		
9	N	33600	90000	264.67	34		32.47	31.38	30.27	29.16	28.05	26.94	25.83	24.72	23.62	22.51		
10	N	33800	90000	267.49	34		32.43	31.31	30.19	29.07	27.94	26.82	25.70	24.58	23.46	22.34		
11	N	34000	90000	270.39	34		32.22	31.00	29.95	28.82	27.68	26.55	25.42	24.28	23.15	22.02		
12	N	34200	90000	270.11	34		32.05	30.92	29.79	28.65	27.52	26.39	25.26	24.13	22.99	21.86		
13	N	34400	90000	267.37	34		31.83	30.71	29.59	28.47	27.35	26.23	25.11	23.99	22.87	21.75		
14	N	34600	90000	265.73	34		31.90	30.48	29.37	28.25	27.14	26.02	24.91	23.80	22.68	21.57		
15	N	34800	90000	265.68	34		31.41	30.29	29.18	28.07	26.95	25.84	24.73	23.61	22.50	21.39		
16	N	35000	90000	263.37	34		31.23	30.13	29.02	27.92	26.82	25.71	24.61	23.51	22.40	21.30		
17	N	35200	90000	264.31	34		31.10	30.00	28.89	27.78	26.67	25.57	24.46	23.35	22.24	21.13		
18	N	35400	90000	262.60	34		30.99	29.89	28.79	27.69	26.59	25.49	24.39	23.29	22.19	21.09		
19	N	35600	90000	262.41	34		30.94	29.84	28.74	27.64	26.54	25.44	24.34	23.24	22.14	21.04		
20	N	35800	90000	261.36	34		30.90	29.81	28.71	27.62	26.52	25.43	24.33	23.24	22.14	21.04		
21	N	36000	90000	260.09	34		30.90	29.79	28.70	27.61	26.52	25.43	24.34	23.25	22.16	21.07		
22	N	36200	90000	258.41	34		30.86	29.77	28.69	27.61	26.52	25.44	24.36	23.27	22.19	21.11		
23	N	36400	90000	257.07	34		30.80	29.72	28.65	27.57	26.49	25.41	24.34	23.26	22.18	21.10		
24	N	36600	90000	257.10	34		30.58	29.50	28.43	27.35	26.27	25.19	24.12	23.04	21.96	20.88		
25	N	36800	90000	253.61	34		30.40	29.34	28.27	27.21	26.15	25.09	24.02	22.96	21.90	20.83		
26	N	37000	90000	256.00	34		30.21	29.13	28.06	26.99	25.91	24.84	23.77	22.70	21.62	20.55		
27	N	37200	90000	256.54	34		29.86	28.79	27.71	26.64	25.56	24.49	23.41	22.34	21.26	20.19		
28	N	37200	90000	256.54	33	* RPT	29.87	28.80	27.72	26.65	25.57	24.50	23.42	22.35	21.27	20.20		
29	N	37400	90000	257.64	33		29.50	28.42	27.34	26.26	25.18	24.10	23.02	21.94	20.86	19.78		
30	N	37600	90000	259.20	33		29.13	28.05	26.96	25.87	24.79	23.70	22.61	21.53	20.44	19.36		
31	N	37800	90000	261.66	33		28.78	27.69	26.59	25.49	24.40	23.30	22.20	21.11	20.01	18.91		
32	N	38000	90000	265.86	33		28.46	27.35	26.24	25.12	24.01	22.89	21.78	20.67	19.55	18.44		
33	N	38200	90000	267.66	33		28.16	27.04	25.92	24.80	23.68	22.55	21.43	20.31	19.19	18.07		
34	N	38400	90000	269.12	33		27.87	26.75	25.62	24.49	23.36	22.24	21.11	19.98	18.85	17.72		
35	N	38600	90000	270.56	33		27.63	26.50	25.37	24.23	23.10	21.96	20.83	19.70	18.56	17.43		
36	N	38800	90000	269.55	33		27.45	26.32	25.19	24.06	22.93	21.80	20.67	19.54	18.41	17.28		
37	N	39000	90000	267.10	33		27.31	26.19	25.07	23.95	22.83	21.71	20.59	19.47	18.35	17.24		
38	N	39200	90000	263.56	33		27.21	26.10	25.00	23.89	22.79	21.68	20.58	19.48	18.37	17.27		
39	N	39400	90000	262.78	33		27.15	26.05	24.95	23.85	22.75	21.65	20.54	19.44	18.34	17.24		
40	N	39600	90000	261.52	33		27.11	26.02	24.92	23.83	22.73	21.63	20.54	19.44	18.35	17.25		
41	N	39800	90000	260.88	33		27.11	26.01	24.92	23.83	22.73	21.64	20.55	19.45	18.36	17.27		
42	N	40000	90000	262.90	33		27.15	26.05	24.95	23.84	22.74	21.64	20.54	19.44	18.33	17.23		
43	N	40200	90000	263.80	33		27.21	26.11	25.00	23.90	22.79	21.68	20.58	19.47	18.39	17.26		
44	N	40400	90000	265.68	33		27.40	26.29	25.17	24.06	22.95	21.83	20.72	19.61	18.49	17.38		
45	N	40600	90000	268.53	33		27.60	26.48	25.35	24.23	23.10	21.98	20.85	19.73	18.60	17.48		
46	N	40800	90000	267.26	33		27.83	26.71	25.59	24.47	23.35	22.23	21.11	19.99	18.87	17.75		
47	N	41000	90000	264.30	33		28.04	26.94	25.83	24.72	23.61	22.50	21.40	20.29	19.18	18.07		
48	N	41200	90000	261.36	33		28.30	27.20	26.11	25.01	23.90	22.82	21.73	20.63	19.54	18.44		
49	N	41400	90000	260.21	33		28.65	27.56	26.47	25.38	24.29	23.20	22.11	21.02	19.93	18.84		
50	N	41600	90000	259.49	33		29.05	27.96	26.80	25.59	24.50	23.41	22.33	21.24	20.15	19.06		

51	0	41800	90000	261.39	32		29.77	29.12	27.05	25.53	24.04	23.[illegible]	22.65	21.55	20.48	19.56
52	0	42000	90000	260.86	32		29.[illegible]	28.[illegible]	26.20	25.18	25.87	24.[illegible]	23.90	21.81	20.72	19.62
53	0	42200	90000	263.59	33		29.20	28.60	27.49	26.37	25.20	24.18	23.07	21.97	20.86	19.76
54	0	42200	90000	263.59	32	* RPT	29.22	28.61	27.51	26.38	25.30	24.19	23.09	21.98	20.88	19.77
55	0	42400	90000	263.94	32		29.97	28.87	27.76	26.56	25.55	24.44	23.34	22.23	21.12	20.02
56	0	42600	90000	265.16	32		30.18	29.07	27.96	26.75	25.74	24.63	23.52	22.40	21.29	20.18
57	0	42800	90000	267.32	32		30.37	29.25	28.13	27.01	25.89	24.77	23.65	22.53	21.41	20.29
58	0	43000	90000	266.86	32		30.42	29.30	28.18	27.06	25.95	24.83	23.71-	22.59	21.47	20.35
59	0	43200	90000	272.04	32		30.36	29.22	28.08	26.94	25.80	24.66	23.52	22.30	21.24	20.10
60	0	43400	90000	271.74	32		30.33	29.19	28.05	26.91	25.77	24.63	23.49	22.36	21.22	20.08
61	0	43600	90000	273.07	32		30.28	29.11	27.97	26.82	25.68	24.54	23.39	22.25	21.10	19.96
62	0	43800	90000	274.57	32		30.31	29.16	28.00	26.85	25.70	24.55	23.40	22.25	21.10	19.95
63	0	44000	90000	275.67	32		30.32	29.16	28.01	26.85	25.69	24.54	23.38	22.23	21.07	19.92
64	0	44200	90000	277.98	32		30.33	29.16	28.00	26.83	25.67	24.50	23.34	22.17	21.01	19.84
65	0	44400	90000	283.66	32		30.04	28.85	27.66	26.47	25.28	24.10	22.91	21.72	20.53	19.34
66	0	44600	90000	284.99	32		29.73	28.54	27.34	26.15	24.95	23.76	22.56	21.37	20.17	18.98
67	0	44800	90000	285.46	32		29.35	28.15	26.95	25.76	24.56	23.36	22.17	20.97	19.78	18.58
68	0	45000	90000	284.43	32		28.92	27.72	26.53	25.34	24.15	22.95	21.76	20.57	19.38	18.19
69	0	45200	90000	286.28	32		28.50	27.32	26.12	24.92	23.72	22.52	21.32	20.12	18.92	17.72
70	0	45400	90000	289.52	32		28.10	26.89	25.67	24.46	23.25	22.03	20.82	19.61	18.39	17.18
71	0	45600	90000	287.01	32		27.80	26.60	25.40	24.20	22.99	21.77	20.59	19.38	18.18	16.98
72	0	45800	90000	283.91	32		27.66	26.47	25.28	24.09	22.90	21.71	20.52	19.32	18.14	16.95
73	0	46000	90000	282.25	32		27.51	26.32	25.14	23.96	22.76	21.59	20.41	19.23	18.05	16.86
74	0	46200	90000	279.83	32		27.29	26.12	24.94	23.77	22.60	21.42	20.25	19.08	17.91	16.73
75	0	46200	90000	279.03	20	* RPT	27.29	26.12	24.94	23.77	22.60	21.43	20.25	19.06	17.91	16.73
76	0	46400	90000	274.10	20		27.05	25.90	24.75	23.60	22.46	21.31	20.16	19.01	17.86	16.71
77	0	46600	90000	271.96	20		26.77	25.64	24.50	23.36	22.22	21.08	19.94	18.80	17.66	16.52
78	0	46800	90000	271.24	20		26.31	25.27	24.13	22.99	21.85	20.72	19.58	18.44	17.30	16.16
79	0	47000	90000	270.22	20		26.10	24.96	23.83	22.70	21.59	20.43	19.30	18.17	17.04	15.90
80	0	47200	90000	267.80	20		25.83	24.71	23.59	22.47	21.34	20.22	19.10	17.98	16.85	15.72
81	0	47400	90000	267.47	20		25.67	24.55	23.42	22.30	21.10	20.08	18.94	17.82	16.70	15.58
82	0	47600	90000	264.71	20		25.40	24.28	23.17	22.06	20.95	19.84	18.73	17.62	16.51	15.41
83	0	47800	90000	262.31	20		25.07	23.97	22.87	21.77	20.67	19.57	18.48	17.38	16.28	15.19
84	0	48000	90000	259.94	20		24.92	23.82	22.54	21.45	20.36	19.27	18.18	17.09	16.00	14.91
85	0	48200	90000	259.44	20		24.48	23.39	22.30	21.21	20.15	19.04	17.95	16.86	15.78	14.69
86	0	48400	90000	258.30	20		24.21	23.15	22.04	20.96	19.90	18.79	17.71	16.63	15.54	14.46
87	0	48600	90000	260.14	20		24.06	22.99	21.88	20.79	19.78	18.61	17.52	16.43	15.34	14.25
88	0	48800	90000	259.14	20		23.96	22.89	21.76	20.68	19.59	18.51	17.42	16.33	15.25	14.16
89	0	49000	90000	258.80	20		23.91	22.82	21.74	20.65	19.57	18.49	17.40	16.32	15.23	14.15
90	0	49200	90000	258.37	20		23.88	22.80	21.72	20.63	19.55	18.47	17.39	16.30	15.22	14.14
91	0	49400	90000	256.25	20		23.85	22.79	21.70	20.63	19.55	18.48	17.41	16.33	15.26	14.18
92	0	49600	90000	257.56	20		23.87	22.79	21.71	20.63	19.55	18.47	17.40	16.32	15.24	14.16
93	0	49800	90000	257.43	20		23.94	22.86	21.78	20.70	19.62	18.54	17.46	16.38	15.31	14.23
94	0	50000	90000	256.97	20		24.00	23.01	21.94	20.86	19.70	18.71	17.63	16.55	15.40	14.40
95	0	50000	90000	256.97	8	* RPT	24.00	23.01	21.94	20.86	19.70	18.71	17.63	16.55	15.40	14.40
96	0	50000	90000	256.97	8	* RPT	24.10	23.02	21.95	20.87	19.80	18.72	17.64	16.57	15.47	14.41
97	0	50000	90000	256.97	6	* RPT	24.00	23.01	21.94	20.86	19.70	18.71	17.63	16.55	15.40	14.40
98	0	50000	90000	256.97	19	* RPT	24.00	23.01	21.94	20.86	19.70	18.71	17.63	16.55	15.40	14.40
99	0	50000	90000	256.97	9	* RPT	24.10	23.02	21.94	20.86	19.79	18.71	17.63	16.56	15.48	14.40
100	0	50000	90000	256.97	8	* RPT	24.00	23.01	21.94	20.86	19.70	18.70	17.63	16.55	15.47	14.40
101	0	50200	90000	256.71	19		24.15	23.07	21.99	20.92	19.84	18.77	17.69	16.62	15.54	14.45
102	0	50400	90000	256.60	19		24.[illegible]	23.[illegible]	22.12	21.04	19.9[illegible]	18.89	17.82	16.74	15.66	14.59
103	0	50600	90000	258.22	19		24.[illegible]	23.[illegible]	22.38	21.30	20.21	19.13	18.04	16.96	15.89	14.78
104	0	50800	90000	259.40	19		24.[illegible]	23.64	22.55	21.46	20.3[illegible]	19.29	18.20	17.11	16.03	14.94
105	0	51000	90000	260.07	19		24.[illegible]	23.[illegible]	22.67	21.58	20.48	19.39	18.30	17.21	16.11	15.02
106	0	51200	90000	259.93	19		25.[illegible]	23.[illegible]	22.87	21.78	20.67	19.60	18.51	17.42	16.33	15.24
107	0	51400	90000	257.00	19		25.[illegible]	23.[illegible]	22.88	21.80	20.[illegible]	19.[illegible]	18.56	17.48	16.40	15.32
108	0	51600	90000	258.48	19		25.13	24.05	22.96	21.88	20.80	19.71	18.63	17.55	16.46	15.38
109	0	51800	90000	260.41	19		25.[illegible]	24.[illegible]	23.06	21.[illegible]	20.[illegible]	19.[illegible]	18.70	17.61	16.51	15.42
110	0	52000	90000	261.82	19		25.[illegible]	24.[illegible]	23.15	22.[illegible]	20.[illegible]	19.[illegible]	18.77	17.68	16.58	15.49
111	0	52200	90000	261.85	19		25.[illegible]	24.[illegible]	23.[illegible]	22.13	21.03	19.[illegible]	18.[illegible]	17.[illegible]	16.65	15.55
112	0	52400	90000	264.59	19		25.51	24.40	23.29	22.19	21.07	19.96	18.86	17.75	16.64	15.53
113	0	52600	90000	266.02	19		25.[illegible]	24.46	23.[illegible]	22.[illegible]	21.[illegible]	20.[illegible]	18.[illegible]	17.[illegible]	16.[illegible]	15.[illegible]
114	0	52800	90000	267.71	19		25.[illegible]	24.58	23.46	22.34	21.22	20.09	18.97	17.85	16.73	15.61
115	0	53000	90000	265.03	19		25.62	24.50	23.[illegible]	22.35	21.[illegible]	20.13	19.02	17.[illegible]	16.80	15.69
[illegible]	0	53200	90000	265.00	19		25.[illegible]	24.73	23.60	22.51	21.40	20.29	19.18	18.07	16.96	15.85

117	0	53400	90000	263 71			25 96	24 05	23.75	22 54	21 54	[illegible]	19 53	18 22	17 13	16 01
118	0	53600	90000	267 52			26 05	24 93	23 80	22.68	21.56	20 44	19 32	18 20	17 08	15 96
119	0	53800	90000	267 52	19	* RPT	26 04	24 92	23.80	22 68	21.55	20.43	19 31	18 19	17 07	15.95
120	0	54000	90000	268 07	20		26 13	25 01	23 89	22.76	21.63	20 51	19.39	18 25	17 13	16 00
121	0	54200	90000	268 91	20		26 52	25 20	24.00	22.97	21 85	20.73	19.61	18 49	17 37	16.25
122	0	54400	90000	269 32	20		26 56	25 43	24.31	23.18	22 05	20 93	19.80	18.67	17 54	16 42
123	0	54600	90000	270 14	20		26 91	25.50	24.45	23 33	22 20	21.07	19 94	18 81	17 68	16 55
124	0	54800	90000	269 44	20		26 09	25 95	24.62	23 49	22 36	21 22	20 09	18 96	17 83	16 70
125	0	55000	90000	266 31	20		27 02	25 09	24.76	23 63	22.50	21.37	20.24	19 11	17 98	16.85
126	0	55200	90000	264 65	20		27 00	25 96	24.84	23 73	22 61	21 50	20.30	19 26	18 15	17 03
127	0	55400	90000	263 03	20		27 30	26 19	25.08	23 98	22 87	21.76	20.65	19 54	18 43	17 32
128	0	55600	90000	262 04	20		27 48	26 37	25.27	24.16	23 06	21 95	20.85	19 74	18 63	17 53
129	0	55800	90000	263 61	20		27 53	26 53	25.42	24 32	23 22	22.12	21.02	19 92	18.82	17 71
130	0	56000	90000	261 65	20		27 80	26 67	25.59	24 48	23 38	22 28	21.17	20 07	18 96	17 86
131	0	56200	90000	259 55	20		27 96	26 86	25.76	24 67	23.57	22.47	21 38	20 28	19 18	18 09
132	0	56400	90000	258 17	20		28 17	27 06	25.97	24 70	23.82	22.73	21.64	20 55	19 47	18 38
133	0	56600	90000	257 60	20		28 22	27 13	26.05	24 77	23.89	22.81	21.72	20.54	19 56	18 48
134	0	56800	90000	256 55	20		28 48	27 32	26 24	25 16	24.08	23.00	21 92	20 84	19 76	18 68
135	0	57000	90000	255 30	20		28 60	27 52	26 45	25 37	24 30	23.22	22 15	21 07	20 00	18 92
136	0	57200	90000	255 47	20		28 72	27 65	26 58	25 51	24 44	23.37	22 30	21 23	20 16	19 09
137	0	57200	90000	255 47	21	* RPT	28 84	27 79	26.70	25 63	24.56	23.49	22 42	21.35	20 28	19 21
138	0	57400	90000	252 72	21		28 96	27 90	26.84	25 70	24 72	23 66	22 60	21 54	20 48	19 43
139	0	57600	90000	256 96	21		29 00	28 00	26.93	25 85	24 77	23 67	22 62	21 59	20 46	19 39
140	0	57800	90000	252 61	21		29 17	28 11	27 05	25 99	24 93	23 87	22 81	21 76	20 70	19 64
141	0	58000	90000	250 74	21		29 18	28 13	27 08	26 03	24 98	23 93	22 88	21 83	20 78	19 73
142	0	58200	90000	252 07	21		29 29	28 23	27 17	26 12	25 06	24 00	22 95	21 87	20 83	19 78
143	0	58400	90000	251 52	21		29 32	28 34	27 28	26 23	25 17	24 12	23 07	22 01	20 96	19 90
144	0	58600	90000	250 00	21		29 52	28 47	27 42	26 37	25 32	24 20	23 23	22 18	21 13	20 08
145	0	58800	90000	250 26	21		29 52	28 67	27 62	26 57	25 52	24 47	23 42	22 30	21 33	20.28
146	0	59000	90000	248 94	21		29 97	28 83	27 79	26 74	25 70	24 66	23 61	22 57	21 53	20 48
147	0	59200	90000	248 05	21		29 98	28 94	27.90	26 85	25 81	24 77	23 73	22 69	21 65	20.61
148	0	59400	90000	248 08	21		30 19	29 13	28 09	27 05	26 01	24 97	23 93	22 89	21 85	20 81
149	0	59600	90000	249 07	21		30 22	29 25	28 20	27 16	26 11	25 07	24 03	22 98	21 94	20 90
150	0	59800	90000	248 54	21		30 41	29 36	28 32	27 28	26 24	25 20	24 16	23 13	22 07	21 03
151	0	60000	90000	250 08	21		30 48	29 53	28 48	27 43	26 39	25.34	24 29	23 24	22.19	21 14
152	0	60200	90000	250 64	21		30 67	29 62	28.57	27 52	26 47	25 42	24 37	23 32	22 27	21 21
153	0	60400	90000	249 67	21		30 73	29 68	28 63	27 59	26 54	25 50	24 45	23 40	22.36	21 31
154	0	60600	90000	249 90	21		30 88	29 73	28.68	27 63	26.58	25.54	24 49	23.44	22.37	21 35
155	0	60800	90000	250 62	21		30 85	29.09	28.75	27 70	26.65	25 60	24 55	23 50	22 45	21 39
156	0	61000	90000	251 64	21		30 88	29 82	28.77	27 71	26.66	25.61	24 55	23 50	22.44	21.39
157	0	61000	90000	251 64	24	* RPT	30 88	29 82	28.77	27 72	26.66	25 61	24 55	23 50	22.44	21 39
158	0	61200	90000	249 95	24		30 92	29 89	28 82	27 77	26.73	25 68	24 63	23 58	22.54	21 49
159	0	61400	90000	248 35	24		31 02	29 92	28.93	27 89	26.85	25 81	24 77	23 72	22.69	21 65
160	0	61600	90000	246 68	24		31 05	30 01	28.98	27 95	26 91	25 88	24 84	23 81	22.78	21 74
161	0	61800	90000	249 95	24		31 12	30 07	29 02	27 98	26.93	25 88	24 83	23 79	22.74	21 69
162	0	62000	90000	247 18	24		31 24	30 20	29 16	28 12	27 09	26 05	25 01	23 98	22.94	21 90
163	0	62200	90000	245 86	24		31 27	30 24	29 21	28 18	27 15	26 12	25 09	24 06	23.03	21 99
164	0	62400	90000	246 63	24		31 38	30 36	29 33	28 30	27 26	26 23	25 20	24 16	23 13	22 09
165	0	62600	90000	246 40	24		31 47	30 44	29 41	28 37	27 34	26 31	25 27	24 24	23 21	22 18
166	0	62800	90000	247 60	24		31 52	30 40	29 45	28 41	27 37	26 33	25 29	24 26	23 22	22 18
167	0	63000	90000	249 05	24		31 [illegible]	30 55	29 50	28 46	27 42	26 37	25 33	24 30	23 24	22 20
168	0	63200	90000	248 06	24		31 [illegible]	30 60	29 55	28 51	27 47	26 42	25 38	24 34	23 30	22 25
169	0	63400	90000	248 70	24		31 [illegible]	30 70	29 68	28 63	27 59	26 55	25 51	24 46	23 42	22 38
170	0	63600	90000	245 42	24		31 81	30 81	29 78	28 75	27 72	26 69	25 66	24 64	23 61	22 58
171	0	63800	90000	242 91	24		31 [illegible]	30 93	29 90	28 89	27 87	26 86	25 84	24 82	23 81	22 79
172	0	64000	90000	240 08	24		32 01	31 00	29 99	28 [illegible]	27 98	26 98	25 97	24 96	23 [illegible]	22 [illegible]
173	0	64200	90000	238 16	24		32 12	31 14	30 13	29 13	28 14	27 11	26 14	25.14	24.14	23 15
174	0	64400	90000	237 16	24		32 18	31 18	30 19	29 [illegible]	28 [illegible]	27 21	26 21	25 22	24 23	23 23
175	0	64600	90000	236 [illegible]	24		32 [illegible]	31 21	30 32	29 42	28 33	27 34	26 34	25 35	24 36	23 36
176	0	64800	90000	238 32	24		32 [illegible]	31 32	30 39	29 39	28 39	27 39	26 [illegible]	25 [illegible]	24 [illegible]	23 [illegible]
177	0	65000	90000	237 80	24		32 [illegible]	31 50	30 50	29 50	28 51	27 51	26 51	25 52	24 52	23 52
178	0	65200	90000	236 31	24	* RPT	32 51	31 51	30 51	29 52	28 52	27 52	26 52	25 53	24 53	23 53
179	0	65400	90000	235 43	25		32 [illegible]	31 64	30 65	29 66	28 67	27 68	26 69	25 70	24 71	23 72
180	0	65600	90000	234 90	25		32 [illegible]	31 [illegible]	30 [illegible]	29 [illegible]	28 [illegible]	27 [illegible]	26 [illegible]	25 [illegible]	24 [illegible]	23 [illegible]

10[illegible]	0	55000	90000	234.00	25	32.00	31.71	30.92	29.94	28.95	27.97	26.99	26.00	25.02	24.03
10[illegible]	0	66000	90000	236.[illegible]	25	32.[illegible]	31.9[illegible]	30.97	29.97	28.98	27.99	27.00	26.00	25.01	24.02
10[illegible]	0	66299	90000	238.71	25	32.97	31.97	30.97	29.97	28.97	27.97	26.97	25.97	24.97	23.97
10[illegible]	0	66400	70000	237.42	25	33.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	23.99
10[illegible]	0	66600	90000	238.02	25	33.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	24.00
10[illegible]	0	66800	90000	241.12	25	33.13	32.12	31.11	30.10	29.09	28.08	27.07	26.07	25.05	24.04
10[illegible]	0	67000	90000	244.31	25	33.15	32.13	31.10	30.08	29.06	28.03	27.01	25.99	24.96	23.94

Data Computed on: 24/12/01

Job # 15 308

LINE 95000 E.

Pt #	STATION #	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP #	RPTS	BOUGUER GRAVITY (gms/cc) 1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
1	0	36000	95000	250.03	23		27.87	26.82	25.78	24.73	23.68	22.63	21.59	20.54	19.49	18.44
2	0	36200	95000	250.74	23		27.61	26.60	25.55	24.50	23.45	22.40	21.34	20.29	19.24	18.19
3	0	36400	95000	249.01	23		27.41	26.37	25.32	24.28	23.24	22.19	21.15	20.11	19.06	18.02
4	0	36600	95000	249.99	23		27.20	26.15	25.11	24.06	23.01	21.96	20.92	19.87	18.82	17.77
5	0	36800	95000	247.74	23		26.93	25.89	24.86	23.82	22.78	21.74	20.70	19.67	18.63	17.59
6	0	37000	95000	249.61	23		26.67	25.62	24.58	23.53	22.48	21.44	20.39	19.35	18.30	17.25
7	0	37200	95000	251.07	23		26.41	25.36	24.31	23.26	22.20	21.15	20.10	19.04	17.99	16.94
8	0	37400	95000	250.75	23		26.16	25.11	24.06	23.01	21.96	20.90	19.85	18.80	17.75	16.70
9	0	37600	95000	249.84	23		25.89	25.04	24.00	22.95	21.90	20.86	19.81	18.76	17.71	16.67
10	0	37800	95000	250.05	23		26.00	24.76	23.91	22.86	21.81	20.76	19.72	18.67	17.62	16.57
11	0	38000	95000	248.67	23		25.66	24.61	23.57	22.53	21.49	20.44	19.40	18.36	17.32	16.28
12	0	38000	95000	248.67	22	* RPT	25.66	24.61	23.57	22.53	21.49	20.44	19.40	18.36	17.32	16.28
13	0	38200	95000	247.54	22		25.70	24.50	23.55	22.51	21.47	20.43	19.40	18.36	17.32	16.28
14	0	38400	95000	248.53	22		25.61	24.57	23.52	22.48	21.44	20.40	19.36	18.31	17.27	16.23
15	0	38600	95000	249.35	22		25.64	24.60	23.55	22.51	21.46	20.42	19.37	18.33	17.28	16.24
16	0	38800	95000	250.18	22		25.75	24.70	23.66	22.61	21.56	20.51	19.46	18.41	17.37	16.32
17	0	39000	95000	248.20	22		25.99	24.00	23.84	22.00	21.76	20.72	19.68	18.64	17.60	16.56
18	0	39200	95000	250.59	22		26.00	25.02	23.98	22.93	21.88	20.83	19.78	18.73	17.68	16.63
19	0	39400	95000	250.43	22		26.10	25.13	24.09	23.04	21.99	20.94	19.89	18.84	17.79	16.74
20	0	39600	95000	251.14	22		26.20	25.23	24.18	23.13	22.08	21.02	19.97	18.92	17.87	16.81
21	0	39800	95000	249.57	22		26.32	25.20	24.24	23.19	22.15	21.10	20.05	19.01	17.96	16.92
22	0	40000	95000	252.13	22		26.30	25.24	24.19	23.13	22.07	21.02	19.96	18.90	17.85	16.79
23	0	40200	95000	254.49	22		26.20	25.15	24.08	23.02	21.95	20.88	19.82	18.75	17.68	16.62
24	0	40400	95000	257.19	22		26.19	25.02	23.94	22.86	21.79	20.71	19.63	18.56	17.48	16.40
25	0	40600	95000	257.24	22		26.02	24.94	23.86	22.78	21.71	20.63	19.55	18.47	17.39	16.32
26	0	40800	95000	259.95	22		25.74	24.65	23.56	22.47	21.38	20.29	19.20	18.11	17.02	15.93
27	0	41000	95000	261.74	22		25.52	24.42	23.32	22.23	21.13	20.03	18.94	17.84	16.74	15.65
28	0	41200	95000	263.33	22		25.28	24.18	23.07	21.97	20.87	19.76	18.66	17.56	16.45	15.35
29	0	41400	95000	260.04	22		25.12	24.03	22.94	21.84	20.75	19.66	18.56	17.47	16.38	15.28
30	0	41600	95000	265.74	22		24.93	23.83	22.71	21.60	20.49	19.37	18.26	17.15	16.03	14.92
31	0	41800	95000	265.94	22		24.81	23.69	22.58	21.46	20.35	19.23	18.12	17.00	15.89	14.77
32	0	42000	95000	263.05	22		24.66	23.55	22.45	21.34	20.23	19.13	18.02	16.92	15.81	14.71
33	0	42000	95000	263.05	18	* RPT	24.66	23.55	22.45	21.34	20.23	19.13	18.02	16.92	15.81	14.71
34	0	42200	95000	262.82	18		24.46	23.32	22.22	21.12	20.02	18.93	17.83	16.73	15.63	14.53
35	0	42400	95000	263.37	18		24.29	23.19	22.08	20.98	19.88	18.77	17.67	16.57	15.46	14.36
36	0	42600	95000	265.53	18		24.25	23.23	22.12	21.01	19.90	18.78	17.67	16.56	15.44	14.33
37	0	42800	95000	266.61	18		24.22	23.20	22.09	20.97	19.85	18.73	17.62	16.50	15.38	14.26
38	0	43000	95000	267.72	18		24.24	23.20	22.10	21.06	19.96	18.81	17.69	16.57	15.45	14.33
39	0	43200	95000	270.26	18		24.51	23.37	22.24	21.11	19.97	18.84	17.71	16.58	15.44	14.31
40	0	43400	95000	275.29	18		24.64	23.47	22.33	21.18	20.02	18.87	17.72	16.58	15.41	14.26
41	0	43600	95000	277.03	18		24.75	23.59	22.43	21.27	20.11	18.95	17.78	16.62	15.46	14.30
42	0	43800	95000	278.07	18		24.92	23.70	22.64	21.50	20.36	19.22	18.08	16.94	15.80	14.66
43	0	44000	95000	278.25	18		25.14	24.00	22.87	21.74	20.61	19.47	18.34	17.21	16.09	14.94
44	0	44200	95000	279.93	18		25.36	24.22	23.09	21.95	20.82	19.68	18.55	17.41	16.28	15.14
45	0	44400	95000	279.04	18		25.51	24.37	23.24	22.10	20.97	19.83	18.69	17.54	16.42	15.29
46	0	44600	95000	269.20	18		25.64	24.51	23.38	22.26	21.13	20.00	18.87	17.73	16.60	15.47
47	0	44800	95000	269.37	18		25.61	24.47	23.36	22.23	21.10	19.97	18.84	17.71	16.58	15.45
48	0	45000	95000	264.34	18		25.56	24.47	23.34	22.23	21.13	20.02	18.91	17.80	16.69	15.59
49	0	45200	95000	266.17	18		25.43	24.35	23.20	22.09	20.97	19.85	18.74	17.62	16.51	15.39
50	0	45400	95000	260.86	18		25.20	24.09	22.94	21.82	20.69	19.56	18.44	17.31	16.18	15.05

	51	0	45600	95000	269.24	10		24.15	23.00	22.07	21.34	20.41	19.28	18.15	17.03	15.90	14.77		
	52	0	45800	95000	270.42			24.26	23.43	22.50	21.76	20.83	18.70	17.76	16.63	15.50	14.36		
	53	0	46000	95000	271.12	10		24.38	23.07	21.93	20.79	19.66	18.52	17.39	16.25	15.11	13.98		
	54	0	46200	95000	270.13	10		24.05	22.81	21.68	20.55	19.42	18.29	17.15	16.02	14.89	13.76		
	55	0	46400	95000	272.00	10		23.90	22.64	21.50	20.36	19.22	18.08	16.94	15.80	14.66	13.52		
	56	0	46400	95000	272.00	10	* RPT	23.90	22.64	21.50	20.36	19.22	18.08	16.94	15.80	14.66	13.52		
	57	0	46600	95000	270.56	10		23.50	22.47	21.33	20.20	19.05	17.93	16.80	15.66	14.53	13.40		
	58	0	46800	95000	271.16	10		23.30	22.25	21.11	19.97	18.84	17.70	16.56	15.43	14.29	13.15		
	59	0	47000	95000	269.00	10		23.25	22.12	20.99	19.86	18.74	17.61	16.48	15.36	14.23	13.10		
	60	0	47200	95000	267.87	10		23.02	21.90	20.78	19.66	18.54	17.42	16.30	15.18	14.06	12.94		
	61	0	47400	95000	268.18	10		22.81	21.70	20.58	19.48	18.35	17.23	16.12	15.00	13.89	12.77		
	62	0	47600	95000	264.80	10		22.66	21.55	20.44	19.33	18.22	17.11	16.00	14.89	13.78	12.67		
	63	0	47800	95000	267.16	10		22.67	21.56	20.44	19.32	18.20	17.08	15.96	14.84	13.72	12.60		
	64	0	48000	95000	264.37	10		22.52	21.41	20.30	19.20	18.09	16.98	15.87	14.76	13.66	12.55		
	65	0	48200	95000	264.80	10		22.55	21.44	20.33	19.22	18.11	17.00	15.89	14.78	13.67	12.56		
	66	0	48400	95000	266.68	10		22.50	21.40	20.29	19.19	18.08	16.98	15.87	14.76	13.66	12.55		
	67	0	48600	95000	271.41	10		22.55	21.41	20.28	19.14	18.01	16.88	15.75	14.62	13.49	12.36		
	68	0	48800	95000	273.78	10		22.43	21.30	20.18	19.07	17.96	16.85	15.73	14.62	13.51	12.40		
	69	0	49000	95000	273.61	10		22.30	21.18	20.07	18.96	17.85	16.74	15.63	14.52	13.41	12.30		
	70	0	49200	95000	272.07	10		22.23	21.10	19.98	18.87	17.76	16.65	15.54	14.43	13.32	12.21		
	71	0	49400	95000	269.17	10		22.07	21.04	19.91	18.78	17.65	16.52	15.39	14.26	13.13	12.00		
	72	0	49600	95000	267.43	10		21.95	20.91	19.81	18.71	17.61	16.51	15.41	14.32	13.22	12.12		
	73	0	49800	95000	265.42	10		21.83	20.82	19.72	18.62	17.52	16.42	15.32	14.23	13.13	12.03		
	74	0	50000	95000	265.72	0		21.84	20.83	19.73	18.63	17.53	16.43	15.33	14.24	13.14	12.04		
	75	0	50000	95000	265.72	0	* RPT	21.84	20.83	19.73	18.63	17.53	16.43	15.33	14.24	13.14	12.04		
	76	0	50000	95000	265.72	0	* RPT	21.84	20.83	19.73	18.63	17.53	16.43	15.33	14.24	13.14	12.04		
	77	0	50000	95000	265.72	10	* RPT	21.85	20.83	19.73	18.63	17.53	16.43	15.33	14.24	13.14	12.04		
	78	0	50000	95000	265.72	0	* RPT	21.84	20.83	19.73	18.63	17.53	16.43	15.33	14.24	13.14	12.04		
	79	0	50000	95000	265.72	10	* RPT	21.84	20.83	19.73	18.63	17.53	16.43	15.33	14.24	13.14	12.04		
	80	0	50200	95000	265.11	10		21.92	20.87	19.76	18.65	17.53	16.42	15.31	14.20	13.09	11.98		
	81	0	50400	95000	266.82	10		22.01	20.98	19.86	18.73	17.61	16.48	15.36	14.23	13.10	11.98		
	82	0	50600	95000	265.64	10		21.91	20.87	19.76	18.65	17.53	16.42	15.31	14.20	13.09	11.98		
	83	0	50800	95000	266.25	10		21.97	20.93	19.82	18.71	17.59	16.48	15.36	14.25	13.14	12.03		
	84	0	51000	95000	266.18	10		21.96	20.93	19.82	18.71	17.59	16.48	15.36	14.25	13.14	12.03		
	85	0	51200	95000	262.17	10		21.97	20.87	19.77	18.67	17.57	16.47	15.37	14.27	13.18	12.08		
	86	0	51400	95000	262.30	10		21.92	20.82	19.72	18.62	17.52	16.42	15.32	14.22	13.12	12.02		
	87	0	51600	95000	260.54	10		21.97	20.84	19.72	18.61	17.50	16.39	15.28	14.17	13.06	11.95		
	88	0	51800	95000	257.26	10		21.91	20.68	19.55	18.42	17.29	16.16	15.03	13.90	12.77	11.64		
	89	0	52000	95000	256.50	10		21.87	20.70	19.52	18.35	17.17	16.00	14.82	13.65	12.47	11.30		
	90	0	52200	95000	256.19	10		21.86	20.70	19.52	18.34	17.16	15.98	14.80	13.63	12.45	11.28		
	91	0	52400	95000	255.57	10		21.66	20.59	19.42	18.25	17.08	15.91	14.74	13.57	12.40	11.23		
	92	0	52600	95000	254.21	10		21.60	20.51	19.34	18.17	16.99	15.82	14.65	13.48	12.31	11.14		
	93	0	52800	95000	253.46	10		21.51	20.45	19.29	18.12	16.95	15.78	14.61	13.44	12.27	11.10		
	94	0	53000	95000	252.85	10		21.54	20.48	19.31	18.14	16.97	15.80	14.63	13.46	12.29	11.12		
	95	0	53200	95000	251.24	10		21.40	20.35	19.19	18.03	16.87	15.71	14.55	13.39	12.23	11.07		
	96	0	53400	95000	250.86	10		21.39	20.34	19.19	18.03	16.87	15.71	14.55	13.39	12.23	11.07		
	97	0	53600	95000	250.16	10		21.41	20.34	19.19	18.03	16.87	15.71	14.55	13.39	12.23	11.07		
	98	0	53800	95000	249.48	10		21.42	20.36	19.20	18.04	16.88	15.72	14.56	13.40	12.24	11.08		
	99	0	54000	95000	252.67	10		21.42	20.36	19.20	18.04	16.88	15.72	14.56	13.40	12.24	11.08		
	100	0	54000	95000	252.67	15	* RPT	21.42	20.36	19.20	18.04	16.88	15.72	14.56	13.40	12.24	11.08		
	101	0	54200	95000	253.04	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	102	0	54400	95000	252.55	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	103	0	54600	95000	253.53	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	104	0	54800	95000	254.83	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	105	0	55000	95000	255.61	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	106	0	55200	95000	255.11	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	107	0	55400	95000	255.93	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	108	0	55600	95000	260.20	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	109	0	55800	95000	262.20	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	110	0	56000	95000	264.08	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	111	0	56200	95000	260.76	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	112	0	56400	95000	265.43	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	113	0	56600	95000	267.93	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	114	0	56800	95000	265.42	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	115	0	57000	95000	266.68	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		
	116	0	57200	95000	260.40	15		21.43	20.37	19.21	18.05	16.89	15.73	14.57	13.41	12.25	11.09		

117	0	57400	95000	259.20	16		35.52	34.14	33.05	31.76	30.80	29.77	28.70	27.62	26.62	25.44
118	0	57800	95000	256.16	16	# PPI	35.02	34.13	33.05	31.76	30.80	29.77	28.70	27.62	26.62	25.44
119	0	58200	95000	253.23	16		35.43	34.36	33.29	32.01	31.14	30.06	28.99	27.92	26.84	25.77
120	0	58600	95000	249.90	16		35.87	34.83	33.59	32.55	31.50	30.45	29.40	28.35	27.30	26.25
121	0	59000	95000	247.18	16		35.92	34.87	33.83	32.78	31.75	30.68	29.64	28.59	27.54	26.49
122	0	59400	95000	250.01	16		36.05	34.99	33.92	32.90	31.83	30.78	29.72	28.67	27.62	26.57
123	0	59800	95000	248.42	16		36.21	35.20	34.16	33.12	32.08	31.04	30.00	28.96	27.91	26.87
124	0	60200	95000	246.86	16		36.36	35.42	34.37	33.33	32.29	31.25	30.21	29.17	28.13	27.09
125	0	60600	95000	245.33	16		36.52	35.57	34.53	33.49	32.46	31.40	30.36	29.32	28.27	27.23
126	0	61000	95000	243.82	16		36.68	35.73	34.68	33.65	32.62	31.57	30.52	29.48	28.43	27.38
127	0	61400	95000	242.34	16		36.84	35.89	34.84	33.81	32.78	31.73	30.68	29.63	28.58	27.53
128	0	61800	95000	240.88	16		37.00	36.05	35.00	33.97	32.94	31.89	30.84	29.79	28.74	27.69
129	0	62200	95000	239.45	16		37.16	36.21	35.16	34.13	33.10	32.05	31.00	29.95	28.90	27.85
130	0	62600	95000	238.04	16		37.32	36.37	35.32	34.29	33.26	32.21	31.16	30.11	29.06	28.01
131	0	63000	95000	236.65	16		37.48	36.53	35.48	34.45	33.42	32.37	31.32	30.27	29.22	28.17
132	0	63400	95000	235.28	16		37.64	36.69	35.64	34.61	33.58	32.53	31.48	30.43	29.38	28.33
133	0	63800	95000	233.94	16		37.80	36.85	35.80	34.77	33.74	32.69	31.64	30.59	29.54	28.49
134	0	64200	95000	232.62	16		37.96	37.01	35.96	34.93	33.90	32.85	31.80	30.75	29.70	28.65
135	0	64600	95000	231.32	16		38.12	37.17	36.12	35.09	34.06	33.01	31.96	30.91	29.86	28.81
136	0	65000	95000	230.04	16		38.28	37.33	36.28	35.25	34.22	33.17	32.12	31.07	30.02	28.97

Data Computed on: 24/12/01

Job # 10 308

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LINE 10000 L
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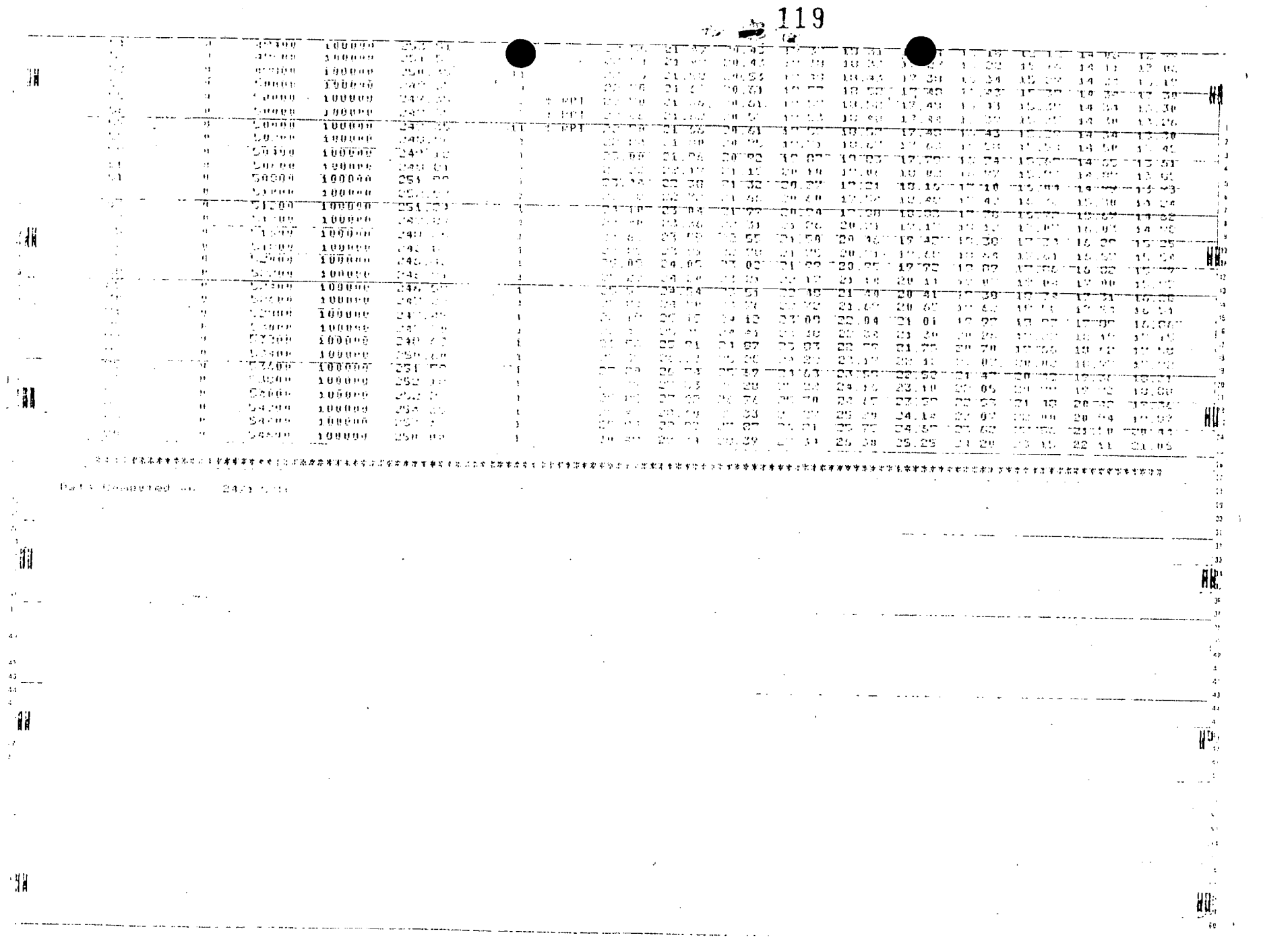
STATION	GRID NORTH	GRID EAST	ELEVATION (Metres)	LOOP	RPTS	BOUGUER GRAVITY (gm/cc) 1.0	1.1	2.0	2.1	2.2	2.3	2.4	2.5	2.6
0	40000	100000	241.39	14		28.98	28.07	27.15	26.24	25.33	24.42	23.51	22.60	21.69
0	40200	100000	240.58	14		27.16	26.25	25.34	24.43	23.52	22.61	21.70	20.79	19.88
0	40400	100000	239.85	14		26.43	25.52	24.61	23.70	22.79	21.88	20.97	20.06	19.15
0	40600	100000	241.05	14		27.63	26.72	25.81	24.90	23.99	23.08	22.17	21.26	20.35
0	40800	100000	240.27	14		27.70	26.79	25.88	24.97	24.06	23.15	22.24	21.33	20.42
0	41000	100000	241.80	14		29.19	28.28	27.37	26.46	25.55	24.64	23.73	22.82	21.91
0	41200	100000	243.42	14		30.71	29.80	28.89	27.98	27.07	26.16	25.25	24.34	23.43
0	41400	100000	241.96	14		29.83	28.92	28.01	27.10	26.19	25.28	24.37	23.46	22.55
0	41600	100000	240.77	14		28.73	27.82	26.91	26.00	25.09	24.18	23.27	22.36	21.45
0	41800	100000	241.24	14		29.30	28.39	27.48	26.57	25.66	24.75	23.84	22.93	22.02
0	42000	100000	243.02	14		31.18	30.27	29.36	28.45	27.54	26.63	25.72	24.81	23.90
0	42200	100000	244.26	14		32.52	31.61	30.70	29.79	28.88	27.97	27.06	26.15	25.24
0	42400	100000	245.01	13	* RPT	33.43	32.52	31.61	30.70	29.79	28.88	27.97	27.06	26.15
0	42600	100000	245.30	13		33.88	32.97	32.06	31.15	30.24	29.33	28.42	27.51	26.60
0	42800	100000	244.90	13		33.76	32.85	31.94	31.03	30.12	29.21	28.30	27.39	26.48
0	43000	100000	245.53	13		34.69	33.78	32.87	31.96	31.05	30.14	29.23	28.32	27.41
0	43200	100000	244.25	13		33.71	32.80	31.89	30.98	30.07	29.16	28.25	27.34	26.43
0	43400	100000	243.72	13		33.48	32.57	31.66	30.75	29.84	28.93	28.02	27.11	26.20
0	43600	100000	244.07	13		34.13	33.22	32.31	31.40	30.49	29.58	28.67	27.76	26.85
0	43800	100000	245.21	13		35.57	34.66	33.75	32.84	31.93	31.02	30.11	29.20	28.29
0	44000	100000	244.76	13		35.51	34.60	33.69	32.78	31.87	30.96	30.05	29.14	28.23
0	44200	100000	246.01	13		36.95	36.04	35.13	34.22	33.31	32.40	31.49	30.58	29.67
0	44400	100000	245.56	13		36.69	35.78	34.87	33.96	33.05	32.14	31.23	30.32	29.41
0	44600	100000	248.43	13		39.78	38.87	37.96	37.05	36.14	35.23	34.32	33.41	32.50
0	44800	100000	249.58	13		41.21	40.30	39.39	38.48	37.57	36.66	35.75	34.84	33.93
0	44900	100000	249.58	12	* RPT	41.91	41.00	40.09	39.18	38.27	37.36	36.45	35.54	34.63
0	45000	100000	249.19	12		41.83	40.92	40.01	39.10	38.19	37.28	36.37	35.46	34.55
0	45200	100000	251.97	12		43.83	42.92	42.01	41.10	40.19	39.28	38.37	37.46	36.55
0	45400	100000	256.61	12		48.47	47.56	46.65	45.74	44.83	43.92	43.01	42.10	41.19
0	45600	100000	255.11	12		47.07	46.16	45.25	44.34	43.43	42.52	41.61	40.70	39.79
0	45800	100000	255.69	12		47.75	46.84	45.93	45.02	44.11	43.20	42.29	41.38	40.47
0	46000	100000	256.87	12		48.93	48.02	47.11	46.20	45.29	44.38	43.47	42.56	41.65
0	46200	100000	257.40	12		49.56	48.65	47.74	46.83	45.92	45.01	44.10	43.19	42.28
0	46400	100000	255.66	12		47.92	47.01	46.10	45.19	44.28	43.37	42.46	41.55	40.64
0	46600	100000	256.23	12		48.59	47.68	46.77	45.86	44.95	44.04	43.13	42.22	41.31
0	46800	100000	254.17	12		46.63	45.72	44.81	43.90	42.99	42.08	41.17	40.26	39.35
0	47000	100000	256.80	12		49.36	48.45	47.54	46.63	45.72	44.81	43.90	42.99	42.08
0	47200	100000	256.15	12		48.81	47.90	46.99	46.08	45.17	44.26	43.35	42.44	41.53
0	47400	100000	255.91	12		48.67	47.76	46.85	45.94	45.03	44.12	43.21	42.30	41.39
0	47600	100000	255.60	12		48.46	47.55	46.64	45.73	44.82	43.91	43.00	42.09	41.18
0	47800	100000	255.48	12		48.44	47.53	46.62	45.71	44.80	43.89	42.98	42.07	41.16
0	47900	100000	255.38	11	* RPT	48.38	47.47	46.56	45.65	44.74	43.83	42.92	42.01	41.10
0	48000	100000	255.30	11		48.31	47.40	46.49	45.58	44.67	43.76	42.85	41.94	41.03
0	48200	100000	255.78	11		48.79	47.88	46.97	46.06	45.15	44.24	43.33	42.42	41.51
0	48400	100000	256.55	11		49.56	48.65	47.74	46.83	45.92	45.01	44.10	43.19	42.28
0	48600	100000	258.93	11		51.94	51.03	50.12	49.21	48.30	47.39	46.48	45.57	44.66
0	48800	100000	257.87	11		50.88	49.97	49.06	48.15	47.24	46.33	45.42	44.51	43.60
0	49000	100000	257.50	11		50.51	49.60	48.69	47.78	46.87	45.96	45.05	44.14	43.23
0	49200	100000	255.19	11		48.20	47.29	46.38	45.47	44.56	43.65	42.74	41.83	40.92



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CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924

SOUTH AUSTRALIA

INTERPRETATION OF GRAVITY SURVEY

AUTHOR: B. FINLAYSON
(CONSULTING GEOPHYSICIST)

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DATE: 24TH FEBRUARY, 1982

SUBMITTED BY:

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CONTENTS

1. SUMMARY

The gravity survey covering the southern half of Wirrangula Hill Exploration Lease has highlighted three gravity zones; two extended positive gravity highs and a broad gravity low. The gravity low has been interpreted as resulting from a series of elongate Permian depressions, with potential for development of Mt. Toondina Coal Measures, separated by narrow basement ridges. Within the gravity low a contour plan of depth to basement has been produced by comparison of gravity and magnetic estimates.

A six hole drilling programme of 1 375 metres has been suggested based on the interpretation.

2. INTRODUCTION

Following an earlier evaluation of the scant available data relevant to the Wirrangula Hill lease area (Finlayson, 1981a), a gravity survey was carried out for CRA Exploration Pty. Limited by Solo Geophysics and Co. in December, 1981. This survey of five 'east' grid lines and one 'north' grid line contained 787 gravity stations spaced 200 metres apart on 'east' line and 500 metres apart on 'north' lines and optically levelled. Due to the long transits to the nearest known benchmark and permanent gravity station an arbitrary topographic level and gravity value were assumed. Positioning of the grid is relative to local landmarks with 'east' lines oriented 033° magnetic. Accuracy of the survey appears good with ties less than 0.05 milligal. Positioning may need to be confirmed relative to lease boundaries particularly as the base reference point (SR-14/2 ? Fig. 1) was not positively identified nor was its true position known, (Appendix I).

Gravity data were made available in the form of raw data, drift corrected observed, theoretical and Bouguer gravity at densities 2.1, 2.4, 2.67 and 2.8 gm/cm^3. Profiles and plots of Bouguer values at a calculated 2.1 gm/cm^3 density were supplied at 1:50 000 and 1:100 000 scale. Interpretation of the gravity data sought to, within the limitations of control, model the thickness of Permian section and suggest:

(a) drillhole sites where Mt. Toondina Coal Measures were most likely to occur and

(b) drillhole sites where a shallow intersection of Mt. Toondina Coal Measures was likely.

The available information (Figs. 1, 1a) limits the interpretation in that:

i. there is no stratigraphic control within the lease area,

ii. aeromagnetic coverage (five kilometres east west lines flown at 460 metres barometric), is of poor quality,

iii. for the present survey, at five kilometre line spacing and 200 metre station spacing correlation of features from line to line is interpreted with some uncertainty,

iv. there are a large number of possible components to the gravity field.

In this interpretation 'basement' and 'cover' are used in the sense of a Pre Permian base to a Permian and Post Permian sequence. Within the lease area the possibilities for basement are:

1. Pre Cambrian crystalline rocks. These occur in shallow boreholes to the south of the lease area (Fig. 1) but are, within the lease area, of unknown extent and density variation.

2. Pre Cambrian sedimentary rocks. These occur in subsurface drillhole intersections to the south east of the lease area on the Stuart Shelf (Fig. 2) where the Adelaidean sequence has a range of densities from 2.50-2.85 gm/cm^3. A regional negative response is normally associated with the thicker portions of this sequence.

3. Cambrian sedimentary rocks. These occur beneath the Boorthanna Trough to the east of the lease area (Fig. 2) and have a range of densities from 2.35-2.85 gm/cm^3 including a thick dolomite section with density 2.7-2.85 gm/cm^3.

3. PROCEDURE

The gravity data was contoured by hand from plots of Bouguer Gravity supplied at a scale of 1:50 000 and calculated at a density of 2.1 gm/cm^3 (Fig. 3). This density was considered appropriate to the Mesozoic cover rocks and thus to minimise topographic variation effects. Regional data from the South Australian State Gravity File (S.A.S.G.F.) were incorporated where possible into the survey data. These points are barometrically levelled and plotted from uncontrolled airphotos. Their fit is only fair and three points were rejected as incorrect. A level adjustment was made to S.A.S.G.F. points

by adding the mean difference between S.A.S.G.F. points and current survey points to each S.A.S.G.F. point. This adjustment is limited in accuracy by the errors of positioning and reading in the two surveys and by errors arising from incorrect extrapolation of values in comparing the two surveys.

For the complete set of points, an attempt was made to separate the potential field data into two components of basement and cover. The regional or basement response chosen was a constant plane of 32 milligals with no gradient. This was arrived at by interpretation of the South Australian Bouguer Gravity Map at $1:10^6$ scale and by the comparison of the survey data with S.A.S.G.F. points as mentioned above. Residual values were calculated for each point by subtracting the reference value from each Bouguer Gravity value. Along each profile then the residual values were modelled using a basin model inversion programme on a Tektronix 4052 computer. These profiles were compared with magnetic depth to basement estimates interpreted for the area (Fig. 4 and Appendix II). The depth estimates were arrived at by enclosing zones of similar frequency response on the 1:250 000 scale aeromagnetic map of Warrina and by calculating depths at two points d, and d_2 (Fig. 1a) by half slope methods to calibrate the zonal division.

Alternative methods of arriving at a regional-residual separation were tried. A first order polynomial fit to the complete set of data was tested as a regional component and the residual which resulted from the subtraction of that surface was modelled and compared as above.

Finally a first order polynomial fit was made to the limited number of data points in the survey which compared with the 200 metre plane of the depth to magnetic basement estimates. The residual which resulted from the subtraction of that surface was again modelled as above.

Both polynomial fit regionals were found to be unsuitable largely because they sampled the area of interest only and the resultant surface produced in each case was distorted by the anomalies which were the subject of this interpretation. The manually selected regional-residual separation was found to give the best overall fit to the aeromagnetic depth to basement sketch (Fig. 4 and Appendix II).

From the profiles of the chosen models and the print output from those models (Appendix III) a contour plan of depth to basement was drawn up (Fig. 5) and drillhole recommendations are based on the profiles and that plan. For each drillhole an approximate three layer model was then used to give an estimate of likely thickness of the lower density Mesozoic and Upper Permian section. This model assumed values of 2.15 gm/cm^3 for the low density layer 2.35 gm/cm^3 for Lower Permian and 2.65 gm/cm^3 for crystalline basement c.f. table 1. These densities have not yet been confirmed in the area and the whole modelling procedure is without adequate con-

trol for the figures produced to be reliable. They should initially be used as a guide only. Samples of material should be measured for density as part of further evaluation following drilling and density logs should be run on completion of each drillhole.

4. INTERPRETATION

Within the Arckaringa Basin gravity depressions are normally associated with thick development of Permian sediments and Mt. Toondina Coal Measures have been outlined within these in places (Finlayson, 1981b). However in those areas overlying sub basins of the ?Cambrian Eastern Officer Basin, this simple model does not necessarily hold. Within the Boorthanna Trough to the east of the lease area (Fig. 2), dense dolomites lie beneath the Permian section and in places these have been uplifted relative to surrounding low density Permian sediments creating a more complex gravity picture. In addition deep basement contrasts may further complicate the picture.

In the Wirrangula Hill Lease area all of these components may be present. The applied separation of the gravity field into regional and residual components is only a partial solution to the problem of separation of basement and cover response and the area can be divided into three zones (Figs. 1, 3 and 5).

A. This broad gravity negative (Figs.1,3 and 5) can be internally divided into a series of elongate highs and lows which are interpreted as Permian depressions separated by basement ridges. Continuity of Permian may occur over the ridges and testing of at least one ridge is recommended by drillhole. The depressions are the optimum sites for development of thicker Permian coal measures. Within this zone the modelling procedure is considered to have the most reliability although the influence of adjacent zones will influence that reliability close to the margins.

B. This zone is a broad gravity positive with a gradient zone marking its southern boundary. It is elongate to the north east and over its extent there is a broad correspondence between depth to magnetic basement and gravity response c.f. Fig. 4. Relatively shallow magnetic basement is inferred on both sides of the gradient zone which bounds the feature and an intracrystalline basement density variation is strongly suggested to account for this anomaly.

C. This zone is a narrow elongate gravity positive oriented south easterly across the northern portion of the survey area. Along this feature magnetic basement depth increases with gravity response and two alternative hypotheses are suggested (Fig. 6).

Hypothesis 1

The gravity ridge is the result of an intrabasement density change. The anomaly corresponds with a magnetic high and on this coincidence Newmont Pty. Ltd. drilled SR/14 to the east of the lease area in the search for Olympic Dam type basement mineralisation. They abandoned that hole at Cadaree Hill at 195 metres in Mt. Toondina Beds when estimates of depth indicated too deep a target. In that hole they intersected possible coal measures from 89 to 129 metres. Collapse of the section occurred and only 1.5 metre of core was recovered from the interval. This hole suggests that a continued increase in Permian thickness conformable with magnetic basement is possible.

Hypothesis 2

The gravity ridge is the result of a development of a ?Cambrian dolomite filled trough. The gravity ridge coincides with a depression in magnetic basement at a point where the gravity anomaly is greatest and a weak depression may extend on strike of the gravity anomaly to the north west. To fit the gravity information some uplift of the dolomites must be present. A similar structural setting is implied at Mt. Toondina to the north of the lease area in the Boorthanna Trough. Such uplift may bring deeply buried coal measures closer to surface as at Mt. Toondina where the type section for the coal measures is found in outcrop. The shallow intersection of coal in SR-14 is compatible with this hypothesis and further testing is suggested.

5. DRILLHOLE RECOMMENDATIONS

Using the profile estimates of depth (Appendix III) suggested drillholes were approximately modelled to obtain an estimate of likely low density Mesozoic Upper Permian sediments. Because of the uncertainty in the overall interpretation, these figures, table 2, should be used as an initial guide only.

Six drillhole positions have been suggested (Figs. 1, 3, 5 and Appendix II).

A. This drillhole is sited to test a gravity depression at 44200N on line 85000E. At this site a depth to basement of 810 metres has been interpreted. From modelling, a 300 metre section of Upper Permian plus Mesozoic can be expected. This site is optimum for the development of coal measures within this 300 metre section.

B. This drillhole is sited to test the main elongate gravity low on line 95000E at 48000N. At this site the total depth to basement is considered to be approximately 850 metres and a 300 metre section of Upper Permian plus Mesozoic is indicated. As the interpretation at this point is subject to the hypothesis accepted for the gravity high to the north of this point, these depths should be used as a guide only.

C. This hole tests the edge of a gravity low indicated by line 80000E at 30200N. A depth of 650 metres is expected for basement with 250 metres of low density sediments. This hole may not be optimal for development of coal within the indicated depression but will indicate the potential of that depression near its margins. Further outlining of this depression may then be warranted at a later stage.

D. This hole is sited over a possible uplifted block on which shallow coal measures may be preserved. The position suggested is on line 90000E at 42800N where 150 metres of low density sediments can be expected over a basement at 250 metres.

E. This hole on line 90000E at 34400N is sited to test a shallow shelving section where basement is expected at 200 metres with 125 metres of low density sediments.

F. This hole is sited on the northern end of line 95000E at 61000N. At this point depth to Permian is unknown. If Cambrian dolomites do occur they will significantly affect the potential field (Table 1). A maximum of 250 metres of low density sediments are expected although this figure should be used as a guide only. The figure is arrived at by modelling a dense (2.8 gm/cm^3) section overlying magnetic basement (2.65 gm/cm^3) and covered by 2.25 gm/cm^3 material. This model implies relative uplift of dolomites and deeply buried coal measures may have been brought to a shallow depth in this locality. SR-14/2 intersected at least 1 metre of coal at a depth of 89 metres with a collapsed section to 129 metres.

TABLE 2 - SUMMARY OF SUGGESTED DRILLHOLES

	Line	Position	Estimated Upper Permian + Mesozoic*	Estimated Basement Depth
a	85 000	44 200N	300	810
b	95 000	48 000N	300	850
c	80 000	30 200N	250	650
d	90 000	42 800N	150	250
e	90 000	34 400N	125	200
f	95 000	61 000N	250	1 500
			1 375m	

* Guide for drilling only

TABLE 1 - DENSITY INFORMATION FROM THE ARCKARINGA BASIN

Tertiary	1.9 - 2.2 gm/cm^3
Cretaceous	2.1
Permian	?
- Upper - Mt. Toondina	2.1 - 2.2
- Lower - Stuart Range	2.3
- Boorthanna	2.4
Cambrian (dolomites)	2.7 - 2.85
Pre Cambrian (sedimentary)	2.60
Pre Cambrian (crystalline)	2.65

KEYWORDS

Warrina SH53-3, Arckaringa Basin, Cambrian, Permian, Cretaceous, Tertiary, Stuart Range Formation, Mt. Toondina Formation, Boorthanna Formation, Coal-black, Geophys-gravity, Geophys-magnetics, Drill-rotary.

LOCATION

Warrina SH53-3 1:250 000

B. FINLAYSON

LIST OF FIGURES

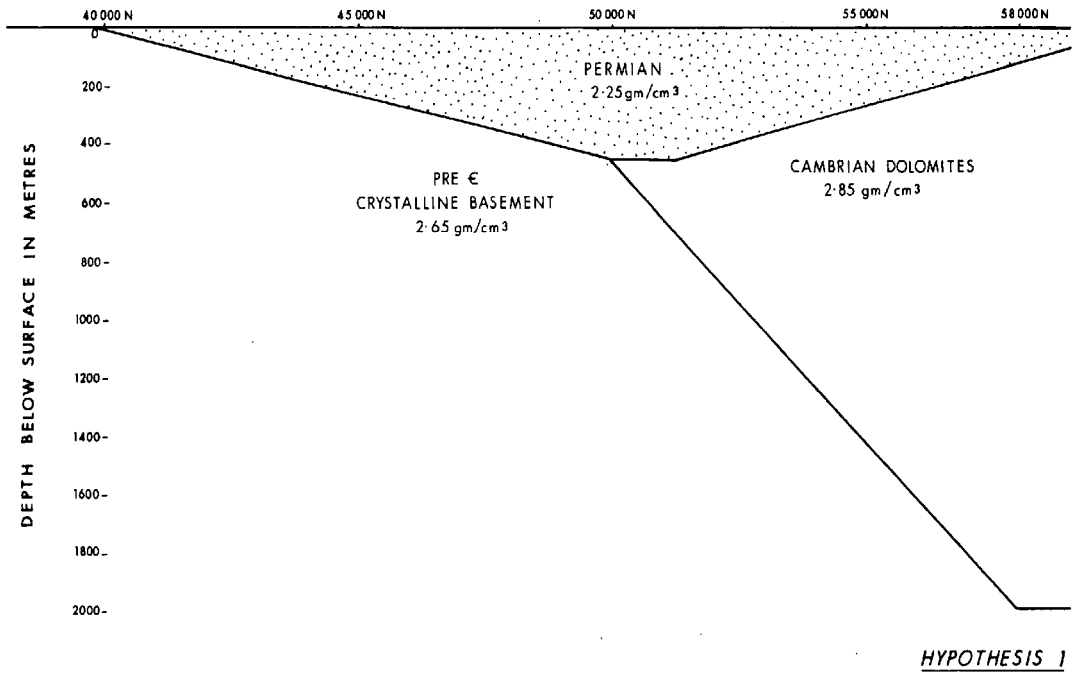
APPENDICES

REFERENCES

Finlayson, B., 1981a Wirrangula Hill E.L.A. 324/81, South Australia. Evaluation of Coal Prospect. CRAE Report 10909

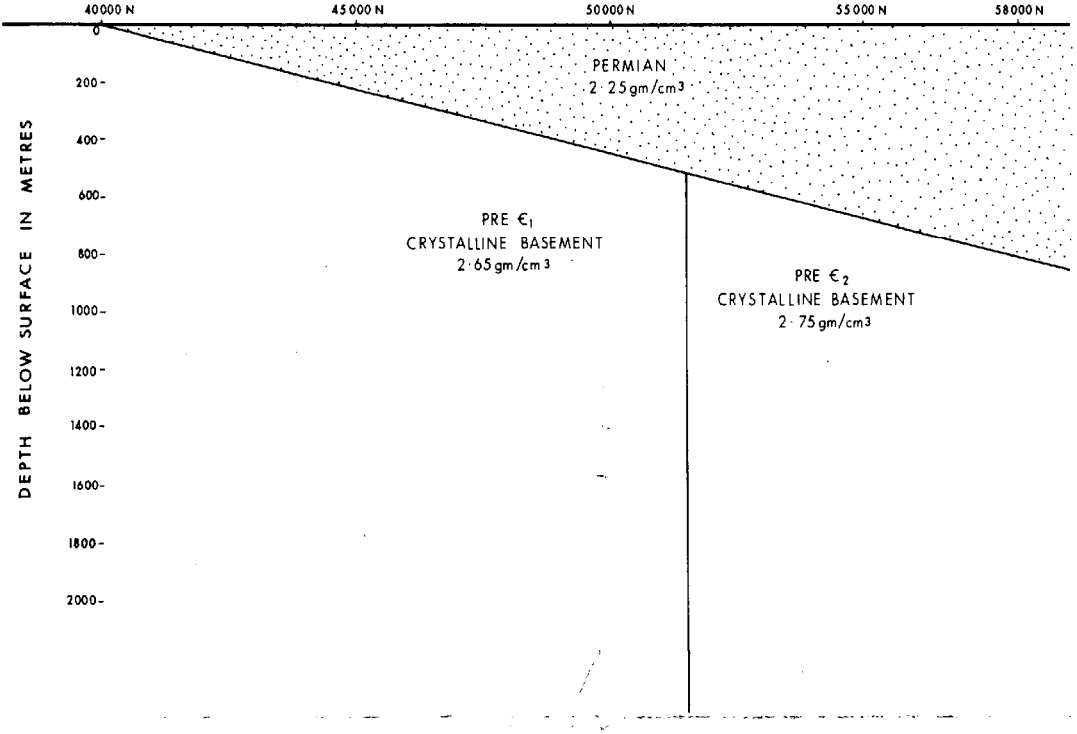
Finlayson, B., 1981b Exploration of the Arckaringa Basin. South Australian Department of Mines and Energy Report Book 81/51. Unpub.

LINE 100000 E



HYPOTHESIS 1

LINE 100000 E



HYPOTHESIS 2

FIG.6

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924

SCHEMATIC SECTION OF ALTERNATIVE MODELS FOR LINE 100000 E

Ref: WARRINA SH53 - 3	
Author: B.F.	**Scale:**
Drawn: S J B	**Report No:** 10909/ 11132
Date: FEBRUARY 1982	**Plan No:** SAa 1340

APPENDIX I

NILPINNA GRAVITY & OPTICAL LEVELLING SURVEY

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CLIENT: CRA EXPLORATION

GRID : NILPINNA

AREA : NORTHERN SOUTH AUSTRALIA

SURVEY: GRAVITY & OPTICAL LEVELLING

DATE : NOVEMBER/DECEMBER 1981

PHASE 1

A COMBINED GRAVITY AND OPTICAL LEVELLING SURVEY - NILPINNA

FOR: CRA EXPLORATION
31 OSMOND TERRACE,
NORWOOD, S.A., 5067

BY: SOLO GEOPHYSICS & CO.
3a McINNES STREET,
RIDLEYTON, S.A., 5008

Mobilising from Bulgunnia and restocking at Coober Pedy the Nilpinna gravity and optical levelling survey commenced 19th. November, 1981. After 25 days and completing 169 kilometres of the 220 line kilometre grid, the four man crew demobilised to Adelaide. The survey party consisted of three SOLO operators (one of which arrived Coober Pedy 23rd. November) and one CRAE field-hand. Access to the grid from Coober Pedy is as follows:

From the Miners Store, travel 7.35 kms north on the Oodnadatta road to the Nilpinna turn-off (not marked), then travel east on the Nilpinna road 79 kms. (accumulated distance from the Miners Store) to Marys Yard. The field crew camped at Marys Yard throughout the duration of the survey after permission was obtained from Jim Nunn, Manager - Nilpinna Station (call sign - 9 Oscar, India). Only the southern portion of the surveyed grid was outside Nilpinna's Pastoral lease, this falling within Crown land (see map).

Access to various parts of the grid was good and included a number of tracks (single-cut with grader) originating from Marys Yard as well as the Coober Pedy road (double-cut with grader). Most tracks have been graded within the past six months while Marys Yard was constructed last year. Fences enclose the grid but can be dropped with considerable ease as per instruction of Jim Nunn.

SURVEY DETAILS:

The grid origin was either Newmont drill-hole SR-14 or BA14/8? (only one could be found). A magnetic bearing was calculated from the proposed CRAE traverses off the Warrina 1:250000 sheet. When applied this bearing aligned exactly with a previous traverse undertaken by SOLO in 1978 for Newmont Pty. Ltd. The base line, designated co-ordinates of 50000N, is 8.2kms from the averaged position of the Newmont drill-holes. Traverses bearing 033 magnetic are positioned every 5 kms along the base-line (see map), with the most easterly designated co-ordinates of 100000E. Steel pickets were sited at the end of each traverse. Located at the intersections of traverses and base-line are three metre lengths of polypipe. Steel spacers and wooden dumpy pegs, marking the site of gravity measurements are alternately sited every 200 metres along the traverses. Distances were measured with a specially calibrated odometer.

Gravity loops were kept to within two hours duration. Five main gravity bases located every 5 kms along the baseline formed the basis of all the further gravity work completed along the traverses. These bases numbering 1 - 4 inclusive and 28 were tied in an A-B-A-B-A manner. The remaining gravity bases were tied in an A-B-A-B manner, in that a drift corrected value taken from the end of a gravity loop was repeated to ensure its accuracy and correct comparison to the initial base (in all 29 bases, checks proved a better than .05 mgal accuracy and most better than .02 mgals). See map for distribution of gravity bases.

Cont..

Base one, 50000N/100000E was given an assumed observed gravity value of 979200, the survey was made arbitary to this point. Drifts encountered throughout the survey were moderate averaging .05 mgals per hour.

Station 54600N/100000E had an assumed elevation of 250 metres. All stations were optically levelled.

The fanfold data contains the original field data in loop format with station co-ordinates, station I.D., instrument reading in scale divisions, time and elevation. Also listed are the observed and theoretical gravity plus Bouguer gravity at 2.1, 2.4, 2.67 and 2.8 gm/cc.

The line files of the various traverses are listed with station I.D., station co-ordinates, elevation, loop number and ten Bouguer densities at 0.1 gm/cc steps over a range from 1.8 to 2.7 gm/cc.

INSTRUMENTATION SUPPLIED FOR THE SURVEY:

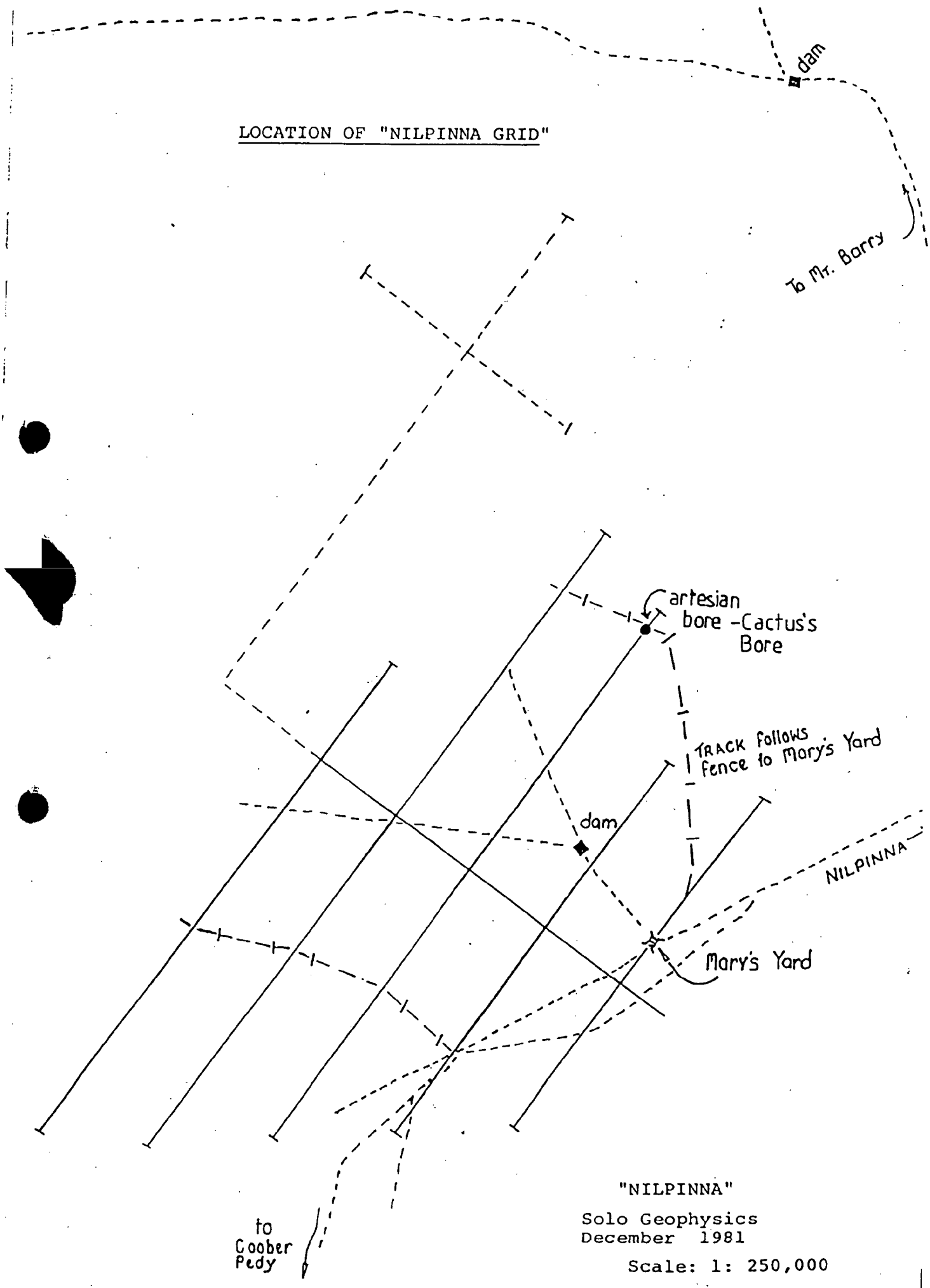
Two LaCoste & Romberg temperature compensated gravimeters G#037 and G#561.
One Pentax and one Sokisha automatic engineers level.
Two five metre staffs.
Two electronic vehicle odometers.
Complete camping gear for four man crew.

INSTRUMENTATION DAMAGED:

One tent completely written off and the second badly damaged.
Gas bottle (bleed valve sheared).
Tripod (level screw sheared).
Two hammers - one lost, the second broken.
One reclining chair.

R. ANNETT - Senior Surveyor - BSc., A.R.S.M., A.I.M.M.

LOCATION OF "NILPINNA GRID"

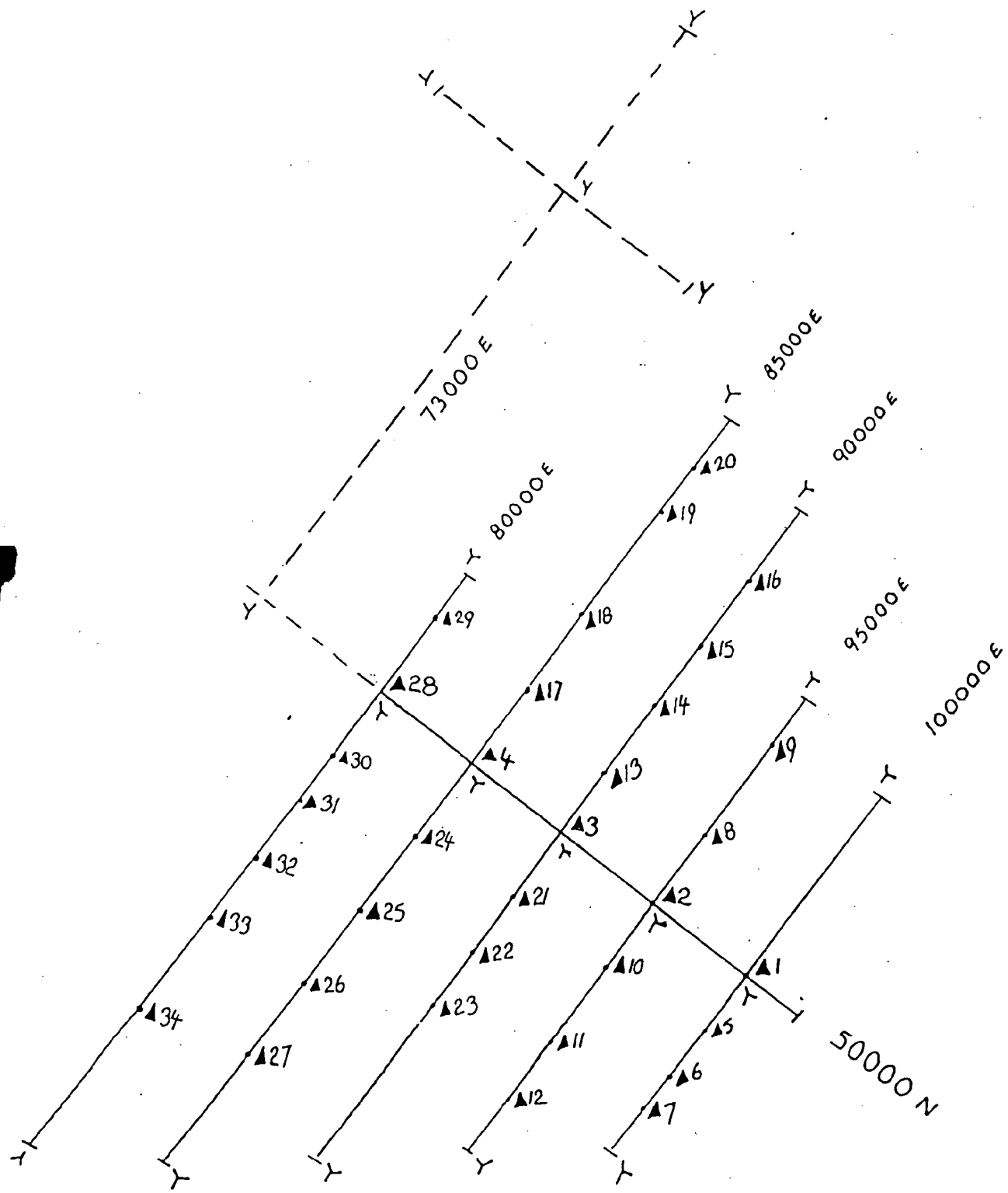


"NILPINNA"

Solo Geophysics
December 1981

Scale: 1: 250,000

LOCATION OF GRAVITY BASE STATIONS



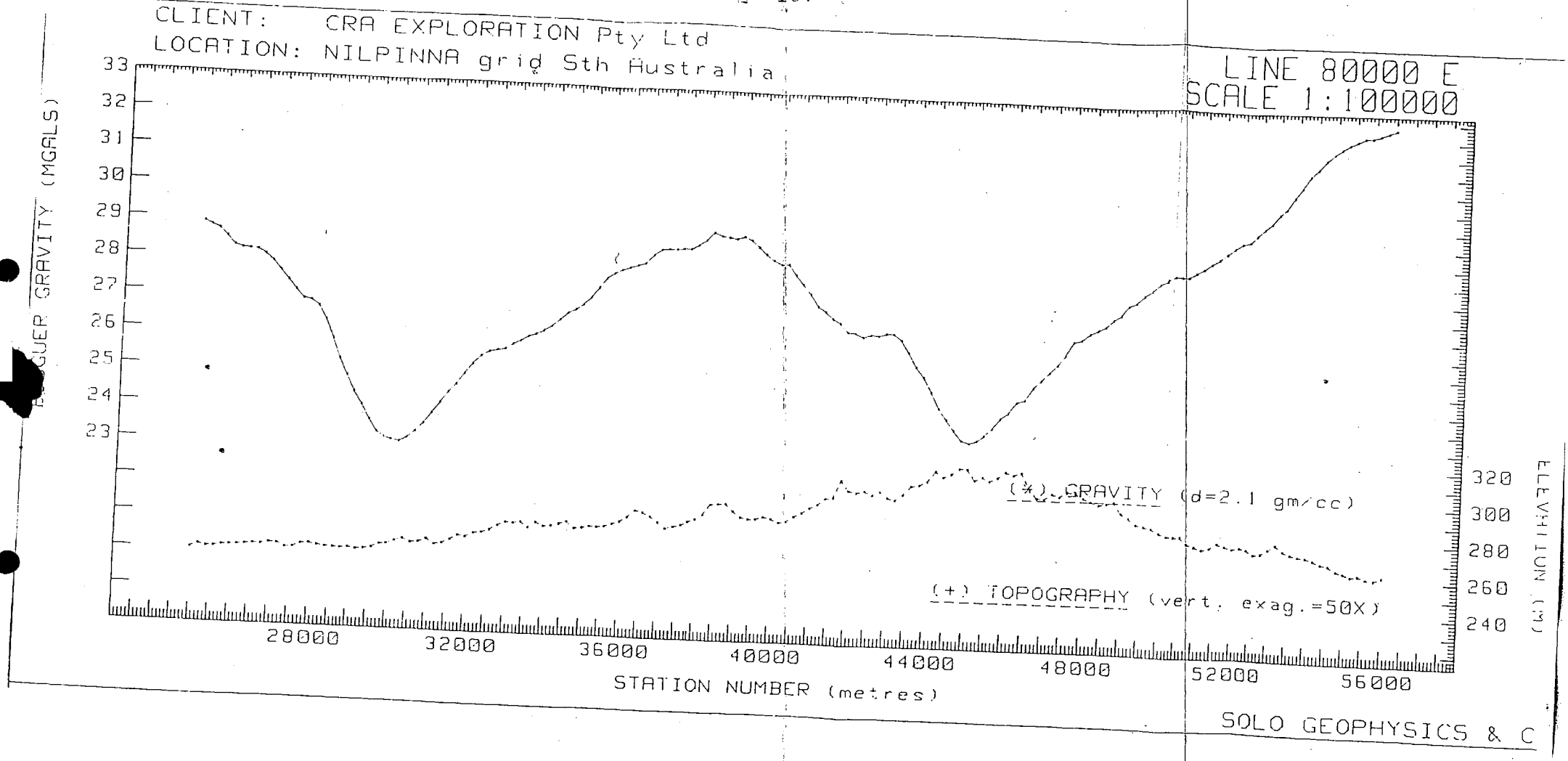
Y Solo Gravity Base Steel Picket

Y 3 metre Polypipe

"NILPINNA"

Solo Geophysics
December 1981

Scale: 1: 250,000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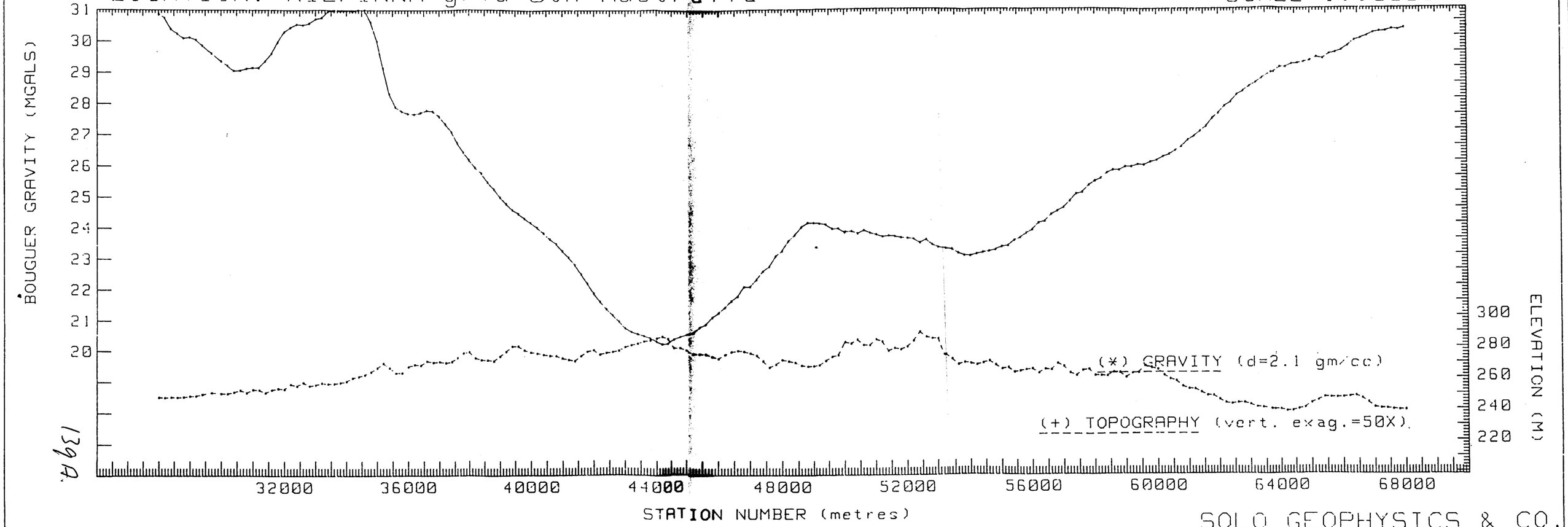
SCALE 1:100000
BOUGUER GRAVITY (MGALS)
33
32
31
30
29
28
27
26
25
24
23
(*) GRAVITY (d=2.1 gm/cc)
(+) TOPOGRAPHY (vert. exag.=50X)
320
300
280
260
240
ELEVATION (M)
28000
32000
36000
40000
44000
48000
52000
56000
STATION NUMBER (metres)
SOLO GEOPHYSICS & C

CLIENT: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

LINE 85000 E

SCALE 1:100000



1391

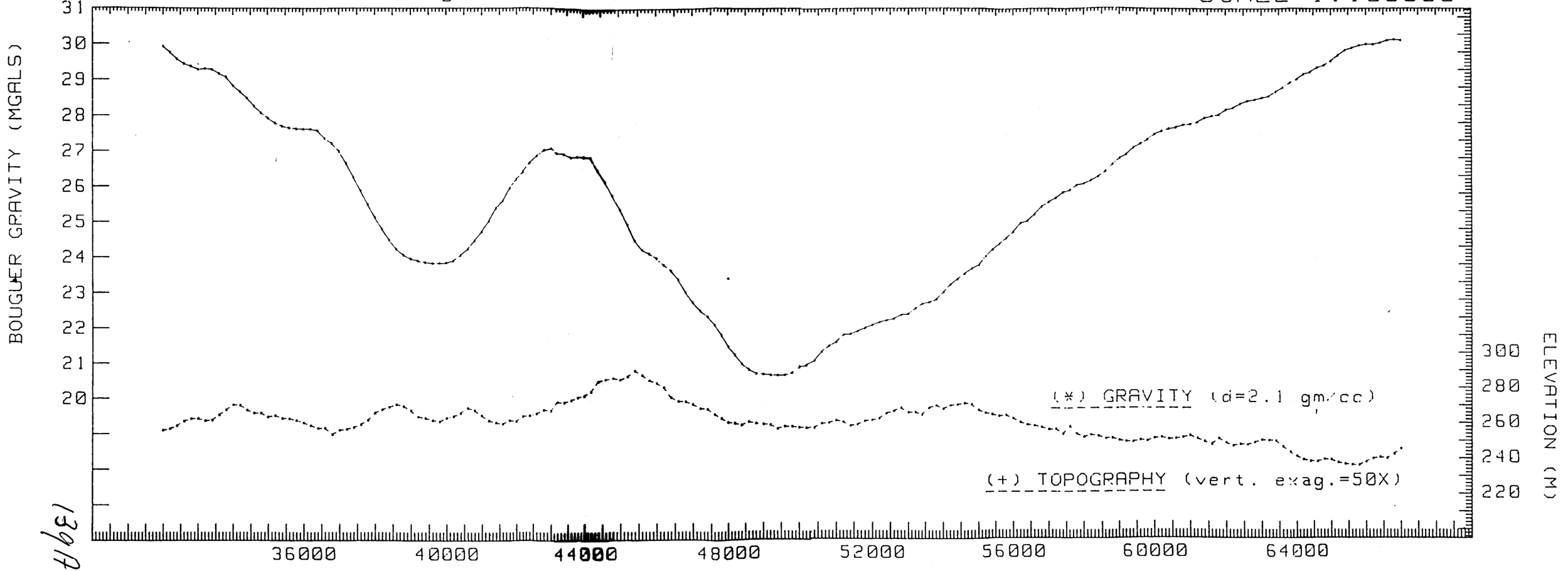
SOLO GEOPHYSICS & CO.

CLIENT: CRA EXPLORATION Pty Ltd

LOCATION: NILPINNA grid Sth Australia

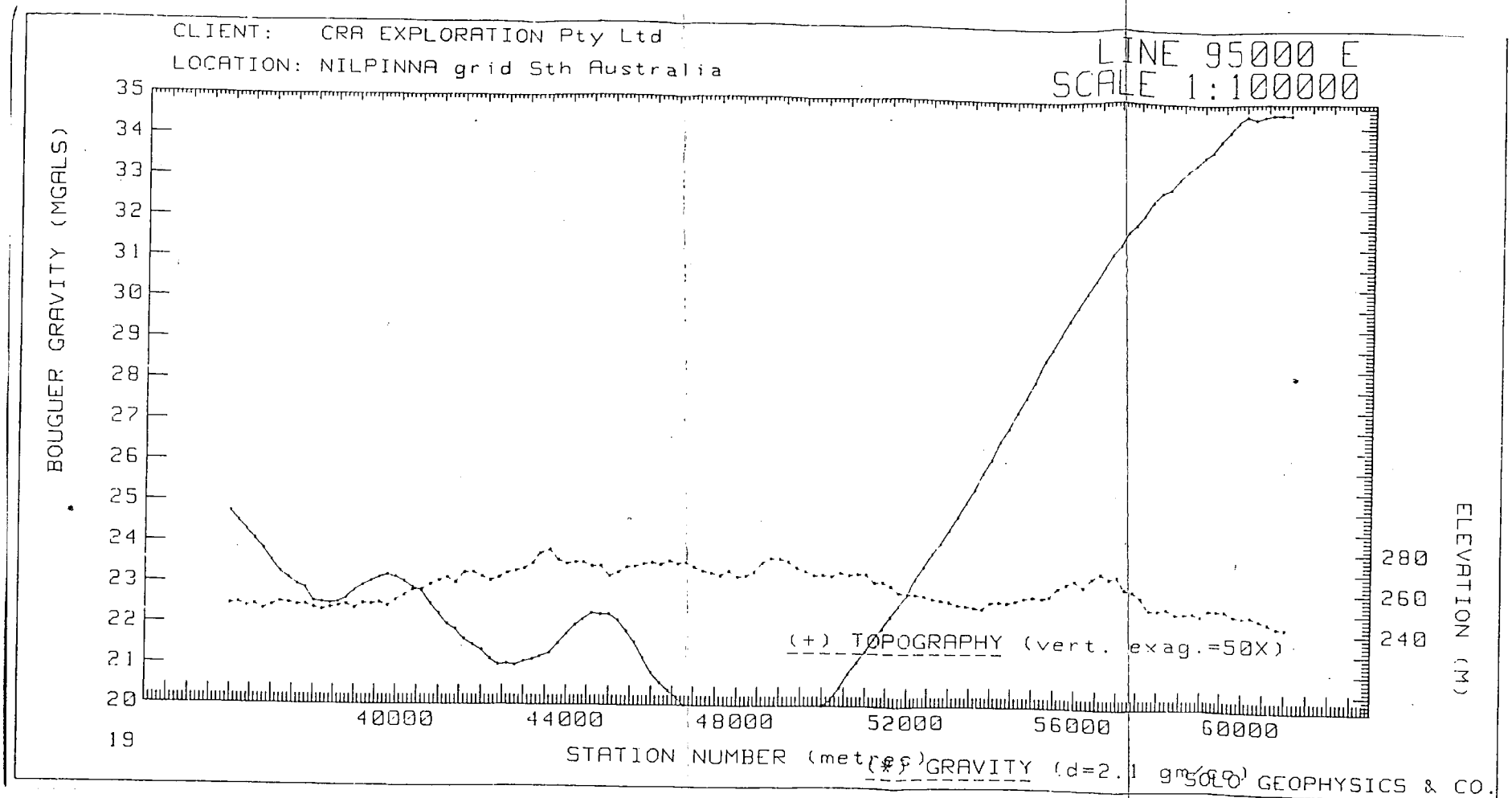
LINE 90000 E

SCALE 1:100000



139A

SOLO GEOPHYSICS & CO.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LINE 95000 E
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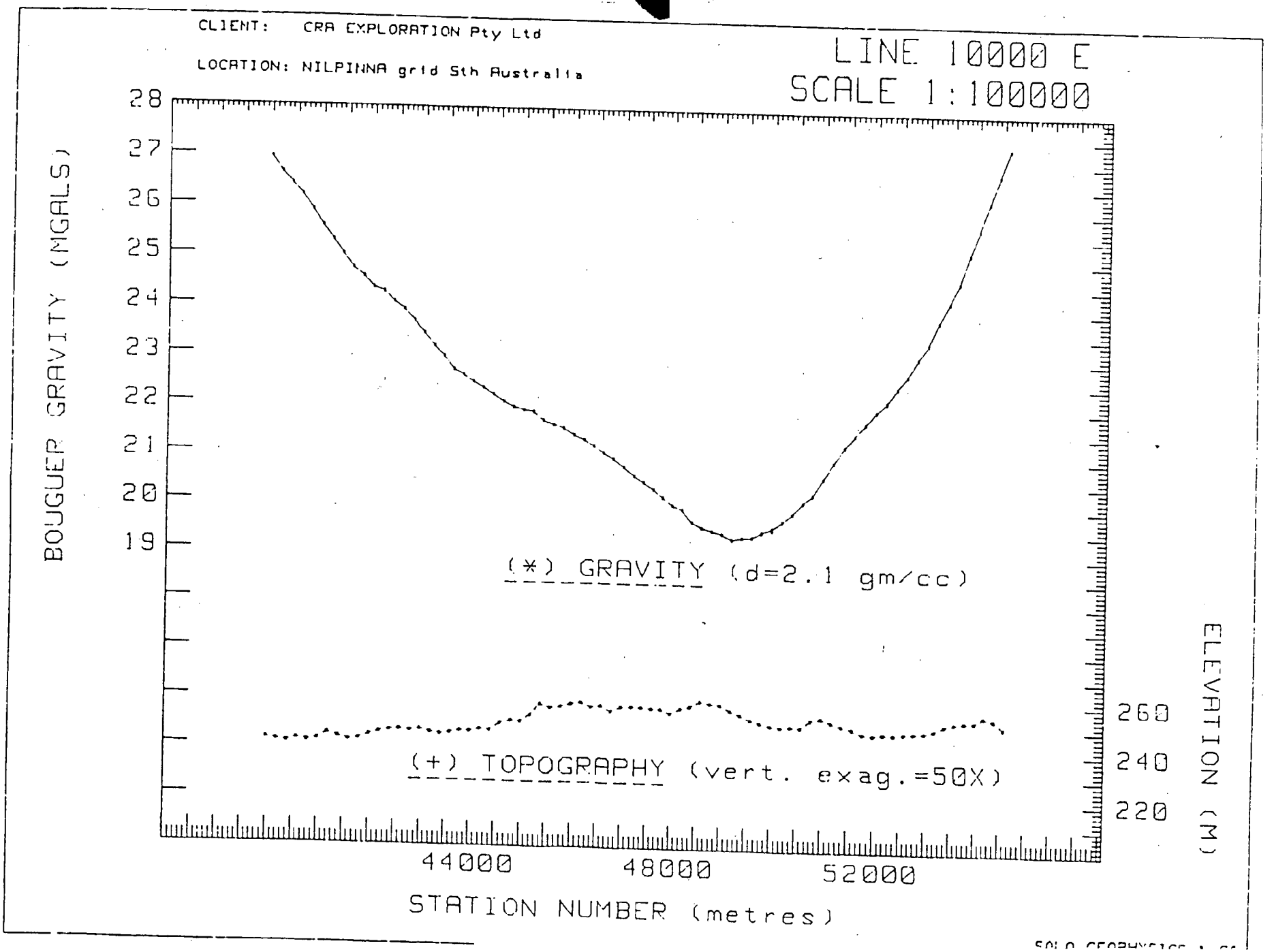
BOUGUER GRAVITY (MGALS)
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
40000
44000
48000
52000
56000
60000
STATION NUMBER (metres)
ELEVATION (M)
280
260
240
(+) TOPOGRAPHY (vert. exag.=50X)
(*) GRAVITY (d=2.1 gm/cc)
SOLO GEOPHYSICS & CO.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LOCATION: NILPINNA grid Sth Australia
LINE 10000 E
SCALE 1:100000
BOUGUER GRAVITY (MGALS)
28
27
26
25
24
23
22
21
20
19
(*) GRAVITY (d=2.1 gm/cc)
(+) TOPOGRAPHY (vert. exag.=50X)
ELEVATION (M)
260
240
220
44000
48000
52000
STATION NUMBER (metres)

GEOPHYSICS & CO

********** DATA REDUCTION PARAMETERS **********

CLIENT CRA EXPLORATION Pty Ltd

LOCATION NILPINNA Grid Sth Australia

Time Zone is 9.5

Grid Rotation Bearing is 39 degrees EAST

The Known Point of 28.67 degrees Latitude is located
at Line Number 50000 and Station Number 100000

The Base Station Observed Gravity Values are.

BASE #	OBSERVED GRAVITY (mgals)
1	979200
2	979194.68
3	979195.32
4	979190.55
5	979200.43
6	979205.09
7	979209.94
8	979201.55
9	979204.14
10	979195.56
11	979200.47
12	979207.33
13	979192.91
14	979196.6
15	979197.53
16	979200.24
17	979190.7
18	979192.7
19	979197.82
20	979195.76
21	979195.2
22	979203.52
23	979207.98
24	979192.25
25	979193.02
26	979200.53
27	979211.61
28	979193.2
29	979196.6
30	979185.53
31	979193.33
32	979190.41
33	979201.26
34	979205.83

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Data Computed on 24/12/81

****

******** CATALOG OF RAW FIELD DATA ********

LOOP# 1	LINE 100000E	FROM 50000N TO 54600N
LOOP# 2	LINE 50000N	FROM 100000E TO 103000E
LOOP# 3	LINE 50000N	FROM 99500E TO 95000E
LOOP# 4	LINE 50000N	FROM 94500E TO 90000E
LOOP# 5	LINE 50000N	FROM 85000E TO 80000E
LOOP# 6	LINE 50000N	FROM 85500E TO 90000E
LOOP# 7	BASE TIE 1-2	
LOOP# 8	BASE TIE 2-3	
LOOP# 9	BASE TIE 3-4	
LOOP# 10	LINE 95000E	FROM 50000N TO 54000N
LOOP# 11	LINE 100000E	FROM 50000N TO 47800N
LOOP# 12	LINE 100000E	FROM 47800N TO 44000N
LOOP# 13	LINE 100000E	FROM 44000N TO 42200N
LOOP# 14	LINE 100000E	FROM 42200N TO 40000N
LOOP# 15	LINE 95000E	FROM 54000N TO 52400N
LOOP# 16	LINE 95000E	FROM 52400N TO 51000N
LOOP# 17	LINE 95000E	FROM 50000N TO 48800N
LOOP# 18	LINE 95000E	FROM 46600N TO 42000N
LOOP# 19	LINE 90000E	FROM 50000N TO 53600N
LOOP# 20	LINE 90000E	FROM 53600N TO 57200N
LOOP# 21	LINE 90000E	FROM 57200N TO 61000N
LOOP# 22	LINE 95000E	FROM 42000N TO 39000N
LOOP# 23	LINE 95000E	FROM 39000N TO 36000N
LOOP# 24	LINE 90000E	FROM 61000N TO 65000N
LOOP# 25	LINE 90000E	FROM 65000N TO 69000N
LOOP# 26	LINE 85000E	FROM 50000N TO 54000N
LOOP# 27	LINE 85000E	FROM 54000N TO 58000N
LOOP# 28	LINE 90000E	FROM 50000N TO 46200N
LOOP# 29	LINE 85000E	FROM 50000N TO 42000N

LOOP# 30	LINE 85000E	FROM 52800N TO 5[illegible]
LOOP# 31	LINE 85000E	FROM 49800N TO 48000N
LOOP# 32	LINE 90000E	FROM 46200N TO 42200N
LOOP# 33	LINE 90000E	FROM 42200N TO [illegible]2000N
LOOP# 34	LINE 90000E	FROM 37200N TO 32000N
LOOP# 35	LINE 85000E	FROM 50000N TO 46000N
LOOP# 36	LINE 85000E	FROM 46000N TO 42000N
LOOP# 37	BASE LIL 4-20	
LOOP# 38	LINE 80000E	FROM 50000N TO 54000N
LOOP# 39	LINE 80000E	FROM 54000N TO 56000N
LOOP# 40	LINE 85000E	FROM 42000N TO 38000N
LOOP# 41	LINE 85000E	FROM 38000N TO 34000N
LOOP# 42	LINE 85000E	FROM 34000N TO 30000N
LOOP# 43	LINE 80000E	FROM 50000N TO 45800N
LOOP# 44	LINE 80000E	FROM 45800N TO 41600N
LOOP# 45	LINE 80000E	FROM 41600N TO 38600N
LOOP# 46	LINE 80000E	FROM 38600N TO 33800N
LOOP# 47	LINE 80000E	FROM 33800N TO 29000N
LOOP# 48	LINE 80000E	FROM 29000N TO 25000N

Data Computed on 11/12/81

BULL GEOPHYSICS & CO

Job # 15 308

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LINE 00000 E

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row	STATION	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP	RPTS	BOUGUER GRAVITY (gms/cc) 1.0	1.7	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.9
1	0	25000	00000	253.33	48		32.07	31.03	29.96	28.90	27.84	26.78	25.72	24.66	23.59	22.53
2	0	25200	00000	255.33	48		32.01	30.94	29.87	28.80	27.73	26.66	25.59	24.52	23.45	22.38
3	0	25400	00000	254.25	48		31.91	30.85	29.78	28.72	27.65	26.58	25.52	24.45	23.37	22.30
4	0	25600	00000	254.51	48		31.91	30.85	29.78	28.72	27.65	26.58	25.52	24.45	23.37	22.30
5	0	25800	00000	255.40	48		31.71	30.65	29.58	28.51	27.45	26.38	25.31	24.25	23.18	22.11
6	0	26000	00000	255.69	48		31.50	30.43	29.36	28.29	27.22	26.14	25.07	24.00	22.93	21.86
7	0	26200	00000	255.70	48		31.43	30.36	29.29	28.22	27.15	26.07	25.00	23.93	22.86	21.79
8	0	26400	00000	256.33	48		31.42	30.35	29.28	28.20	27.13	26.06	24.99	23.91	22.84	21.77
9	0	26600	00000	256.79	48		31.41	30.34	29.26	28.19	27.11	26.04	24.96	23.89	22.82	21.74
10	0	26800	00000	256.70	48		31.30	30.22	29.15	28.07	26.99	25.92	24.84	23.77	22.69	21.61
11	0	27000	00000	257.60	48		31.11	30.04	28.96	27.89	26.81	25.74	24.66	23.58	22.51	21.43
12	0	27200	00000	257.47	48		30.88	29.80	28.72	27.64	26.56	25.48	24.40	23.32	22.24	21.16
13	0	27400	00000	255.35	48		30.63	29.55	28.47	27.39	26.31	25.24	24.16	23.08	22.00	20.92
14	0	27600	00000	255.72	48		30.35	29.28	28.21	27.14	26.07	25.00	23.93	22.86	21.79	20.72
15	0	27800	00000	257.63	48		30.13	29.05	27.98	26.91	25.84	24.77	23.70	22.62	21.55	20.48
16	0	28000	00000	257.92	48		30.11	29.03	27.95	26.87	25.79	24.71	23.63	22.56	21.48	20.40
17	0	28200	00000	257.02	48		29.97	28.88	27.80	26.72	25.64	24.56	23.48	22.40	21.32	20.24
18	0	28400	00000	256.44	48		27.57	28.51	27.44	26.36	25.28	24.21	23.13	22.05	20.97	19.90
19	0	28600	00000	256.24	48		29.08	28.01	26.93	25.86	24.78	23.71	22.63	21.56	20.48	19.41
20	0	28800	00000	256.04	48		28.54	27.46	26.39	25.31	24.24	23.17	22.09	21.02	19.94	18.87
21	0	29000	00000	256.51	47		28.09	27.02	25.95	24.88	23.80	22.73	21.66	20.58	19.51	18.44
22	0	29000	00000	256.51	48	* RPT	27.87	26.79	25.72	24.64	23.56	22.49	21.41	20.34	19.26	18.19
23	0	29200	00000	255.74	47		27.65	26.58	25.50	24.43	23.35	22.28	21.20	20.13	19.05	17.98
24	0	29400	00000	256.06	47		27.31	26.24	25.16	24.09	23.02	21.95	20.88	19.80	18.73	17.66
25	0	29600	00000	256.93	47		26.92	25.85	24.77	23.70	22.63	21.55	20.48	19.41	18.34	17.26
26	0	29800	00000	258.95	47		26.60	25.52	24.45	23.37	22.29	21.21	20.14	19.06	17.98	16.91
27	0	30000	00000	259.31	47		26.40	25.40	24.31	23.23	22.14	21.06	19.97	18.89	17.80	16.72
28	0	30200	00000	261.26	47		26.43	25.33	24.26	23.17	22.08	21.00	19.91	18.82	17.73	16.65
29	0	30400	00000	262.57	47		26.41	25.32	24.22	23.13	22.03	20.94	19.84	18.75	17.65	16.56
30	0	30600	00000	260.72	47		26.34	25.44	24.34	23.24	22.14	21.04	19.94	18.84	17.74	16.64
31	0	30800	00000	260.98	47		26.71	25.61	24.52	23.43	22.33	21.24	20.15	19.06	17.96	16.87
32	0	31000	00000	262.89	47		26.73	25.84	24.75	23.65	22.56	21.46	20.37	19.28	18.18	17.09
33	0	31200	00000	260.14	47		27.24	26.14	25.04	23.94	22.83	21.73	20.63	19.52	18.43	17.33
34	0	31400	00000	260.91	47		27.50	26.41	25.32	24.23	23.14	22.05	20.96	19.87	18.78	17.69
35	0	31600	00000	262.96	47		27.01	26.71	25.62	24.53	23.43	22.34	21.25	20.15	19.06	17.96
36	0	31800	00000	265.35	47		28.05	26.95	25.85	24.75	23.64	22.54	21.44	20.34	19.24	18.13
37	0	32000	00000	264.68	47		28.39	27.28	26.17	25.05	23.94	22.83	21.72	20.60	19.49	18.38
38	0	32200	00000	267.07	47		28.85	27.54	26.43	25.32	24.21	23.11	22.00	20.89	19.78	18.67
39	0	32400	00000	267.57	47		28.90	27.79	26.67	25.55	24.43	23.31	22.19	21.07	19.95	18.83
40	0	32600	00000	269.07	47		29.04	27.91	26.79	25.67	24.55	23.43	22.31	21.19	20.06	18.94
41	0	32800	00000	271.75	47		29.11	27.98	26.85	25.73	24.60	23.47	22.34	21.21	20.09	18.96
42	0	33000	00000	273.59	47		29.10	28.04	26.90	25.76	24.62	23.48	22.34	21.21	20.07	18.93
43	0	33200	00000	273.37	47		29.34	28.20	27.05	25.90	24.76	23.61	22.46	21.32	20.17	19.02
44	0	33400	00000	274.04	47		29.44	28.29	27.15	26.00	24.86	23.71	22.56	21.42	20.27	19.13
45	0	33600	00000	271.06	47		29.57	28.42	27.28	26.13	24.98	23.83	22.68	21.53	20.38	19.24
46	0	33800	00000	274.12	47		29.60	28.46	27.33	26.19	25.06	23.96	22.78	21.65	20.51	19.36
47	0	33800	00000	274.12	46	* RPT	29.74	28.59	27.44	26.29	25.14	23.99	22.84	21.69	20.55	19.40
48	0	34000	00000	272.11	46		29.74	28.59	27.45	26.30	25.15	24.00	22.85	21.70	20.55	19.40
49	0	34200	00000	272.54	46		29.85	28.71	27.57	26.43	25.27	24.15	23.01	21.87	20.72	19.58
50	0	34400	00000	273.71	46		30.04	28.90	27.75	26.61	25.47	24.33	23.19	22.04	20.90	19.76
							30.25	29.10	27.95	26.81	25.66	24.51	23.37	22.22	21.07	19.92

51	U	34600	80000	275.16	46		30.37	29.22	28.07	26.91	25.76	24.61	23.45	22.30	21.15	19.99
52	U	34800	80000	271.60	46		30.47	29.33	28.20	27.06	25.92	24.78	23.64	22.50	21.37	20.23
53	U	35000	80000	272.15	46		30.67	29.53	28.39	27.25	26.11	24.97	23.83	22.69	21.55	20.41
54	U	35200	80000	272.70	46		30.76	27.81	28.67	27.53	26.38	25.24	24.07	22.95	21.80	20.66
55	U	35400	80000	272.73	46		31.22	30.08	28.94	27.79	26.65	25.51	24.36	23.22	22.08	20.94
56	U	35600	80000	273.17	46		31.30	30.23	29.09	27.94	26.80	25.65	24.51	23.36	22.22	21.07
57	U	35800	80000	274.50	46		31.49	30.34	29.17	28.04	26.87	25.74	24.59	23.44	22.29	21.13
58	U	36000	80000	276.09	46		31.58	30.42	29.27	28.11	26.95	25.79	24.64	23.48	22.32	21.17
59	U	36200	80000	278.78	46		31.60	30.51	29.34	28.18	27.01	25.84	24.67	23.50	22.33	21.17
60	U	36400	80000	282.59	46		31.79	30.61	29.42	28.24	27.05	25.87	24.69	23.50	22.32	21.13
61	U	36600	80000	281.64	46		32.00	30.82	29.64	28.46	27.28	26.10	24.92	23.74	22.56	21.38
62	U	36800	80000	279.69	46		32.14	30.97	29.80	28.63	27.45	26.28	25.11	23.94	22.77	21.59
63	U	37000	80000	276.65	46		32.12	30.96	29.80	28.63	27.47	26.33	25.17	24.01	22.85	21.69
64	U	37200	80000	273.46	46		32.09	30.94	29.80	28.65	27.51	26.36	25.21	24.07	22.92	21.77
65	U	37400	80000	274.56	46		32.12	30.97	29.82	28.67	27.52	26.37	25.22	24.07	22.92	21.77
66	U	37600	80000	275.64	46		32.13	30.98	29.82	28.67	27.51	26.35	25.20	24.04	22.89	21.73
67	U	37800	80000	277.58	46		32.20	31.11	29.95	28.79	27.62	26.46	25.30	24.13	22.99	21.81
68	U	38000	80000	279.17	46		32.44	31.27	30.10	28.93	27.76	26.59	25.42	24.25	23.08	21.91
69	U	38200	80000	281.07	46		32.67	31.50	30.32	29.14	27.96	26.78	25.60	24.42	23.24	22.05
70	U	38400	80000	287.39	46		32.67	31.47	30.26	29.06	27.85	26.65	25.44	24.24	23.04	21.83
71	U	38600	80000	287.08	45		32.65	31.44	30.24	29.03	27.82	26.62	25.41	24.21	23.00	21.79
72	U	38600	80000	287.80	46	* RPT	32.64	31.43	30.23	29.02	27.81	26.61	25.40	24.19	22.99	21.78
73	U	38800	80000	288.26	45		32.62	31.41	30.20	29.00	27.79	26.58	25.37	24.16	22.95	21.74
74	U	39000	80000	284.17	45		32.63	31.44	30.25	29.06	27.87	26.68	25.49	24.29	23.10	21.91
75	U	39200	80000	281.18	45		32.50	31.33	30.15	28.97	27.77	26.61	25.43	24.26	23.08	21.90
76	U	39400	80000	280.25	45		32.31	31.14	29.96	28.79	27.61	26.44	25.27	24.09	22.92	21.74
77	U	39600	80000	280.53	45		32.13	30.95	29.78	28.60	27.43	26.25	25.08	23.90	22.72	21.55
78	U	39800	80000	281.89	45		31.99	30.81	29.63	28.45	27.26	26.08	24.90	23.72	22.54	21.36
79	U	40000	80000	280.87	45		31.87	30.69	29.52	28.34	27.16	25.98	24.81	23.63	22.45	21.28
80	U	40200	80000	278.92	45		31.86	30.67	29.52	28.35	27.18	26.02	24.85	23.68	22.51	21.34
81	U	40400	80000	279.66	45		31.67	30.47	29.24	28.07	26.90	25.73	24.55	23.38	22.21	21.04
82	U	40600	80000	282.69	45		31.37	30.19	29.00	27.82	26.64	25.45	24.27	23.08	21.90	20.71
83	U	40800	80000	284.03	45		31.14	29.95	28.76	27.56	26.37	25.18	23.98	22.79	21.59	20.40
84	U	41000	80000	287.53	45		30.86	29.65	28.45	27.24	26.04	24.83	23.63	22.42	21.22	20.01
85	U	41200	80000	289.65	45		30.75	29.53	28.32	27.11	25.87	24.68	23.46	22.25	21.04	19.82
86	U	41400	80000	293.22	45		30.61	29.38	28.15	26.92	25.69	24.46	23.24	22.01	20.78	19.55
87	U	41600	80000	293.69	45		30.50	29.27	28.04	26.81	25.58	24.35	23.12	21.89	20.66	19.43
88	U	41600	80000	293.67	44	* RPT	30.42	29.26	28.03	26.79	25.56	24.33	23.10	21.87	20.64	19.41
89	U	41800	80000	303.41	44		30.30	29.11	27.84	26.57	25.30	24.02	22.75	21.48	20.21	18.94
90	U	42000	80000	297.95	44		30.29	29.04	27.79	26.54	25.30	24.05	22.80	21.55	20.30	19.05
91	U	42200	80000	296.07	44		30.18	28.94	27.69	26.45	25.21	23.96	22.72	21.47	20.23	18.98
92	U	42400	80000	298.01	44		30.20	29.03	27.78	26.53	25.28	24.03	22.79	21.54	20.29	19.04
93	U	42600	80000	296.00	44		30.23	28.99	27.75	26.50	25.26	24.02	22.78	21.54	20.30	19.06
94	U	42800	80000	298.06	44		30.33	29.08	27.83	26.58	25.33	24.08	22.83	21.58	20.33	19.08
95	U	43000	80000	294.89	44		30.27	29.05	27.82	26.58	25.34	24.11	22.87	21.64	20.40	19.16
96	U	43200	80000	293.71	44		30.11	28.88	27.65	26.42	25.19	23.96	22.73	21.50	20.27	19.04
97	U	43400	80000	296.93	44		29.91	28.67	27.43	26.20	24.96	23.69	22.45	21.20	19.96	18.72
98	U	43600	80000	301.76	44		29.50	28.24	26.97	25.71	24.45	23.18	21.92	20.65	19.39	18.12
99	U	43800	80000	302.41	44		29.23	27.97	26.70	25.43	24.17	22.90	21.63	20.36	19.10	17.83
100	U	44000	80000	304.61	44		28.87	27.59	26.31	25.04	23.76	22.48	21.21	19.93	18.65	17.38
101	U	44200	80000	310.45	44		28.50	27.20	25.90	24.59	23.27	21.97	20.69	19.39	18.09	16.79
102	U	44400	80000	307.25	44		28.16	26.87	25.58	24.29	23.01	21.72	20.43	19.14	17.86	16.57
103	U	44600	80000	309.03	44		27.97	26.67	25.38	24.09	22.81	21.51	20.22	18.92	17.63	16.33
104	U	44800	80000	312.30	44		27.67	26.36	25.05	23.74	22.43	21.12	19.81	18.50	17.19	15.89
105	U	45000	80000	312.14	44		27.60	26.27	24.78	23.67	22.36	21.05	19.75	18.44	17.13	15.82
106	U	45200	80000	306.06	44		27.59	26.31	25.02	23.74	22.46	21.18	19.89	18.61	17.33	16.04
107	U	45400	80000	307.98	44		27.76	26.47	25.18	23.87	22.60	21.31	20.02	18.73	17.44	16.14
108	U	45600	80000	305.83	44		27.94	26.66	25.38	24.09	22.81	21.53	20.25	18.97	17.68	16.40
109	U	45800	80000	307.90	44		28.24	26.95	25.66	24.37	23.08	21.79	20.50	19.21	17.92	16.63
110	U	45800	80000	307.90	43	* RPT	28.25	26.96	25.67	24.38	23.09	21.80	20.51	19.22	17.93	16.64
111	U	46000	80000	311.24	43		28.45	27.15	25.84	24.54	23.23	21.93	20.62	19.32	18.01	16.71
112	U	46200	80000	309.62	43		28.73	27.43	26.13	24.83	23.54	22.24	20.94	19.64	18.35	17.05
113	U	46400	80000	311.16	43		29.02	27.72	26.41	25.11	23.80	22.50	21.20	19.90	18.59	17.28
114	U	46600	80000	303.20	43		29.05	27.70	26.51	25.24	23.97	22.70	21.43	20.16	18.89	17.62
115	U	46800	80000	297.50	43		29.28	27.93	26.70	25.45	24.21	22.96	21.71	20.47	19.22	17.97
116	U	47000	80000	297.10	43		29.41	28.17	26.92	25.68	24.43	23.19	21.94	20.70	19.45	18.21

110	0	47400	80000	298.64	43		29.92	28.67	27.42	26.17	24.92	23.67	22.41	21.16	19.91	18.66
117	0	47600	80000	301.61	43		30.34	29.07	27.81	26.55	25.28	24.02	22.75	21.49	20.23	18.96
120	0	47800	80000	300.67	43		30.38	29.12	27.86	26.60	25.34	24.08	22.82	21.56	20.30	19.04
121	0	48000	80000	298.27	43		30.52	29.27	28.02	26.77	25.52	24.27	23.02	21.77	20.52	19.27
122	0	48200	80000	296.36	43		30.60	29.36	28.12	26.87	25.63	24.39	23.15	21.91	20.66	19.42
123	0	48400	80000	294.06	43		30.67	29.45	28.22	26.98	25.74	24.51	23.27	22.04	20.80	19.59
124	0	48600	80000	295.54	43		30.89	29.66	28.42	27.18	25.94	24.70	23.46	22.22	20.99	19.75
125	0	48800	80000	296.71	43		31.04	29.79	28.55	27.31	26.06	24.82	23.58	22.33	21.09	19.85
126	0	49000	80000	290.66	43		31.23	30.01	28.79	27.57	26.35	25.14	23.92	22.70	21.48	20.26
127	0	49200	80000	288.20	43		31.28	30.08	28.87	27.66	26.45	25.24	24.04	22.83	21.62	20.41
128	0	49400	80000	284.95	43		31.45	30.25	29.06	27.86	26.67	25.47	24.28	23.09	21.89	20.70
129	0	49600	80000	283.98	43		31.50	30.37	29.20	28.01	26.82	25.63	24.44	23.25	22.06	20.89
130	0	49800	80000	283.14	43		31.75	30.56	29.38	28.19	27.00	25.82	24.63	23.44	22.26	21.07
131	0	50000	80000	280.90	43		31.84	30.66	29.48	28.30	27.13	25.95	24.77	23.60	22.42	21.24
132	0	50000	80000	280.90	5	* RPT	31.86	30.68	29.50	28.32	27.15	25.97	24.79	23.62	22.44	21.26
133	0	50000	80000	280.90	38	* RPT	31.84	30.66	29.48	28.30	27.13	25.95	24.77	23.60	22.42	21.24
134	0	50000	80000	280.90	37	* RPT	31.86	30.69	29.51	28.33	27.15	25.98	24.80	23.62	22.44	21.27
135	0	50000	80000	280.90	37	* RPT	31.81	30.63	29.46	28.28	27.10	25.92	24.73	23.57	22.39	21.22
136	0	50200	80000	279.31	38		31.92	30.75	29.58	28.41	27.24	26.07	24.90	23.73	22.56	21.39
137	0	50400	80000	279.04	38		31.91	30.74	29.57	28.40	27.23	26.06	24.89	23.72	22.55	21.38
138	0	50600	80000	279.22	38		31.91	30.74	29.57	28.40	27.23	26.06	24.89	23.72	22.55	21.38
139	0	50800	80000	275.50	38		32.00	30.84	29.69	28.53	27.36	26.22	25.07	23.91	22.76	21.60
140	0	51000	80000	274.05	38		32.09	30.95	29.80	28.65	27.50	26.35	25.20	24.05	22.91	21.76
141	0	51200	80000	272.57	38		32.23	31.09	29.94	28.80	27.66	26.52	25.37	24.23	23.09	21.95
142	0	51400	80000	273.63	38		32.37	31.22	30.07	28.93	27.78	26.63	25.49	24.34	23.19	22.04
143	0	51600	80000	276.25	38		32.56	31.40	30.25	29.09	27.93	26.77	25.62	24.46	23.30	22.14
144	0	51800	80000	274.79	38		32.71	31.56	30.40	29.25	28.10	26.95	25.80	24.65	23.49	22.34
145	0	52000	80000	273.55	38		32.83	31.69	30.54	29.37	28.23	27.10	25.95	24.81	23.66	22.51
146	0	52200	80000	274.23	38		32.89	31.74	30.59	29.44	28.30	27.15	26.00	24.85	23.70	22.55
147	0	52400	80000	273.44	38		33.07	31.93	30.78	29.63	28.47	27.34	26.20	25.05	23.90	22.76
148	0	52600	80000	270.87	38		33.21	32.08	30.94	29.80	28.67	27.53	26.40	25.26	24.13	22.99
149	0	52800	80000	271.43	38		33.38	32.24	31.10	29.97	28.83	27.69	26.55	25.42	24.28	23.14
150	0	53000	80000	274.04	38		33.67	32.52	31.37	30.22	29.07	27.92	26.78	25.63	24.48	23.33
151	0	53200	80000	276.79	38		33.86	32.70	31.54	30.38	29.22	28.06	26.90	25.74	24.58	23.42
152	0	53400	80000	273.45	38		34.14	32.99	31.84	30.70	29.55	28.41	27.26	26.11	24.97	23.82
153	0	53600	80000	271.85	38		34.40	33.26	32.12	30.98	29.84	28.70	27.56	26.42	25.28	24.14
154	0	53800	80000	270.90	38		34.71	33.57	32.44	31.30	30.16	29.03	27.89	26.76	25.62	24.49
155	0	54000	80000	270.36	39		34.87	33.76	32.63	31.47	30.33	29.20	28.10	26.96	25.83	24.70
156	0	54000	80000	270.36	38	* RPT	34.90	33.77	32.64	31.50	30.37	29.24	28.10	26.97	25.84	24.70
157	0	54200	80000	269.19	39		35.13	34.00	32.88	31.75	30.62	29.49	28.36	27.23	26.11	24.98
158	0	54400	80000	267.28	39		35.20	34.16	33.04	31.92	30.80	29.68	28.56	27.44	26.32	25.20
159	0	54600	80000	266.55	39		35.41	34.36	33.18	32.06	30.95	29.83	28.71	27.59	26.48	25.36
160	0	54800	80000	263.96	39		35.51	34.41	33.30	32.20	31.09	29.98	28.88	27.77	26.66	25.56
161	0	55000	80000	262.83	39		35.59	34.49	33.39	32.29	31.18	30.08	28.98	27.88	26.78	25.68
162	0	55200	80000	261.25	39		35.68	34.58	33.49	32.39	31.30	30.20	29.11	28.01	26.92	25.82
163	0	55400	80000	261.00	39		35.67	34.59	33.50	32.40	31.30	30.20	29.11	28.01	26.91	25.81
164	0	55600	80000	260.20	39		35.74	34.65	33.56	32.47	31.38	30.29	29.20	28.11	27.02	25.93
165	0	55800	80000	259.79	39		35.82	34.73	33.64	32.55	31.46	30.37	29.28	28.19	27.11	26.02
166	0	56000	80000	261.29	39		35.92	34.83	33.73	32.64	31.54	30.45	29.35	28.26	27.16	26.07

Data Computed on 24/12/81

Job # 05 308

LINE 85000 E

Row #	STATION #	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP #.	RPTS	BOUGUER GRAVITY (gms/cc) 1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
1	0	28000	85000	247.39	42		34.00	32.97	31.93	30.89	29.86	28.82	27.78	26.75	25.71	24.67
2	0	28200	85000	247.14	42		33.85	32.81	31.78	30.74	29.71	28.67	27.64	26.60	25.56	24.53
3	0	28400	85000	247.47	42		33.50	32.46	31.43	30.39	29.35	28.31	27.28	26.24	25.20	24.17
4	0	28600	85000	247.34	42		33.34	32.31	31.27	30.23	29.20	28.16	27.12	26.09	25.05	24.01
5	0	28800	85000	247.40	42		33.20	32.16	31.13	30.09	29.05	28.01	26.98	25.94	24.90	23.87
6	0	29000	85000	248.11	42		33.23	32.19	31.15	30.11	29.07	28.03	26.99	25.95	24.91	23.87
7	0	29200	85000	248.29	42		33.16	32.12	31.08	30.04	29.00	27.96	26.91	25.87	24.83	23.79
8	0	29400	85000	249.30	42		32.99	31.94	30.90	29.85	28.81	27.76	26.72	25.67	24.63	23.58
9	0	29700	85000	250.52	42		32.75	31.70	30.65	29.60	28.55	27.50	26.45	25.40	24.35	23.30
10	0	30000	85000	249.95	42		32.50	31.45	30.40	29.36	28.31	27.26	26.21	25.17	24.12	23.07
11	0	30200	85000	249.83	42		32.36	31.31	30.26	29.21	28.17	27.12	26.07	25.03	23.98	22.93
12	0	30400	85000	250.73	42		32.20	31.15	30.10	29.05	27.99	26.94	25.89	24.84	23.79	22.74
13	0	30600	85000	252.11	42		32.22	31.17	30.11	29.05	28.00	26.94	25.88	24.83	23.77	22.71
14	0	30800	85000	250.50	42		32.27	31.22	30.17	29.12	28.07	27.02	25.97	24.92	23.87	22.82
15	0	31000	85000	252.44	42		32.32	31.26	30.20	29.15	28.09	27.03	25.97	24.91	23.86	22.80
16	0	31200	85000	252.24	42		32.32	31.26	30.21	29.15	28.07	27.03	25.98	24.92	23.86	22.81
17	0	31400	85000	250.39	42		32.51	31.46	30.41	29.36	28.31	27.26	26.21	25.15	24.11	23.06
18	0	31600	85000	252.22	42		32.77	31.71	30.66	29.60	28.54	27.49	26.43	25.37	24.31	23.26
19	0	31800	85000	253.03	42		33.15	32.09	31.03	29.97	28.90	27.84	26.78	25.72	24.66	23.60
20	0	32000	85000	252.59	42		33.46	32.40	31.35	30.29	29.23	28.17	27.11	26.05	24.99	23.94
21	0	32200	85000	255.87	42		33.65	32.50	31.50	30.43	29.36	28.27	27.21	26.14	25.07	24.00
22	0	32400	85000	254.70	42		33.73	32.67	31.60	30.53	29.46	28.40	27.33	26.26	25.19	24.13
23	0	32600	85000	256.97	42		33.74	32.67	31.59	30.51	29.44	28.36	27.28	26.21	25.13	24.05
24	0	32800	85000	254.71	42		33.77	32.70	31.63	30.57	29.50	28.43	27.36	26.30	25.23	24.16
25	0	33000	85000	255.44	42		33.91	32.84	31.77	30.70	29.63	28.56	27.49	26.42	25.35	24.28
26	0	33200	85000	256.60	42		33.98	32.90	31.82	30.75	29.67	28.60	27.52	26.45	25.37	24.29
27	0	33400	85000	256.09	42		34.17	33.09	32.02	30.95	29.87	28.80	27.73	26.65	25.58	24.51
28	0	33600	85000	256.20	42		34.18	33.10	32.03	30.96	29.88	28.81	27.74	26.66	25.59	24.51
29	0	33800	85000	256.87	42		34.18	33.10	32.02	30.95	29.87	28.80	27.72	26.64	25.57	24.49
30	0	34000	85000	257.63	42		34.20	33.12	32.04	30.96	29.80	28.80	27.72	26.64	25.56	24.48
31	0	34000	85000	257.63	41	1 RPT	34.20	33.12	32.04	30.96	29.89	28.81	27.73	26.65	25.57	24.49
32	0	34200	85000	259.91	41		34.21	33.12	32.03	30.95	29.86	28.77	27.68	26.59	25.50	24.41
33	0	34400	85000	260.76	41		34.22	33.10	32.08	30.99	29.90	28.81	27.71	26.62	25.53	24.43
34	0	34600	85000	261.88	41		34.20	33.12	32.09	31.00	29.90	28.80	27.70	26.61	25.51	24.41
35	0	34800	85000	263.79	41		33.93	32.82	31.72	30.61	29.51	28.40	27.30	26.19	25.09	23.98
36	0	35000	85000	266.28	41		33.34	32.23	31.11	29.99	28.88	27.76	26.65	25.53	24.41	23.30
37	0	35200	85000	269.35	41		32.52	31.39	30.26	29.13	28.00	26.87	25.74	24.61	23.49	22.36
38	0	35400	85000	266.42	41		31.66	30.54	29.43	28.31	27.19	26.08	24.96	23.85	22.73	21.61
39	0	35600	85000	263.07	41		31.19	30.09	28.99	27.89	26.78	25.68	24.58	23.48	22.37	21.27
40	0	35800	85000	263.26	41		31.06	29.95	28.85	27.75	26.64	25.54	24.44	23.33	22.23	21.13
41	0	36000	85000	267.13	41		31.03	29.91	28.79	27.67	26.55	25.44	24.32	23.20	22.08	20.96
42	0	36200	85000	268.58	41		31.03	29.90	28.78	27.65	26.53	25.40	24.28	23.15	22.02	20.90
43	0	36400	85000	268.12	41		31.07	29.95	28.83	27.70	26.58	25.45	24.33	23.21	22.08	20.96
44	0	36600	85000	270.74	41		31.10	30.05	28.91	27.78	26.64	25.51	24.37	23.24	22.10	20.97
45	0	36800	85000	270.01	41		31.14	30.01	28.88	27.73	26.62	25.48	24.35	23.22	22.09	20.96
46	0	37000	85000	270.47	41		30.99	29.85	28.72	27.58	26.45	25.32	24.18	23.05	21.92	20.78
47	0	37200	85000	269.63	41		30.73	29.60	28.47	27.34	26.21	25.08	23.95	22.82	21.69	20.56
48	0	37400	85000	270.38	41		30.48	29.35	28.22	27.08	25.95	24.82	23.69	22.56	21.42	20.29
49	0	37600	85000	272.99	41		30.15	29.02	27.87	26.73	25.58	24.44	23.30	22.17	21.01	19.86
50	0	37800	85000	275.86	41		29.78	28.64	27.50	26.43	25.29	24.12	22.96	21.80	20.65	19.49

51	0	38000	85000	276.54	41		29.65	28.49	27.33	26.17	25.01	23.86	22.70	21.54	20.38	19.22
52	0	38000	85000	276.54	40	* RPT	29.65	28.49	27.33	26.17	25.01	23.85	22.69	21.54	20.38	19.22
53	0	38200	85000	272.71	40		29.36	28.22	27.08	25.93	24.79	23.65	22.50	21.36	20.22	19.08
54	0	38400	85000	271.44	40		29.17	28.02	26.89	25.76	24.62	23.48	22.34	21.21	20.07	18.93
55	0	38600	85000	271.44	40		29.00	27.84	26.70	25.56	24.43	23.29	22.15	21.01	19.88	18.74
56	0	38800	85000	270.82	40		28.86	27.74	26.60	25.46	24.33	23.19	22.05	20.91	19.78	18.64
57	0	39000	85000	273.84	40		28.66	27.52	26.39	25.25	24.12	22.98	21.85	20.71	19.58	18.44
58	0	39200	85000	276.90	40		28.43	27.28	26.14	24.99	23.84	22.69	21.55	20.40	19.25	18.10
59	0	39400	85000	280.32	40		28.26	27.10	25.94	24.78	23.62	22.46	21.30	20.15	18.99	17.81
60	0	39600	85000	280.36	40		28.11	26.93	25.76	24.58	23.41	22.23	21.06	19.89	18.71	17.54
61	0	39800	85000	277.71	40		27.92	26.81	25.64	24.46	23.29	22.11	20.94	19.76	18.59	17.41
62	0	40000	85000	276.38	40		27.80	26.64	25.48	24.31	23.15	21.98	20.82	19.66	18.49	17.33
63	0	40200	85000	275.65	40		27.65	26.49	25.33	24.17	23.01	21.85	20.70	19.54	18.38	17.22
64	0	40400	85000	274.89	40		27.48	26.32	25.17	24.01	22.86	21.70	20.55	19.39	18.24	17.08
65	0	40600	85000	274.20	40		27.29	26.14	24.98	23.83	22.68	21.53	20.38	19.22	18.07	16.92
66	0	40800	85000	274.03	40		27.09	25.94	24.79	23.64	22.49	21.34	20.19	19.04	17.89	16.74
67	0	41000	85000	272.51	40		26.94	25.79	24.64	23.49	22.34	21.20	20.05	18.90	17.75	16.60
68	0	41200	85000	271.61	40		26.69	25.54	24.40	23.26	22.12	20.98	19.83	18.69	17.55	16.41
69	0	41400	85000	270.72	40		26.47	25.33	24.19	23.05	21.91	20.78	19.64	18.50	17.36	16.22
70	0	41600	85000	274.00	40		26.21	25.07	23.94	22.81	21.67	20.54	19.40	18.27	17.13	16.00
71	0	41800	85000	276.90	40		25.96	24.81	23.66	22.51	21.36	20.21	19.07	17.92	16.77	15.62
72	0	42000	85000	277.88	36		25.80	24.52	23.36	22.20	21.04	19.88	18.72	17.56	16.40	15.24
73	0	42000	85000	277.80	40	* RPT	25.30	24.21	23.05	21.88	20.72	19.55	18.39	17.23	16.06	14.90
74	0	42200	85000	274.97	36		25.37	24.21	23.04	21.88	20.71	19.55	18.39	17.22	16.06	14.89
75	0	42400	85000	276.03	36		25.02	23.92	22.77	21.62	20.46	19.31	18.16	17.01	15.85	14.70
76	0	42600	85000	276.64	36		24.85	23.69	22.53	21.38	20.22	19.06	17.90	16.75	15.59	14.43
77	0	42800	85000	277.55	36		24.66	23.50	22.34	21.18	20.02	18.86	17.70	16.54	15.38	14.22
78	0	43000	85000	279.81	36		24.46	23.30	22.14	20.97	19.81	18.65	17.48	16.32	15.16	13.99
79	0	43200	85000	280.98	36		24.27	23.10	21.93	20.76	19.60	18.41	17.24	16.06	14.89	13.72
80	0	43400	85000	282.11	36		24.17	23.00	21.82	20.64	19.46	18.28	17.11	15.93	14.75	13.57
81	0	43600	85000	283.49	36		24.11	22.93	21.75	20.57	19.38	18.20	17.02	15.84	14.65	13.47
82	0	43800	85000	284.11	36		24.07	22.88	21.69	20.51	19.32	18.13	16.94	15.75	14.57	13.38
83	0	44000	85000	285.57	36		24.00	22.81	21.62	20.43	19.24	18.05	16.86	15.67	14.48	13.29
84	0	44200	85000	286.65	36		23.91	22.71	21.51	20.32	19.12	17.92	16.73	15.53	14.33	13.14
85	0	44400	85000	285.15	36		23.83	22.63	21.43	20.22	19.02	17.82	16.62	15.42	14.22	13.02
86	0	44600	85000	279.19	36		23.83	22.64	21.44	20.25	19.05	17.86	16.66	15.47	14.27	13.08
87	0	44800	85000	279.22	36		23.90	22.73	21.56	20.39	19.22	18.05	16.80	15.71	14.54	13.37
88	0	45000	85000	277.54	36		23.98	22.81	21.64	20.47	19.30	18.13	16.96	15.79	14.62	13.45
89	0	45200	85000	275.59	36		24.04	22.87	21.71	20.55	19.38	18.22	17.06	15.89	14.73	13.57
90	0	45400	85000	275.55	36		24.08	22.73	21.77	20.62	19.46	18.31	17.15	16.00	14.84	13.69
91	0	45600	85000	275.42	36		24.26	23.10	21.95	20.79	19.64	18.48	17.33	16.17	15.02	13.86
92	0	45800	85000	273.89	36		24.36	23.20	22.05	20.90	19.74	18.59	17.43	16.28	15.12	13.97
93	0	46000	85000	272.57	35		24.56	23.41	22.26	21.11	19.96	18.82	17.67	16.52	15.37	14.23
94	0	46000	85000	272.57	36	* RPT	24.68	23.54	22.40	21.26	20.11	18.97	17.83	16.67	15.54	14.40
95	0	46200	85000	274.99	35		24.68	23.54	22.40	21.26	20.11	18.97	17.83	16.69	15.55	14.40
96	0	46400	85000	276.70	35		24.57	23.74	22.58	21.43	20.28	19.13	17.97	16.82	15.67	14.52
97	0	46600	85000	277.58	35		25.12	23.96	22.80	21.64	20.48	19.32	18.16	17.00	15.84	14.68
98	0	46800	85000	277.06	35		25.28	24.12	22.96	21.79	20.63	19.47	18.30	17.14	15.98	14.81
99	0	47000	85000	275.93	35		25.50	24.42	23.26	22.10	20.94	19.78	18.61	17.45	16.29	15.13
100	0	47200	85000	274.44	35		25.57	24.41	23.25	22.10	20.94	19.78	18.63	17.47	16.31	15.16
101	0	47400	85000	270.06	35		25.70	24.63	23.48	22.33	21.18	20.03	18.88	17.73	16.58	15.43
102	0	47600	85000	266.69	35		26.00	24.86	23.73	22.59	21.46	20.32	19.19	18.05	16.92	15.78
103	0	47800	85000	268.61	35		26.10	24.98	23.87	22.75	21.63	20.51	19.40	18.28	17.16	16.04
104	0	48000	85000	271.49	35		26.45	25.33	24.20	23.08	21.95	20.83	19.70	18.59	17.45	16.32
105	0	48200	85000	270.66	35		26.66	25.52	24.38	23.24	22.11	20.97	19.83	18.69	17.55	16.42
106	0	48400	85000	269.86	35		26.76	25.63	24.50	23.36	22.23	21.09	19.96	18.82	17.69	16.55
107	0	48600	85000	267.91	35		27.15	26.02	24.88	23.75	22.62	21.49	20.36	19.23	18.10	16.97
108	0	48800	85000	267.28	35		27.37	26.25	25.13	24.01	22.88	21.76	20.64	19.51	18.39	17.27
109	0	49000	85000	267.47	35		27.50	26.38	25.26	24.14	23.02	21.90	20.78	19.66	18.54	17.42
110	0	49200	85000	268.01	35		27.50	26.38	25.26	24.14	23.02	21.90	20.78	19.66	18.54	17.42
111	0	49400	85000	270.76	35		27.48	26.36	25.24	24.11	22.99	21.87	20.75	19.62	18.50	17.38
112	0	49600	85000	273.43	35		27.47	26.35	25.22	24.09	22.95	21.81	20.68	19.54	18.41	17.27
113	0	49000	85000	274.40	35		27.30	26.23	25.09	23.94	22.79	21.65	20.50	19.36	18.21	17.06
114	0	50000	85000	282.35	0		27.41	26.26	25.11	23.96	22.81	21.66	20.51	19.36	18.21	17.06
115	0	50000	85000	282.35	9	* RPT	27.37	26.19	25.00	23.82	22.64	21.45	20.27	19.09	17.90	16.72
116	0	50000	85000	282.35	26	* RPT	27.30	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73

117	0	50000	85000	282.35	5	* RPT	27.38	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73
118	0	50000	85000	282.35	37	* RPT	27.38	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73
119	0	50000	85000	282.35	35	* RPT	27.38	26.20	25.02	23.83	22.65	21.47	20.28	19.10	17.92	16.73
120	0	50200	85000	281.44	26		27.38	26.20	25.02	23.84	22.66	21.48	20.30	19.12	17.94	16.76
121	0	50400	85000	283.09	26		27.33	26.14	24.95	23.76	22.57	21.38	20.19	19.00	17.81	16.62
122	0	50600	85000	280.49	26		27.40	26.23	25.05	23.88	22.70	21.53	20.35	19.17	18.00	16.82
123	0	50800	85000	280.29	26		27.31	26.14	24.96	23.79	22.61	21.44	20.26	19.09	17.91	16.74
124	0	51000	85000	284.12	26		27.30	26.11	24.92	23.73	22.54	21.35	20.16	18.97	17.78	16.59
125	0	51200	85000	282.60	26		27.22	26.03	24.85	23.67	22.48	21.30	20.11	18.93	17.74	16.56
126	0	51400	85000	276.77	26		27.18	26.02	24.86	23.70	22.54	21.38	20.22	19.06	17.90	16.74
127	0	51600	85000	278.48	26		27.18	26.01	24.84	23.68	22.51	21.34	20.18	19.01	17.84	16.67
128	0	51800	85000	277.67	26		27.13	25.96	24.80	23.64	22.47	21.31	20.15	18.98	17.82	16.65
129	0	52000	85000	279.45	26		27.14	25.96	24.79	23.62	22.45	21.28	20.11	18.94	17.77	16.59
130	0	52200	85000	283.32	26		27.16	25.97	24.70	23.59	22.41	21.22	20.03	18.84	17.66	16.47
131	0	52400	85000	289.03	26		27.10	25.89	24.68	23.47	22.26	21.05	19.83	18.62	17.41	16.20
132	0	52600	85000	285.82	26		27.17	25.97	24.77	23.57	22.38	21.18	19.98	18.78	17.58	16.39
133	0	52800	85000	284.88	26		27.00	25.80	24.61	23.41	22.22	21.03	19.83	18.64	17.44	16.25
134	0	53000	85000	284.67	26		26.90	25.71	24.52	23.32	22.13	20.94	19.74	18.55	17.36	16.17
135	0	53200	85000	274.40	26		26.73	25.58	24.43	23.28	22.13	20.98	19.83	18.68	17.53	16.38
136	0	53400	85000	271.40	26		26.67	25.53	24.39	23.25	22.12	20.98	19.84	18.70	17.57	16.43
137	0	53600	85000	267.81	26		26.50	25.38	24.26	23.13	22.01	20.89	19.77	18.65	17.52	16.40
138	0	53800	85000	269.13	26		26.44	25.31	24.19	23.06	21.93	20.80	19.68	18.55	17.42	16.29
139	0	54000	85000	268.49	26		26.42	25.30	24.17	23.05	21.92	20.79	19.67	18.54	17.42	16.29
140	0	54000	85000	268.49	27	* RPT	26.42	25.29	24.17	23.04	21.92	20.79	19.67	18.54	17.42	16.29
141	0	54200	85000	267.60	27		26.47	25.35	24.22	23.10	21.98	20.86	19.74	18.62	17.50	16.37
142	0	54400	85000	268.75	27		26.53	25.40	24.28	23.15	22.02	20.90	19.77	18.64	17.52	16.39
143	0	54600	85000	270.01	27		26.50	25.44	24.31	23.18	22.05	20.92	19.79	18.65	17.52	16.39
144	0	54800	85000	267.23	27		26.59	25.47	24.35	23.23	22.11	20.99	19.87	18.75	17.63	16.51
145	0	55000	85000	264.73	27		26.66	25.55	24.44	23.33	22.22	21.11	20.00	18.89	17.78	16.67
146	0	55200	85000	265.71	27		26.70	25.59	24.47	23.36	22.24	21.13	20.02	18.90	17.79	16.68
147	0	55400	85000	262.67	27		26.63	25.73	24.63	23.53	22.43	21.33	20.23	19.13	18.03	16.92
148	0	55600	85000	263.50	27		26.93	25.83	24.72	23.62	22.51	21.41	20.30	19.20	18.10	16.99
149	0	55000	85000	264.57	29		27.09	25.99	24.88	23.77	22.66	21.55	20.44	19.33	18.22	17.12
150	0	56000	85000	265.05	29		27.21	26.10	24.99	23.88	22.77	21.66	20.55	19.44	18.33	17.21
151	0	56200	85000	262.22	29		27.39	26.30	25.20	24.10	23.00	21.90	20.80	19.70	18.60	17.50
152	0	56400	85000	264.72	29		27.40	26.37	25.26	24.15	23.04	21.93	20.82	19.71	18.60	17.50
153	0	56600	85000	264.36	29		27.69	26.58	25.48	24.37	23.26	22.15	21.04	19.94	18.83	17.72
154	0	56800	85000	260.45	29		27.85	26.73	25.60	24.48	23.35	22.23	21.10	19.90	18.85	17.73
155	0	57000	85000	266.72	29		27.94	26.82	25.70	24.59	23.47	22.35	21.23	20.12	19.00	17.88
156	0	57200	85000	262.56	29		28.10	27.00	25.90	24.80	23.70	22.60	21.50	20.40	19.30	18.20
157	0	57400	85000	260.77	29		28.31	27.21	26.12	25.03	23.94	22.84	21.75	20.56	19.56	18.47
158	0	57600	85000	264.18	29		28.48	27.30	26.19	25.08	23.98	22.87	21.76	20.66	19.55	18.44
159	0	57000	85000	264.70	29		28.63	27.52	26.41	25.30	24.19	23.08	21.97	20.86	19.75	18.65
160	0	58000	85000	260.71	29		28.91	27.62	26.53	25.44	24.34	23.25	22.16	21.06	19.97	18.88
161	0	58000	85000	260.71	29	* RPT	28.92	27.63	26.53	25.44	24.35	23.26	22.16	21.07	19.98	18.88
162	0	58200	85000	260.59	29		28.81	27.72	26.62	25.53	24.44	23.35	22.26	21.16	20.07	18.98
163	0	58400	85000	260.33	29		28.99	27.90	26.80	25.71	24.62	23.53	22.44	21.35	20.26	19.17
164	0	58600	85000	262.59	29		29.11	28.01	26.91	25.81	24.70	23.60	22.50	21.40	20.30	19.20
165	0	58800	85000	262.35	29		29.10	28.00	26.90	25.80	24.70	23.60	22.50	21.40	20.30	19.20
166	0	59000	85000	259.14	29		29.19	28.08	27.00	25.91	24.83	23.74	22.65	21.57	20.48	19.40
167	0	59200	85000	261.01	29		29.21	28.11	27.01	25.92	24.82	23.72	22.62	21.53	20.43	19.33
168	0	59400	85000	262.17	29		29.20	28.10	27.00	25.90	24.80	23.70	22.69	21.59	20.49	19.39
169	0	59600	85000	266.72	29		29.32	28.20	27.08	25.96	24.85	23.73	22.61	21.49	20.37	19.26
170	0	59800	85000	265.19	29		29.40	28.29	27.18	26.07	24.95	23.84	22.73	21.62	20.51	19.40
171	0	60000	85000	264.16	29		29.44	28.33	27.23	26.12	25.01	23.90	22.80	21.69	20.58	19.48
172	0	60200	85000	260.44	29		29.51	28.42	27.32	26.23	25.14	24.05	22.96	21.87	20.77	19.68
173	0	60400	85000	258.02	29		29.55	28.47	27.39	26.31	25.23	24.15	23.07	21.99	20.90	19.82
174	0	60600	85000	256.78	29		29.66	28.59	27.51	26.43	25.36	24.28	23.20	22.13	21.05	19.98
175	0	60000	85000	253.27	29		29.74	28.68	27.62	26.56	25.50	24.43	23.37	22.31	21.25	20.19
176	0	61000	85000	251.66	29		29.93	28.87	27.82	26.76	25.71	24.65	23.60	22.55	21.49	20.44
177	0	61200	85000	251.49	29		30.05	28.99	27.94	26.88	25.83	24.78	23.72	22.67	21.61	20.56
178	0	61400	85000	249.51	29		30.19	29.14	28.10	27.05	26.00	24.96	23.91	22.87	21.82	20.78
179	0	61600	85000	247.55	29		30.32	29.28	28.25	27.21	26.17	25.13	24.10	23.06	22.02	20.98
180	0	61000	85000	247.39	29		30.37	29.34	28.30	27.26	26.23	25.19	24.16	23.12	22.08	21.04
181	0	62000	85000	244.80	29		30.51	29.48	28.46	27.43	26.41	25.38	24.35	23.31	22.27	21.23
182	0	62200	85000	242.60	29		30.63	29.60	28.58	27.56	26.54	25.52	24.49	23.47	22.44	21.40

103	"	62400	85000	242.05	29		31.03	30.02	29.00	27.99	26.97	25.96	24.95	23.93	22.92	21.90
104	"	62600	85000	242.76	29		31.20	30.28	29.24	28.22	27.21	26.19	25.17	24.15	23.14	22.12
105	"	62800	85000	242.78	29		31.48	30.30	29.36	28.35	27.33	26.31	25.29	24.26	23.26	22.24
106	"	62000	85000	242.70	30	* DPT	31.35	30.30	29.36	28.34	27.32	26.31	25.29	24.27	23.25	22.24
107	"	63000	85000	241.61	30		31.73	30.52	29.50	28.49	27.48	26.47	25.45	24.44	23.43	22.42
108	"	63200	85000	240.12	30		31.62	30.61	29.61	28.60	27.60	26.59	25.58	24.58	23.57	22.56
109	"	63400	85000	239.02	30		31.76	30.75	29.75	28.74	27.74	26.73	25.73	24.72	23.72	22.71
110	"	63700	85000	238.77	30		31.92	30.92	29.92	28.92	27.92	26.92	25.92	24.92	23.92	22.92
111	"	63000	85000	238.55	30		31.93	30.93	29.93	28.94	27.94	26.94	25.94	24.94	23.94	22.94
112	"	64000	85000	238.55	30		32.10	31.10	30.10	29.10	28.10	27.10	26.10	25.10	24.10	23.10
113	"	64200	85000	237.36	30		32.09	31.10	30.10	29.11	28.11	27.12	26.12	25.13	24.13	23.14
114	"	64400	85000	237.56	30		32.19	31.20	30.20	29.20	28.21	27.21	26.22	25.22	24.23	23.23
115	"	64600	85000	238.72	30		32.22	31.22	30.22	29.22	28.22	27.22	26.22	25.22	24.22	23.22
116	"	64800	85000	239.51	30		32.20	31.28	30.28	29.27	28.27	27.26	26.26	25.26	24.25	23.25
117	"	65000	85000	242.49	30		32.37	31.35	30.33	29.32	28.30	27.29	26.27	25.25	24.24	23.22
118	"	65200	85000	244.25	30		32.50	31.48	30.45	29.43	28.41	27.30	26.36	25.33	24.31	23.29
119	"	65400	85000	246.36	30		32.47	31.44	30.41	29.37	28.34	27.31	26.28	25.24	24.21	23.18
120	"	65600	85000	246.12	30		32.62	31.59	30.56	29.53	28.50	27.47	26.43	25.40	24.37	23.34
121	"	65800	85000	246.00	30		32.67	31.64	30.61	29.58	28.55	27.52	26.48	25.45	24.42	23.39
122	"	65800	85000	246.00	31	* DPT	32.67	31.64	30.61	29.58	28.55	27 51	26.48	25.45	24.42	23.39
123	"	66000	85000	246.22	31		32.74	31.71	30.68	29.65	28.62	27.58	26.55	25.52	24.49	23.46
124	"	66200	85000	246.72	31		32.99	31.85	30.82	29.78	28.75	27.72	205		0	66400
125	"	66400	85000	245.57	31		33.11	32.08	31.05	30.02	28.99	27.96	26.93	25.90	24.88	23.85
126	"	66600	85000	242.93	31		33.15	32.14	31.12	30.10	29.08	28.06	27.04	26.03	25.01	23.99
127	"	66800	85000	239.83	31		33.21	32.21	31.20	30.20	29.19	28.19	27.18	26.17	25.17	24.16
128	"	67000	85000	239.19	31		33.25	32.24	31.24	30.24	29.24	28.24	27.23	26.23	25.23	24.23
129	"	67200	85000	239.06	31		33.25	32.25	31.25	30.25	29.24	28.24	27.24	26.24	25.24	24.23
130	"	67400	85000	238.51	31		33.31	32.31	31.31	30.31	29.31	28.31	27.31	26.31	25.31	24.31
131	"	67600	85000	238.21	31		33.28	32.28	31.29	30.29	29.29	28.29	27.29	26.29	25.30	24.30
132	"	67800	85000	238.27	31		33.34	32.34	31.34	30.35	29.35	28.35	27.35	26.35	25.35	24.35

05000 247.27 31

Days Computed on 24712/01

SCOTT GEOPHYSICS LTD

Job # 10 308

LINE 90000 E

Pnt #	STATION #	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP #	RPTS	BOUGUER GRAVITY (gms/cc) 1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
1	0	32000	90000	255.78	34		33.14	32.07	30.99	29.92	28.85	27.78	26.71	25.63	24.56	23.49
2	0	32200	90000	256.70	34		32.90	31.90	30.83	29.75	28.68	27.60	26.52	25.45	24.37	23.30
3	0	32400	90000	258.50	34		32.82	31.73	30.65	29.57	28.48	27.40	26.32	25.23	24.15	23.07
4	0	32600	90000	261.02	34		32.72	31.63	30.53	29.44	28.34	27.25	26.16	25.06	23.97	22.87
5	0	32800	90000	262.50	34		32.67	31.57	30.47	29.37	28.27	27.17	26.07	24.97	23.87	22.77
6	0	33000	90000	262.56	34		32.60	31.48	30.38	29.28	28.18	27.08	25.98	24.88	23.78	22.68
7	0	33200	90000	261.37	34		32.57	31.50	30.40	29.30	28.21	27.11	26.02	24.92	23.83	22.73
8	0	33400	90000	261.76	34		32.57	31.47	30.38	29.28	28.18	27.09	25.99	24.89	23.79	22.70
9	0	33600	90000	264.67	34		32.49	31.38	30.27	29.16	28.05	26.94	25.83	24.72	23.62	22.51
10	0	33800	90000	267.45	34		32.43	31.31	30.19	29.07	27.94	26.82	25.70	24.58	23.46	22.34
11	0	34000	90000	270.39	34		32.22	31.08	29.95	28.82	27.68	26.55	25.42	24.28	23.15	22.02
12	0	34200	90000	270.11	34		32.05	30.92	29.79	28.65	27.52	26.39	25.26	24.13	22.99	21.86
13	0	34400	90000	267.37	34		31.83	30.71	29.59	28.47	27.35	26.23	25.11	23.97	22.87	21.75
14	0	34600	90000	265.73	34		31.69	30.48	29.37	28.25	27.14	26.02	24.91	23.80	22.68	21.57
15	0	34800	90000	265.68	34		31.41	30.29	29.18	28.07	26.95	25.84	24.73	23.61	22.50	21.39
16	0	35000	90000	263.39	34		31.23	30.13	29.02	27.92	26.82	25.71	24.61	23.51	22.40	21.30
17	0	35200	90000	264.31	34		31.10	30.00	28.89	27.78	26.67	25.57	24.46	23.35	22.24	21.13
18	0	35400	90000	262.60	34		30.99	29.89	28.79	27.69	26.59	25.49	24.39	23.29	22.19	21.09
19	0	35600	90000	262.41	34		30.94	29.84	28.74	27.64	26.54	25.44	24.34	23.24	22.14	21.04
20	0	35800	90000	261.38	34		30.90	29.81	28.71	27.62	26.52	25.43	24.33	23.24	22.14	21.04
21	0	36000	90000	260.09	34		30.88	29.79	28.70	27.61	26.52	25.43	24.34	23.25	22.16	21.07
22	0	36200	90000	258.47	34		30.86	29.77	28.69	27.61	26.52	25.44	24.36	23.27	22.19	21.11
23	0	36400	90000	257.02	34		30.80	29.72	28.65	27.57	26.49	25.41	24.34	23.26	22.18	21.10
24	0	36600	90000	257.10	34		30.58	29.50	28.43	27.35	26.27	25.19	24.12	23.04	21.96	20.88
25	0	36800	90000	253.61	34		30.40	29.34	28.27	27.21	26.15	25.09	24.02	22.96	21.90	20.83
26	0	37000	90000	256.00	34		30.21	29.13	28.06	26.99	25.91	24.84	23.77	22.70	21.62	20.55
27	0	37200	90000	256.54	34		29.96	28.79	27.71	26.64	25.56	24.49	23.41	22.34	21.26	20.19
28	0	37200	90000	256.54	33	* RPT*	29.87	28.80	27.72	26.65	25.57	24.50	23.42	22.35	21.27	20.20
29	0	37400	90000	257.64	33		29.50	28.42	27.34	26.26	25.18	24.10	23.02	21.94	20.86	19.78
30	0	37600	90000	259.20	33		29.13	28.05	26.96	25.87	24.79	23.70	22.61	21.53	20.44	19.36
31	0	37800	90000	261.66	33		28.78	27.69	26.59	25.49	24.40	23.30	22.20	21.11	20.01	18.91
32	0	38000	90000	265.86	33		28.46	27.35	26.24	25.12	24.01	22.89	21.78	20.67	19.55	18.44
33	0	38200	90000	267.66	33		28.16	27.04	25.92	24.80	23.68	22.55	21.43	20.31	19.19	18.07
34	0	38400	90000	269.42	33		27.87	26.75	25.62	24.49	23.36	22.24	21.11	19.98	18.85	17.72
35	0	38600	90000	270.56	33		27.63	26.50	25.37	24.23	23.10	21.96	20.83	19.70	18.56	17.43
36	0	38800	90000	269.55	33		27.45	26.32	25.19	24.06	22.93	21.80	20.67	19.54	18.41	17.28
37	0	39000	90000	267.10	33		27.31	26.19	25.07	23.95	22.83	21.71	20.59	19.47	18.35	17.24
38	0	39200	90000	263.56	33		27.21	26.10	25.00	23.89	22.79	21.68	20.58	19.48	18.37	17.27
39	0	39400	90000	262.78	33		27.15	26.05	24.95	23.85	22.75	21.65	20.54	19.44	18.34	17.24
40	0	39600	90000	261.54	33		27.11	26.02	24.92	23.83	22.73	21.63	20.54	19.44	18.35	17.25
41	0	39800	90000	260.88	33		27.11	26.01	24.92	23.83	22.73	21.64	20.55	19.45	18.36	17.27
42	0	40000	90000	262.90	33		27.15	26.05	24.95	23.84	22.74	21.64	20.54	19.44	18.33	17.23
43	0	40200	90000	263.80	33		27.21	26.11	25.00	23.90	22.79	21.68	20.58	19.49	18.39	17.26
44	0	40400	90000	265.68	33		27.40	26.29	25.17	24.06	22.95	21.83	20.72	19.61	18.49	17.38
45	0	40600	90000	260.53	33		27.60	26.48	25.35	24.23	23.10	21.98	20.85	19.73	18.60	17.48
46	0	40800	90000	267.26	33		27.83	26.71	25.59	24.47	23.35	22.23	21.11	19.99	18.87	17.75
47	0	41000	90000	264.30	33		28.04	26.94	25.83	24.72	23.61	22.50	21.40	20.29	19.18	18.07
48	0	41200	90000	261.36	33		28.30	27.20	26.11	25.01	23.92	22.82	21.73	20.63	19.54	18.44
49	0	41400	90000	260.21	33		28.65	27.56	26.47	25.38	24.29	23.20	22.11	21.02	19.93	18.84
50	0	41600	90000	259.45	33		28.85	27.76	26.68	25.59	24.50	23.41	22.33	21.24	20.15	19.06

51	0	41800	90000	261.39	33		29.22	28.12	27.03	25.93	24.84	23.74	22.65	21.55	20.46	19.36
52	0	42000	90000	260.06	33		29.16	28.07	26.98	25.90	24.80	23.71	22.61	21.52	20.42	19.33
53	0	42200	90000	263.59	33		29.38	28.28	27.19	26.09	24.99	23.90	22.80	21.71	20.61	19.52
54	0	42200	90000	263.59	32	* RPT	29.22	28.11	27.01	25.90	24.80	23.69	22.59	21.48	20.38	19.27
55	0	42400	90000	263.94	32		29.27	28.17	27.06	25.96	24.85	23.75	22.64	21.53	20.43	19.32
56	0	42600	90000	265.16	32		29.40	28.29	27.18	26.07	24.96	23.85	22.74	21.63	20.52	19.41
57	0	42000	90000	267.32	32		29.57	28.45	27.33	26.21	25.09	23.97	22.85	21.73	20.61	19.49
58	0	43000	90000	266.06	32		29.49	28.38	27.26	26.14	25.02	23.90	22.78	21.66	20.54	19.42
59	0	43200	90000	272.04	32		29.76	28.64	27.52	26.40	25.28	24.16	23.04	21.92	20.80	19.68
60	0	43400	90000	271.74	32		29.74	28.62	27.50	26.38	25.26	24.14	23.02	21.90	20.78	19.66
61	0	43600	90000	273.07	32		29.84	28.72	27.60	26.48	25.36	24.24	23.12	22.00	20.88	19.76
62	0	43800	90000	274.59	32		29.96	28.84	27.72	26.60	25.48	24.36	23.24	22.12	21.00	19.88
63	0	44000	90000	275.67	32		30.04	28.92	27.80	26.68	25.56	24.44	23.32	22.20	21.08	19.96
64	0	44200	90000	277.98	32		30.23	29.11	27.99	26.87	25.75	24.63	23.51	22.39	21.27	20.15
65	0	44400	90000	283.66	32		30.64	29.52	28.40	27.28	26.16	25.04	23.92	22.80	21.68	20.56
66	0	44600	90000	284.99	32		29.93	28.54	27.34	26.15	24.95	23.76	22.56	21.37	20.17	18.98
67	0	44800	90000	285.46	32		29.95	28.15	26.95	25.76	24.56	23.36	22.17	20.97	19.77	18.58
68	0	45000	90000	284.43	32		29.92	27.72	26.53	25.34	24.15	22.95	21.76	20.57	19.38	18.19
69	0	45200	90000	286.28	32		29.52	27.32	26.12	24.92	23.72	22.52	21.32	20.12	18.92	17.72
70	0	45400	90000	289.52	32		29.10	26.89	25.67	24.46	23.25	22.03	20.82	19.61	18.39	17.18
71	0	45600	90000	287.01	32		27.90	26.60	25.40	24.20	22.99	21.79	20.59	19.38	18.18	16.98
72	0	45800	90000	283.91	32		27.66	26.47	25.28	24.09	22.90	21.71	20.52	19.33	18.14	16.95
73	0	46000	90000	282.25	32		27.51	26.33	25.14	23.96	22.78	21.59	20.41	19.23	18.05	16.86
74	0	46200	90000	279.83	32		27.27	26.12	24.94	23.77	22.60	21.42	20.25	19.08	17.91	16.73
75	0	46200	90000	279.83	20	* RPT	27.27	26.12	24.94	23.77	22.60	21.43	20.25	19.08	17.91	16.73
76	0	46400	90000	274.18	20		27.05	25.90	24.75	23.60	22.46	21.31	20.16	19.01	17.86	16.71
77	0	46600	90000	271.96	20		26.77	25.64	24.50	23.36	22.22	21.08	19.94	18.80	17.66	16.52
78	0	46800	90000	271.74	20		26.41	25.29	24.13	22.99	21.85	20.72	19.58	18.44	17.30	16.16
79	0	47000	90000	270.22	20		26.18	24.98	23.83	22.70	21.57	20.43	19.30	18.17	17.04	15.90
80	0	47200	90000	267.80	20		25.83	24.71	23.59	22.47	21.34	20.22	19.10	17.90	16.85	15.73
81	0	47400	90000	267.47	20		25.67	24.55	23.42	22.30	21.18	20.06	18.94	17.82	16.70	15.58
82	0	47600	90000	264.71	20		25.39	24.28	23.17	22.06	20.95	19.84	18.73	17.62	16.51	15.41
83	0	47800	90000	262.31	20		25.07	23.97	22.87	21.77	20.67	19.57	18.48	17.38	16.28	15.18
84	0	48000	90000	259.94	20		24.72	23.63	22.54	21.45	20.36	19.27	18.18	17.09	16.00	14.91
85	0	48200	90000	259.44	20		24.48	23.39	22.30	21.21	20.13	19.04	17.95	16.86	15.78	14.69
86	0	48400	90000	258.30	20		24.21	23.12	22.04	20.96	19.88	18.79	17.71	16.63	15.54	14.46
87	0	48600	90000	260.14	20		24.06	22.99	21.88	20.79	19.70	18.61	17.52	16.43	15.34	14.25
88	0	48000	90000	259.14	20		23.94	22.85	21.76	20.68	19.59	18.51	17.42	16.33	15.25	14.16
89	0	49000	90000	258.80	20		23.91	22.82	21.74	20.65	19.57	18.49	17.40	16.32	15.23	14.15
90	0	49200	90000	258.37	20		23.88	22.80	21.72	20.63	19.55	18.47	17.39	16.30	15.22	14.14
91	0	49400	90000	256.25	20		23.85	22.78	21.70	20.63	19.55	18.48	17.41	16.33	15.26	14.18
92	0	49600	90000	257.56	20		23.87	22.79	21.71	20.63	19.55	18.47	17.40	16.32	15.24	14.16
93	0	49000	90000	257.43	20		23.94	22.86	21.78	20.70	19.62	18.54	17.46	16.38	15.31	14.23
94	0	50000	90000	256.97	20		24.09	23.01	21.94	20.86	19.78	18.71	17.63	16.55	15.48	14.40
95	0	50000	90000	256.97	4	* RPT	24.09	23.01	21.94	20.86	19.78	18.71	17.63	16.55	15.48	14.40
96	0	50000	90000	256.97	8	* RPT	24.10	23.03	21.95	20.87	19.80	18.72	17.64	16.57	15.47	14.41
97	0	50000	90000	256.97	6	* RPT	24.09	23.01	21.94	20.86	19.78	18.71	17.63	16.55	15.48	14.40
98	0	50000	90000	256.97	19	* RPT	24.09	23.01	21.94	20.86	19.78	18.71	17.63	16.55	15.48	14.40
99	0	50000	90000	256.97	9	* RPT	24.10	23.02	21.94	20.86	19.77	18.71	17.63	16.56	15.48	14.40
100	0	50000	90000	256.97	8	* RPT	24.09	23.01	21.94	20.86	19.78	18.70	17.63	16.55	15.47	14.40
101	0	50200	90000	256.71	19		24.15	23.07	21.99	20.92	19.84	18.77	17.69	16.62	15.54	14.46
102	0	50400	90000	256.60	19		24.09	23.12	22.12	21.04	19.97	18.89	17.82	16.74	15.66	14.59
103	0	50600	90000	258.99	19		24.56	23.47	22.38	21.30	20.21	19.13	18.04	16.96	15.87	14.78
104	0	50800	90000	259.40	19		24.72	23.64	22.55	21.46	20.37	19.29	18.20	17.11	16.03	14.94
105	0	51000	90000	260.87	19		24.86	23.76	22.67	21.58	20.48	19.39	18.30	17.20	16.11	15.02
106	0	51200	90000	259.92	19		25.05	23.96	22.87	21.78	20.69	19.60	18.51	17.42	16.33	15.24
107	0	51400	90000	257.00	19		25.04	23.96	22.88	21.80	20.72	19.64	18.56	17.48	16.40	15.32
108	0	51600	90000	258.40	19		25.13	24.05	22.96	21.88	20.80	19.71	18.63	17.55	16.46	15.38
109	0	51000	90000	260.41	19		25.24	24.15	23.06	21.97	20.80	19.79	18.70	17.61	16.51	15.42
110	0	52000	90000	261.02	19		25.34	24.24	23.15	22.05	20.96	19.87	18.77	17.68	16.58	15.49
111	0	52200	90000	261.05	19		25.42	24.33	23.23	22.13	21.03	19.94	18.84	17.74	16.65	15.55
112	0	52400	90000	264.59	19		25.51	24.40	23.29	22.10	21.07	19.96	18.86	17.75	16.64	15.53
113	0	52600	90000	266.02	19		25.57	24.46	23.34	22.23	21.11	20.00	18.88	17.77	16.65	15.54
114	0	52000	90000	262.71	19		25.70	24.58	23.46	22.34	21.22	20.09	18.97	17.85	16.73	15.61
115	0	53000	90000	265.03	19		25.62	24.50	23.47	22.35	21.24	20.13	17.02	17.91	16.80	15.69
116	0	53200	90000	265.00	19		25.05	24.73	23.62	22.51	21.40	20.29	17.18	18.07	16.96	15.85

117	"	53400	90000	263.71	19		25.96	24.05	23.75	22.54	21.53	20.43	19.33	18.25	17.11	16.01	
118	"	53600	90000	267.52	20		26.05	24.93	23.80	22.68	21.56	20.44	19.32	18.20	17.00	15.96	
119	"	53600	90000	267.52	19	7 RPT	26.04	24.92	23.80	22.68	21.55	20.43	19.31	18.19	17.07	15.95	
120	"	53800	90000	260.07	20		26.13	25.01	23.89	22.76	21.63	20.51	19.38	18.25	17.13	16.00	
121	"	54000	90000	267.01	20		26.32	25.20	24.00	22.97	21.85	20.73	19.61	18.49	17.37	16.25	
122	"	54200	90000	260.91	20		26.56	25.43	24.31	23.18	22.05	20.93	19.80	18.67	17.54	16.42	
123	"	54400	90000	269.37	20		26.91	25.58	24.45	23.33	22.20	21.07	19.94	18.81	17.68	16.55	
124	"	54600	90000	270.14	20		26.89	25.75	24.62	23.49	22.36	21.22	20.09	18.96	17.83	16.70	
125	"	54800	90000	269.44	20		27.02	25.89	24.76	23.63	22.50	21.37	20.24	19.11	17.98	16.85	
126	"	55000	90000	266.31	20		27.00	25.96	24.84	23.73	22.61	21.50	20.38	19.26	18.15	17.03	
127	"	55200	90000	264.66	20		27.30	26.17	25.08	23.98	22.87	21.76	20.65	19.54	18.43	17.32	
128	"	55400	90000	263.03	20		27.40	26.37	25.27	24.16	23.06	21.95	20.85	19.74	18.63	17.53	
129	"	55600	90000	262.04	20		27.53	26.53	25.42	24.32	23.22	22.12	21.02	19.92	18.82	17.74	
130	"	55800	90000	263.41	20		27.80	26.69	25.59	24.48	23.38	22.28	21.17	20.07	18.96	17.86	
131	"	56000	90000	261.66	20		27.96	26.86	25.76	24.67	23.57	22.47	21.38	20.20	19.18	18.09	
132	"	56200	90000	259.55	20		28.17	27.08	25.99	24.90	23.82	22.73	21.64	20.55	19.47	18.38	
133	"	56400	90000	258.17	20		28.22	27.13	26.05	24.97	23.89	22.81	21.72	20.64	19.56	18.48	
134	"	56600	90000	257.60	20		28.40	27.32	26.24	25.16	24.00	23.00	21.92	20.84	19.76	18.68	
135	"	56800	90000	256.55	20		28.60	27.52	26.45	25.37	24.30	23.22	22.15	21.07	20.00	18.92	
136	"	57000	90000	255.30	20		28.92	27.65	26.58	25.51	24.44	23.37	22.30	21.23	20.16	19.09	
137	"	57200	90000	255.47	20		29.04	27.77	26.70	25.63	24.56	23.49	22.42	21.35	20.20	19.21	
138	"	57200	90000	255.47	21	7 RPT	29.08	27.96	26.67	25.62	24.55	23.48	22.41	21.34	20.27	19.20	
139	"	57400	90000	252.72	21		29.26	27.90	26.84	25.70	24.72	23.66	22.60	21.54	20.40	19.43	
140	"	57600	90000	256.96	21		29.00	28.00	26.93	25.05	24.77	23.69	22.62	21.54	20.46	19.39	
141	"	57800	90000	252.61	21		29.17	28.11	27.05	25.77	24.93	23.87	22.81	21.76	20.70	19.64	
142	"	58000	90000	250.74	21		29.10	28.12	27.08	26.03	24.90	23.93	22.80	21.83	20.78	19.73	
143	"	58200	90000	252.07	21		29.29	28.23	27.17	26.12	25.06	24.00	22.95	21.89	20.83	19.78	
144	"	58400	90000	251.52	21		29.37	28.38	27.28	26.23	25.17	24.12	23.07	22.01	20.96	19.90	
145	"	58600	90000	250.00	21		29.52	28.47	27.42	26.37	25.32	24.20	23.23	22.10	21.13	20.06	
146	"	58800	90000	250.20	21		29.52	28.67	27.62	26.57	25.52	24.47	23.42	22.30	21.33	20.28	
147	"	59000	90000	248.94	21		29.07	28.03	27.79	26.74	25.70	24.66	23.61	22.57	21.53	20.48	
148	"	59200	90000	248.25	21		29.98	28.94	27.90	26.05	25.81	24.77	23.73	22.69	21.65	20.61	
149	"	59400	90000	248.00	21		30.17	29.13	28.09	27.05	26.01	24.97	23.93	22.89	21.85	20.81	
150	"	59600	90000	249.07	21		30.29	29.25	28.20	27.16	26.11	25.07	24.03	22.98	21.94	20.90	
151	"	59800	90000	248.54	21		30.41	29.36	28.32	27.28	26.24	25.20	24.16	23.11	22.07	21.03	
152	"	60000	90000	250.00	21		30.50	29.53	28.48	27.43	26.39	25.34	24.29	23.24	22.19	21.14	
153	"	60200	90000	250.64	21		30.67	29.62	28.57	27.52	26.47	25.42	24.37	23.32	22.27	21.21	
154	"	60400	90000	249.69	21		30.74	29.68	28.63	27.59	26.54	25.50	24.45	23.40	22.36	21.31	
155	"	60600	90000	249.90	21		30.77	29.73	28.68	27.63	26.58	25.54	24.49	23.44	22.39	21.35	
156	"	60800	90000	250.62	21		30.85	29.80	28.75	27.70	26.65	25.60	24.55	23.50	22.45	21.39	
157	"	61000	90000	251.64	21		30.00	29.02	28.77	27.71	26.66	25.61	24.55	23.50	22.44	21.39	
158	"	61000	90000	251.64	24	3 RPT	30.80	29.82	28.77	27.72	26.66	25.61	24.55	23.50	22.44	21.39	
159	"	61200	90000	249.95	24		30.82	29.87	28.82	27.77	26.73	25.68	24.63	23.58	22.54	21.49	
160	"	61400	90000	248.33	24		31.02	29.97	28.93	27.89	26.85	25.81	24.77	23.73	22.69	21.65	
161	"	61600	90000	246.60	24		31.05	30.01	28.98	27.95	26.91	25.88	24.84	23.81	22.78	21.74	
162	"	61800	90000	249.95	24		31.12	30.07	29.02	27.98	26.93	25.88	24.83	23.79	22.74	21.69	
163	"	62000	90000	247.40	24		31.24	30.20	29.16	28.12	27.09	26.05	25.01	23.96	22.94	21.90	
164	"	62200	90000	245.86	24		31.29	30.24	29.21	28.18	27.15	26.12	25.09	24.06	23.03	21.99	
165	"	62400	90000	246.63	24		31.40	30.36	29.33	28.30	27.26	26.23	25.20	24.16	23.13	22.07	
166	"	62600	90000	246.40	24		31.47	30.44	29.41	28.37	27.34	26.31	25.27	24.24	23.21	22.10	
167	"	62800	90000	247.60	24		31.52	30.40	29.45	28.41	27.37	26.33	25.29	24.26	23.22	22.10	
168	"	63000	90000	249.05	24		31.59	30.55	29.50	28.46	27.42	26.37	25.33	24.30	23.24	22.20	
169	"	63200	90000	240.06	24		31.64	30.60	29.55	28.51	27.47	26.42	25.38	24.34	23.30	22.25	
170	"	63400	90000	240.70	24		31.76	30.72	29.60	28.63	27.59	26.55	25.51	24.46	23.42	22.38	
171	"	63600	90000	245.42	24		31.84	30.81	29.78	28.75	27.72	26.67	25.66	24.64	23.61	22.56	
172	"	63800	90000	242.38	24		31.93	30.92	29.90	28.89	27.87	26.86	25.84	24.82	23.81	22.79	
173	"	64000	90000	240.00	24		32.04	31.00	29.99	28.99	27.98	26.98	25.97	24.96	23.98	22.98	
174	"	64200	90000	238.12	24		32.13	31.12	30.13	29.13	28.14	27.14	26.14	25.14	24.14	23.15	
175	"	64400	90000	237.16	24		32.18	31.18	30.19	29.20	28.20	27.21	26.21	25.22	24.23	23.23	
176	"	64600	90000	236.97	24		32.30	31.31	30.32	29.32	28.33	27.34	26.34	25.35	24.36	23.36	
177	"	64800	90000	238.32	24		32.37	31.37	30.39	29.39	28.39	27.39	26.39	25.40	24.40	23.40	
178	"	65000	90000	237.00	25		32.40	31.50	30.50	29.50	28.51	27.51	26.51	25.52	24.52	23.52	
179	"	65000	90000	237.00	24	5 RPT	32.51	31.51	30.51	29.52	28.52	27.52	26.52	25.53	24.53	23.53	
180	"	65200	90000	236.31	25		32.63	31.64	30.65	29.66	28.67	27.68	26.67	25.70	24.71	23.72	
181	"	65400	90000	235.43	25		32.77	31.70	30.79	29.81	28.82	27.83	26.84	25.86	24.87	23.88	
182	"	65600	90000	234.98	25		32.81	31.84	30.84	29.88	28.88	27.91	26.88	25.94	24.95	23.98	

10?	0	55000	90000	234.00	25	32.00	31.01	30.02	29.04	28.07	27.07	26.09	25.02	24.03
10?	0	66000	90000	236.??	25	32.??	31.??	30.??	29.??	28.??	27.??	26.??	25.??	24.??
10?	0	66298	90000	238.71	25	32.??	31.??	30.??	29.??	28.??	27.??	26.??	25.01	24.02
10?	0	66400	90000	239.??	25	33.02	32.02	31.02	30.01	29.01	28.01	27.00	26.00	25.00	23.??
10?	0	66600	90000	230.02	25	33.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	24.00
10?	0	66800	90000	241.??	25	33.14	32.13	31.11	30.10	29.07	28.00	27.07	26.07	25.05	24.04
10?	0	67000	90000	244.31	25	33.15	32.13	31.10	30.08	29.06	28.03	27.01	25.??	24.??	23.??

Data Computed on 24/12/01

SOLAR GEOPHYSICS & CO

Job # 15 308

LINE 95000 E

STATION	GRID NORTH	GRID EAST	ELEVATION (metres)	LOOP	RPTS	BOUGUER GRAVITY (gms/cc) 1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
1	36000	95000	250.03	23		27.07	26.02	25.78	24.73	23.60	22.63	21.59	20.54	19.49	18.44
2	36200	95000	250.74	23		26.85	26.60	25.55	24.50	23.45	22.40	21.34	20.29	19.24	18.19
3	36400	95000	249.01	23		27.41	26.37	25.32	24.28	23.24	22.19	21.15	20.11	19.06	18.02
4	36600	95000	249.99	23		27.20	26.15	25.11	24.06	23.01	21.96	20.92	19.87	18.82	17.77
5	36800	95000	247.74	23		26.93	25.89	24.86	23.82	22.78	21.74	20.70	19.67	18.63	17.59
6	37000	95000	249.61	23		26.67	25.62	24.58	23.53	22.48	21.44	20.39	19.35	18.30	17.25
7	37200	95000	251.27	23		26.41	25.36	24.31	23.26	22.20	21.15	20.10	19.04	17.99	16.94
8	37400	95000	250.75	23		26.26	25.21	24.16	23.11	22.05	21.00	19.95	18.90	17.85	16.80
9	37600	95000	249.84	23		26.09	25.04	24.00	22.95	21.90	20.86	19.81	18.76	17.71	16.67
10	37800	95000	250.85	23		26.00	24.96	23.91	22.86	21.81	20.76	19.72	18.67	17.62	16.57
11	38000	95000	248.67	23		25.86	24.81	23.57	22.53	21.49	20.44	19.40	18.36	17.32	16.28
12	38000	95000	248.67	22	* RPT	25.86	24.81	23.57	22.53	21.49	20.44	19.40	18.36	17.32	16.28
13	38200	95000	247.54	22		25.72	24.50	23.55	22.51	21.47	20.43	19.40	18.36	17.32	16.28
14	38400	95000	248.58	22		25.61	24.57	23.52	22.48	21.44	20.40	19.36	18.31	17.27	16.23
15	38600	95000	249.35	22		25.59	24.58	23.55	22.51	21.46	20.42	19.37	18.32	17.28	16.24
16	38800	95000	250.14	22		25.72	24.70	23.66	22.61	21.56	20.51	19.46	18.41	17.37	16.32
17	39000	95000	248.20	22		25.72	24.00	23.84	22.00	21.76	20.72	17.68	18.64	17.60	16.56
18	39200	95000	250.59	22		26.00	25.02	23.98	22.93	21.88	20.83	19.70	18.73	17.68	16.63
19	39400	95000	250.43	22		26.10	25.13	24.07	23.04	21.99	20.94	19.89	18.84	17.79	16.74
20	39600	95000	251.14	22		26.29	25.23	24.10	23.13	22.08	21.02	19.97	18.92	17.87	16.81
21	39800	95000	249.57	22		26.33	25.28	24.24	23.19	22.15	21.10	20.05	19.01	17.96	16.92
22	40000	95000	252.12	22		26.38	25.24	24.19	23.13	22.07	21.02	19.96	18.90	17.85	16.77
23	40200	95000	254.49	22		26.33	25.15	24.00	23.02	21.95	20.88	19.82	18.75	17.68	16.62
24	40400	95000	257.18	22		26.19	25.02	23.94	22.86	21.79	20.71	19.63	18.55	17.48	16.40
25	40600	95000	257.24	22		26.02	24.94	23.86	22.78	21.71	20.63	19.55	18.47	17.39	16.32
26	40800	95000	259.95	22		25.94	24.65	23.56	22.47	21.38	20.29	19.20	18.11	17.02	15.93
27	41000	95000	261.74	22		25.52	24.42	23.32	22.23	21.13	20.03	18.94	17.84	16.74	15.65
28	41200	95000	263.33	22		25.20	24.10	23.07	21.97	20.87	19.76	18.66	17.56	16.45	15.35
29	41400	95000	260.04	22		25.12	24.03	22.94	21.84	20.75	19.66	18.56	17.47	16.38	15.28
30	41600	95000	265.74	22		24.94	23.83	22.71	21.60	20.49	19.37	18.26	17.15	16.03	14.92
31	41800	95000	265.94	22		24.81	23.69	22.58	21.46	20.35	19.23	18.12	17.00	15.89	14.77
32	42000	95000	263.05	22		24.66	23.55	22.45	21.34	20.23	19.13	18.02	16.92	15.81	14.71
33	42000	95000	263.05	10	* RPT	24.66	23.55	22.45	21.34	20.23	19.13	18.02	16.92	15.81	14.71
34	42200	95000	262.02	10		24.42	23.32	22.22	21.12	20.02	18.93	17.83	16.73	15.63	14.53
35	42400	95000	263.37	10		24.29	23.19	22.08	20.98	19.88	18.77	17.67	16.57	15.46	14.36
36	42600	95000	265.53	10		24.35	23.23	22.12	21.01	19.90	18.78	17.67	16.56	15.44	14.33
37	42800	95000	266.61	10		24.32	23.20	22.09	20.97	19.85	18.73	17.62	16.50	15.38	14.26
38	43000	95000	267.73	10		24.40	23.30	22.19	21.06	19.94	18.81	17.69	16.57	15.45	14.33
39	43200	95000	270.26	10		24.51	23.37	22.24	21.11	19.97	18.84	17.71	16.58	15.44	14.31
40	43400	95000	275.25	10		24.64	23.49	22.33	21.18	20.02	18.89	17.72	16.56	15.41	14.26
41	43600	95000	277.03	10		24.75	23.59	22.43	21.27	20.11	18.95	17.78	16.62	15.46	14.30
42	43800	95000	272.07	10		24.92	23.70	22.64	21.50	20.36	19.22	18.08	16.94	15.80	14.66
43	44000	95000	270.25	10		25.11	24.08	22.87	21.74	20.61	19.47	18.34	17.21	16.07	14.94
44	44200	95000	270.92	10		25.36	24.22	23.09	21.95	20.82	19.68	18.55	17.41	16.28	15.14
45	44400	95000	270.24	10		25.51	24.37	23.24	22.10	20.97	19.83	18.69	17.56	16.42	15.29
46	44600	95000	269.28	10		25.61	24.51	23.38	22.26	21.12	20.00	18.87	17.73	16.62	15.49
47	44800	95000	269.37	10		25.61	24.49	23.36	22.23	21.10	19.97	18.84	17.71	16.58	15.45
48	45000	95000	264.31	10		25.56	24.45	23.34	22.23	21.12	20.02	18.91	17.80	16.69	15.58
49	45200	95000	266.17	10		25.47	24.32	23.20	22.07	20.97	19.85	18.74	17.62	16.51	15.39
50	45400	95000	260.86	10		25.20	24.07	22.94	21.82	20.69	19.56	18.44	17.31	16.18	15.05

	0	45800	95000	269.24	17		24 [illegible]	23.00	22.07	21.24	20.41	19 [illegible]	18.16	17.03	15.70	14.27
	0	45900	95000	270.40	17		24 [illegible]	23.43	22.49	21.16	20.03	18 [illegible]	17.76	16.63	15.40	14.36
53	0	46000	95000	271.12	18		24.00	23.07	21.93	20.79	19.66	18.52	17.39	16.25	15.11	13.90
54	0	46200	95000	270.13	18		23.85	22.81	21.68	20.55	19.42	18.29	17.15	16.02	14.87	13.76
55	0	46400	95000	272.00	18		23.70	22.64	21.50	20.36	19.22	18.00	16.94	15.80	14.66	13.52
	0	46400	95000	272.00	17	* RPT	23.70	22.64	21.50	20.36	19.22	18.00	16.94	15.80	14.66	13.52
57	0	46600	95000	270.56	17		23.50	22.47	21.33	20.20	19.06	17.93	16.80	15.66	14.53	13.40
58	0	46800	95000	271.16	17		23.30	22.25	21.11	19.97	18.84	17.70	16.56	15.43	14.29	13.15
59	0	47000	95000	269.00	17		23.25	22.12	20.99	19.86	18.74	17.61	16.48	15.36	14.23	13.10
60	0	47200	95000	267.07	17		23.02	21.90	20.78	19.66	18.54	17.42	16.30	15.18	14.06	12.94
61	0	47400	95000	266.10	17		22.81	21.70	20.58	19.46	18.35	17.23	16.12	15.00	13.89	12.79
62	0	47600	95000	264.80	17		22.66	21.55	20.44	19.33	18.22	17.11	16.00	14.89	13.78	12.67
63	0	47800	95000	267.16	17		22.60	21.56	20.44	19.32	18.20	17.08	15.96	14.84	13.72	12.60
64	0	48000	95000	264.39	17		22.52	21.41	20.30	19.20	18.09	16.98	15.87	14.76	13.66	12.55
65	0	48200	95000	264.80	17		22.50	21.44	20.33	19.22	18.11	17.00	15.89	14.78	13.67	12.56
66	0	48400	95000	266.68	17		22.72	21.60	20.49	19.37	18.25	17.13	16.02	14.90	13.78	12.66
67	0	48600	95000	271.41	17		22.85	21.71	20.58	19.44	18.30	17.16	16.03	14.89	13.75	12.61
68	0	48800	95000	273.74	17		22.92	21.77	20.62	19.47	18.33	17.18	16.03	14.89	13.74	12.59
69	0	49000	95000	273.61	17		22.90	21.84	20.69	19.54	18.37	17.23	16.10	14.93	13.81	12.66
70	0	49200	95000	272.09	17		22.94	21.79	20.65	19.51	18.37	17.23	16.09	14.95	13.81	12.67
71	0	49400	95000	269.17	17		22.87	21.84	20.71	19.50	18.45	17.32	16.20	15.07	13.94	12.81
72	0	49600	95000	267.40	17		23.05	21.93	20.81	19.60	18.56	17.44	16.32	15.20	14.00	12.96
73	0	49800	95000	265.42	17		23.14	22.03	20.92	19.80	18.69	17.58	16.47	15.35	14.24	13.13
74	0	50000	95000	265.72	7		23.34	22.22	21.10	19.99	18.80	17.76	16.65	15.54	14.42	13.31
75	0	50000	95000	265.72	7	* RPT	23.34	22.22	21.11	20.00	18.80	17.77	16.66	15.55	14.43	13.32
76	0	50000	95000	265.72	8	* RPT	23.34	22.22	21.11	20.00	18.80	17.77	16.66	15.55	14.43	13.32
77	0	50000	95000	265.72	10	* RPT	23.35	22.23	21.12	20.01	18.80	17.78	16.66	15.55	14.44	13.32
78	0	50000	95000	265.72	9	* RPT	23.35	22.23	21.12	20.01	18.80	17.78	16.66	15.55	14.44	13.32
79	0	50000	95000	265.72	17	* RPT	23.35	22.23	21.12	20.01	18.80	17.78	16.66	15.55	14.44	13.32
80	0	50200	95000	265.11	10		23.49	22.37	21.26	20.15	19.04	17.93	16.82	15.71	14.60	13.49
81	0	50400	95000	266.02	10		23.81	22.69	21.58	20.46	19.34	18.22	17.10	15.98	14.87	13.75
82	0	50600	95000	265.64	10		24.11	23.02	21.91	20.80	19.69	18.57	17.46	16.35	15.23	14.12
83	0	50800	95000	266.25	10		24.43	23.32	22.20	21.09	17.97	18.85	17.74	16.62	15.51	14.39
84	0	51000	95000	266.10	10		24.70	23.58	22.47	21.35	20.23	19.12	18.00	16.87	15.77	14.66
85	0	51200	95000	262.17	10		24.97	23.87	22.77	21.67	20.57	19.47	18.37	17.27	16.18	15.08
86	0	51400	95000	262.30	10		25.26	24.12	23.02	21.92	20.82	19.73	18.63	17.53	16.43	15.33
87	0	51600	95000	260.54	10		25.49	24.39	23.30	22.21	21.12	20.03	18.93	17.84	16.75	15.66
88	0	51800	95000	257.26	10		25.71	24.63	23.55	22.47	21.40	20.32	19.24	18.16	17.08	16.00
89	0	52000	95000	256.50	10		25.97	24.90	23.82	22.75	21.67	20.60	19.52	18.45	17.37	16.30
90	0	52200	95000	256.19	10		26.36	25.29	24.22	23.14	22.07	20.99	19.92	18.85	17.77	16.70
91	0	52400	95000	255.57	10		26.66	25.59	24.52	23.45	22.38	21.30	20.23	19.16	18.09	17.02
92	0	52600	95000	254.21	10		26.90	25.91	24.85	23.78	22.71	21.65	20.58	19.52	18.45	17.39
93	0	52800	95000	253.46	10		27.21	26.15	25.09	24.03	22.96	21.90	20.84	19.78	18.72	17.65
94	0	53000	95000	252.85	10		27.54	26.40	25.42	24.36	23.30	22.24	21.19	20.13	19.07	18.01
95	0	53200	95000	251.24	10		27.85	26.80	25.75	24.69	23.64	22.59	21.54	20.48	19.43	18.38
96	0	53400	95000	250.86	10		28.20	27.14	26.09	25.04	23.99	22.94	21.89	20.84	19.79	18.73
97	0	53600	95000	250.16	10		28.51	27.49	26.42	25.37	24.32	23.27	22.22	21.18	20.13	19.08
98	0	53800	95000	249.40	10		28.92	27.88	26.83	25.79	24.74	23.69	22.65	21.60	20.56	19.51
99	0	54000	95000	252.67	10		29.27	28.23	27.17	26.11	25.06	24.00	22.94	21.88	20.82	19.76
100	0	54000	95000	252.67	15	* RPT	29.27	28.23	27.17	26.12	25.06	24.00	22.94	21.88	20.82	19.76
101	0	54200	95000	253.04	15		29.76	28.70	27.64	26.58	25.52	24.46	23.39	22.33	21.27	20.21
102	0	54400	95000	252.55	15		30.07	29.01	27.96	26.90	25.84	24.78	23.72	22.66	21.60	20.55
103	0	54600	95000	253.53	15		30.47	29.43	28.38	27.30	26.24	25.18	24.11	23.05	21.99	20.92
104	0	54800	95000	254.83	15		30.87	29.80	28.73	27.66	26.60	25.53	24.46	23.39	22.32	21.26
105	0	55000	95000	255.61	15		31.27	30.19	29.12	28.03	26.98	25.91	24.84	23.77	22.70	21.62
106	0	55230	95000	255.11	15		31.80	30.73	29.66	28.59	27.52	26.45	25.38	24.31	23.24	22.17
107	0	55400	95000	255.93	15		32.09	31.01	29.93	28.86	27.79	26.71	25.64	24.57	23.50	22.42
108	0	55600	95000	260.20	15		32.50	31.41	30.32	29.23	28.14	27.05	25.96	24.87	23.78	22.69
109	0	55800	95000	262.20	15		32.87	31.78	30.68	29.58	28.48	27.38	26.28	25.18	24.08	22.98
110	0	56000	95000	264.00	15		33.23	32.12	31.01	29.91	28.80	27.69	26.59	25.48	24.37	23.27
111	0	56200	95000	260.76	15		33.53	32.44	31.33	30.25	29.16	28.07	26.97	25.88	24.78	23.69
112	0	56400	95000	265.43	15		33.91	32.80	31.69	30.57	29.46	28.35	27.23	26.12	25.01	23.90
113	0	56600	95000	267.93	15		34.27	33.15	32.03	30.91	29.79	28.66	27.54	26.41	25.29	24.17
114	0	56800	95000	265.42	15		34.56	33.45	32.34	31.22	30.11	28.99	27.87	26.75	25.64	24.52
115	0	57000	95000	266.66	15		34.80	33.68	32.56	31.44	30.33	29.21	28.09	26.98	25.86	24.74
116	0	57200	95000	260.40	15		35.07	33.96	32.84	31.70	30.60	29.50	28.41	27.32	26.22	25.13

132	"	57400	95000	259.20	16		39.00	37.14	35.65	34.76	33.86	32.77	31.70	30.67	29.65
133	"	57400	95000	259.20	16		39.00	37.13	35.65	34.76	33.86	32.77	31.70	30.67	29.65
134	"	57600	95000	256.16	16		38.81	36.96	35.49	34.60	33.71	32.63	31.57	30.55	29.54
135	"	57800	95000	253.23	16		38.61	36.77	35.33	34.45	33.56	32.49	31.44	30.43	29.42
136	"	58000	95000	249.70	16		38.42	36.59	35.16	34.28	33.40	32.33	31.29	30.28	29.28
137	"	58200	95000	250.01	16		38.23	36.41	34.98	34.11	33.23	32.17	31.14	30.14	29.14
138	"	58400	95000	248.25	16		38.04	36.23	34.81	33.94	33.07	32.01	30.99	30.00	29.00
139	"	58600	95000	248.42	16		37.84	36.05	34.64	33.78	32.91	31.86	30.84	29.86	28.87
140	"	58800	95000	248.86	16		37.65	35.87	34.47	33.62	32.76	31.71	30.70	29.72	28.74
141	"	59000	95000	247.95	16		37.46	35.69	34.31	33.46	32.61	31.57	30.56	29.59	28.61
142	"	59200	95000	247.30	16		37.27	35.51	34.14	33.30	32.46	31.43	30.43	29.46	28.49
143	"	59400	95000	247.64	16		37.08	35.33	33.97	33.15	32.31	31.29	30.29	29.33	28.37
144	"	59600	95000	245.90	16		36.89	35.15	33.81	32.99	32.16	31.15	30.16	29.20	28.25
145	"	59800	95000	244.47	16		36.70	34.98	33.64	32.83	32.01	31.01	30.03	29.08	28.13
146	"	60000	95000	242.40	16		36.51	34.80	33.48	32.68	31.86	30.87	29.90	28.96	28.02
147	"	60200	95000	241.00	16		36.32	34.62	33.32	32.53	31.72	30.74	29.77	28.84	27.91
148	"	60400	95000	239.60	16		36.13	34.45	33.16	32.38	31.58	30.61	29.64	28.72	27.80
149	"	60600	95000	238.21	16		35.94	34.27	33.00	32.23	31.44	30.48	29.52	28.60	27.69
150	"	60800	95000	236.83	16		35.75	34.09	32.84	32.08	31.30	30.35	29.40	28.49	27.59
151	"	61000	95000	235.46	16		35.56	33.92	32.68	31.93	31.16	30.22	29.28	28.38	27.49

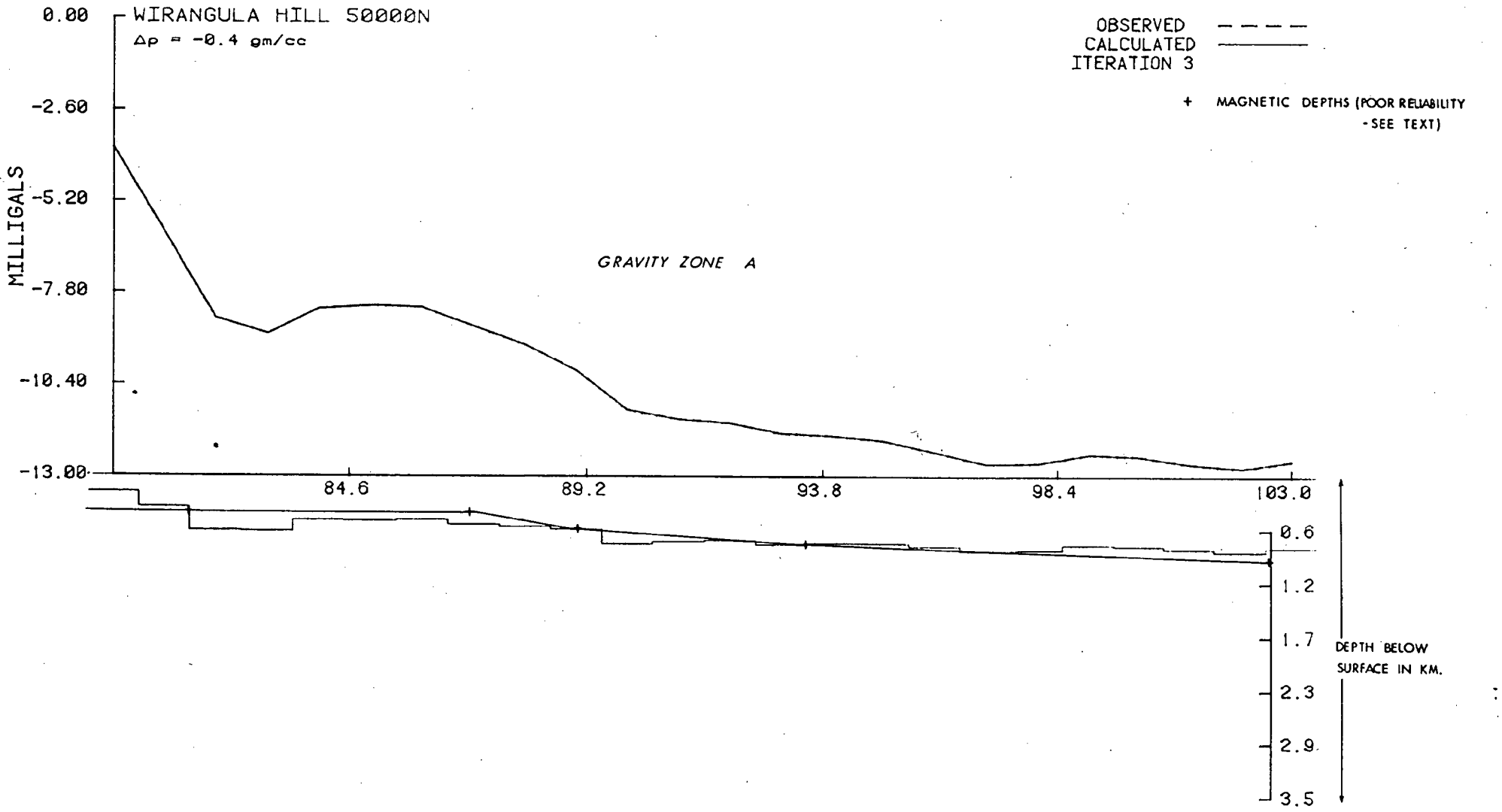
Data Computed on: 24/12/01

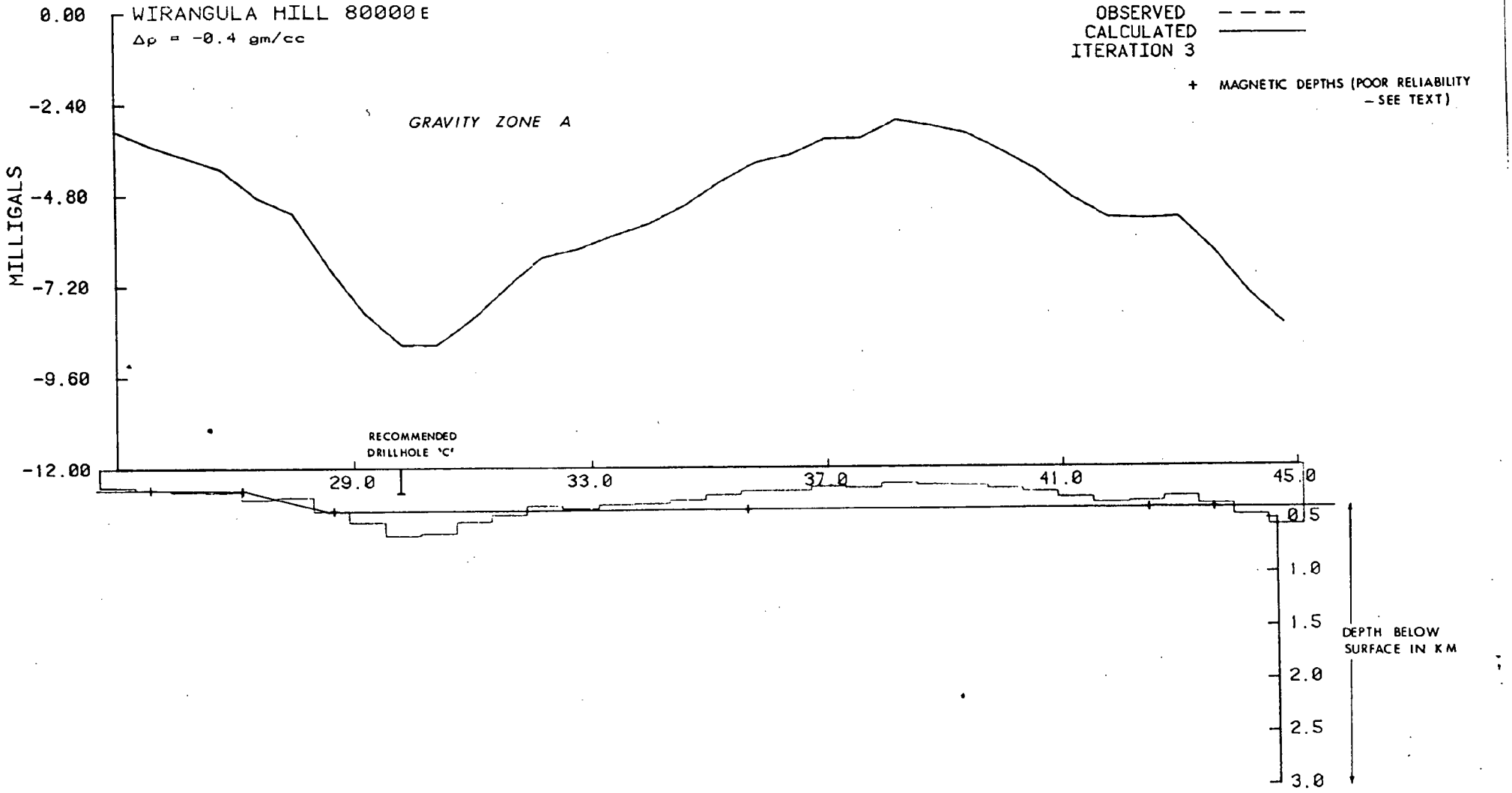
LINE 10000 E

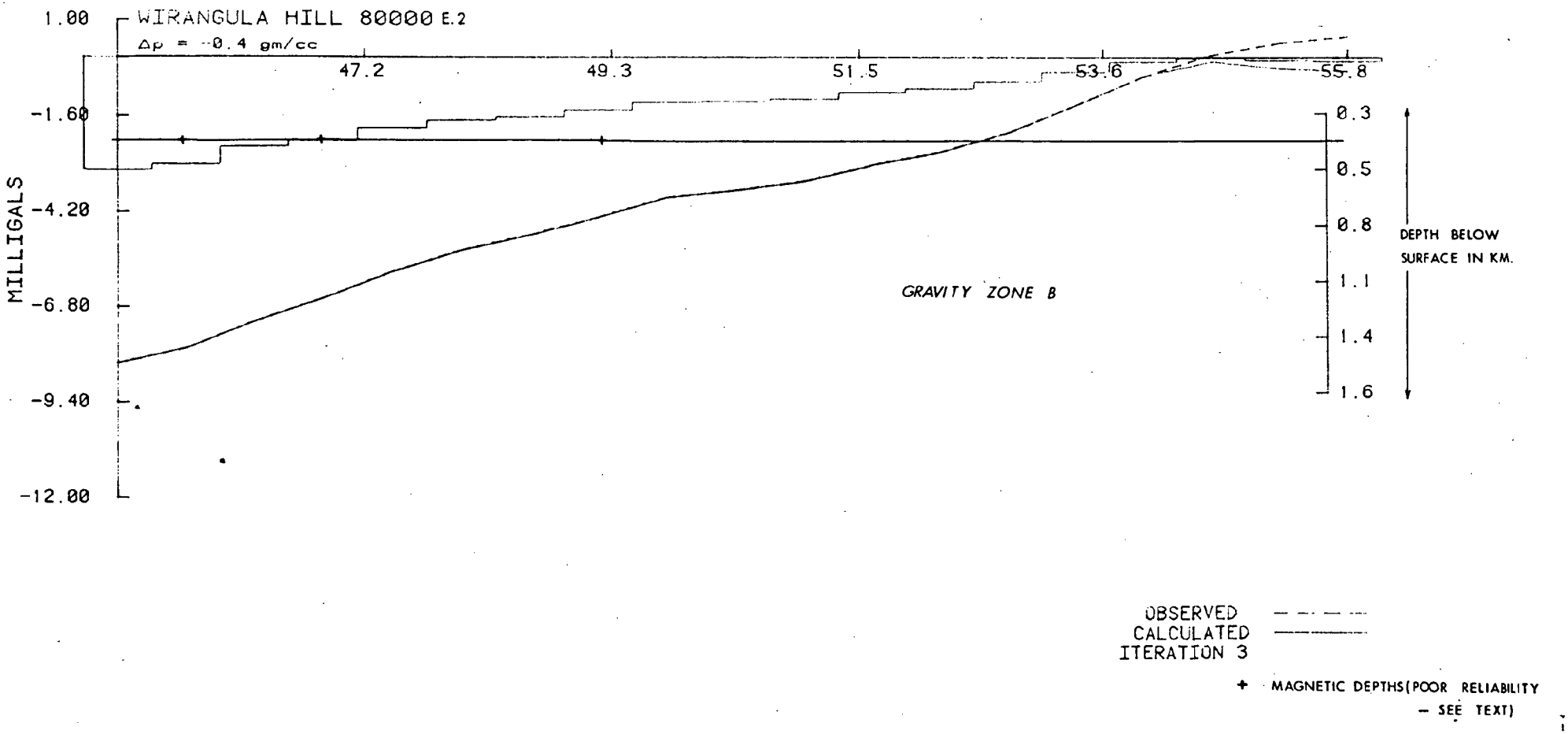
LINE	STATION	GRID NORTH	GRID EAST	ELEVATION (meters)	LOOP	RPTS	BOUGUER GRAVITY (gm/cc) 1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
		40000	100000	241.35	14		20 98	20.57	20.15	19.74	19.33	18.91	18.50	18.09	17.67	17.26	16.85
		40200	100000	240.58	14		20 66	20.25	19.84	19.42	19.01	18.60	18.18	17.77	17.36	16.94	16.53
		40400	100000	239.85	14		20 35	19.94	19.52	19.11	18.70	18.28	17.87	17.46	17.04	16.63	16.22
		40600	100000	241.05	14		20 03	19.62	19.21	18.79	18.38	17.97	17.55	17.14	16.73	16.31	15.90
		40800	100000	240.29	14		19 72	19.31	18.89	18.48	18.07	17.65	17.24	16.83	16.41	16.00	15.59
		41000	100000	241.87	14		19 40	18.99	18.58	18.16	17.75	17.34	16.92	16.51	16.10	15.68	15.27
		41200	100000	243.42	14		19 09	18.68	18.26	17.85	17.44	17.02	16.61	16.20	15.78	15.37	14.96
		41400	100000	241.90	14		18 77	18.36	17.95	17.53	17.12	16.71	16.29	15.88	15.47	15.05	14.64
		41600	100000	240.72	14		18 46	18.05	17.63	17.22	16.81	16.39	15.98	15.57	15.15	14.74	14.33
		41800	100000	241.34	14		18 14	17.73	17.32	16.90	16.49	16.08	15.66	15.25	14.84	14.42	14.01
		42000	100000	243.02	14		17 83	17.42	17.00	16.59	16.18	15.76	15.35	14.94	14.52	14.11	13.70
		42200	100000	244.26	14		17 52	17.10	16.69	16.28	15.86	15.45	15.04	14.62	14.21	13.80	13.38
		42200	100000	244.26	13	7 RPT	17 20	16.79	16.38	15.96	15.55	15.14	14.72	14.31	13.90	13.48	13.07
		42400	100000	245.01	13		16 89	16.48	16.06	15.65	15.24	14.82	14.41	14.00	13.58	13.17	12.76
		42600	100000	245.30	13		16 58	16.16	15.75	15.34	14.92	14.51	14.10	13.68	13.27	12.86	12.44
		42800	100000	244.90	13		16 26	15.85	15.44	15.02	14.61	14.20	13.78	13.37	12.96	12.54	12.13
		43000	100000	245.53	13		15 95	15.54	15.12	14.71	14.30	13.88	13.47	13.06	12.64	12.23	11.82
		43200	100000	244.29	12		15 64	15.22	14.81	14.40	13.98	13.57	13.16	12.74	12.33	11.92	11.50
		43400	100000	243.72	13		15 32	14.91	14.50	14.08	13.67	13.26	12.84	12.43	12.02	11.60	11.19
		43600	100000	244.27	13		15 01	14.60	14.18	13.77	13.36	12.94	12.53	12.12	11.70	11.29	10.88
		43800	100000	245.21	13		14 70	14.28	13.87	13.46	13.04	12.63	12.22	11.80	11.39	10.98	10.56
		44000	100000	244.96	12		14 38	13.97	13.56	13.14	12.73	12.32	11.90	11.49	11.08	10.66	10.25
		44200	100000	246.01	13		14 07	13.66	13.24	12.83	12.42	12.00	11.59	11.18	10.76	10.35	9.94
		44400	100000	245.56	13		13 76	13.34	12.93	12.52	12.10	11.69	11.28	10.86	10.45	10.04	9.62
		44600	100000	248.43	13		13 44	13.03	12.62	12.20	11.79	11.38	10.96	10.55	10.14	9.72	9.31
		44800	100000	249.58	13		13 13	12.72	12.30	11.89	11.48	11.06	10.65	10.24	9.82	9.41	9.00
		45000	100000	249.58	12		12 82	12.40	11.99	11.58	11.16	10.75	10.34	9.92	9.51	9.10	8.68
		45000	100000	249.19	12	7 RPT	12 51	12.09	11.68	11.26	10.85	10.44	10.02	9.61	9.20	8.78	8.37
		45200	100000	251.77	12		12 19	11.78	11.36	10.95	10.54	10.12	9.71	9.30	8.88	8.47	8.06
		45400	100000	256.61	12		11 88	11.47	11.05	10.64	10.22	9.81	9.40	8.98	8.57	8.16	7.74
		45600	100000	255.11	12		11 57	11.15	10.74	10.32	9.91	9.50	9.08	8.67	8.26	7.84	7.43
		45800	100000	255.69	12		11 25	10.84	10.42	10.01	9.60	9.18	8.77	8.36	7.94	7.53	7.12
		46000	100000	256.87	12		10 94	10.52	10.11	9.70	9.28	8.87	8.46	8.04	7.63	7.22	6.80
		46200	100000	257.47	12		10 63	10.21	9.80	9.38	8.97	8.56	8.14	7.73	7.32	6.90	6.49
		46400	100000	255.66	12		10 31	9.90	9.48	9.07	8.66	8.24	7.83	7.42	7.00	6.59	6.18
		46600	100000	256.23	12		10 00	9.58	9.17	8.76	8.34	7.93	7.52	7.10	6.69	6.28	5.86
		46800	100000	254.17	12		9 69	9.27	8.86	8.44	8.03	7.62	7.20	6.79	6.38	5.96	5.55
		47000	100000	256.02	12		9 37	8.96	8.54	8.13	7.72	7.30	6.89	6.48	6.06	5.65	5.24
		47200	100000	256.15	12		9 06	8.64	8.23	7.82	7.40	6.99	6.58	6.16	5.75	5.34	4.92
		47400	100000	255.73	12		8 75	8.33	7.92	7.50	7.09	6.68	6.26	5.85	5.44	5.02	4.61
		47600	100000	255.55	12		8 43	8.02	7.60	7.19	6.78	6.36	5.95	5.54	5.12	4.71	4.30
		47800	100000	255.40	12		8 12	7.70	7.29	6.88	6.46	6.05	5.64	5.22	4.81	4.40	3.98
		47000	100000	255.40	11	7 RPT	7 81	7.39	6.98	6.56	6.15	5.74	5.32	4.91	4.50	4.08	3.67
		48000	100000	253.76	11		7 50	7.08	6.66	6.25	5.84	5.42	5.01	4.60	4.18	3.77	3.36
		48200	100000	255.70	11		7 18	6.77	6.35	5.94	5.52	5.11	4.70	4.28	3.87	3.46	3.04
		48400	100000	256.50	11		6 87	6.45	6.04	5.63	5.21	4.80	4.39	3.97	3.56	3.15	2.73
		48600	100000	258.99	11		6 56	6.14	5.73	5.31	4.90	4.49	4.07	3.66	3.25	2.83	2.42
		48800	100000	259.07	11		6 24	5.83	5.41	5.00	4.59	4.17	3.76	3.35	2.93	2.52	2.11
		49000	100000	257.50	11		5 93	5.51	5.10	4.69	4.27	3.86	3.45	3.03	2.62	2.21	1.79
		49200	100000	255.19	11		5 62	5.20	4.79	4.37	3.96	3.55	3.13	2.72	2.31	1.89	1.48

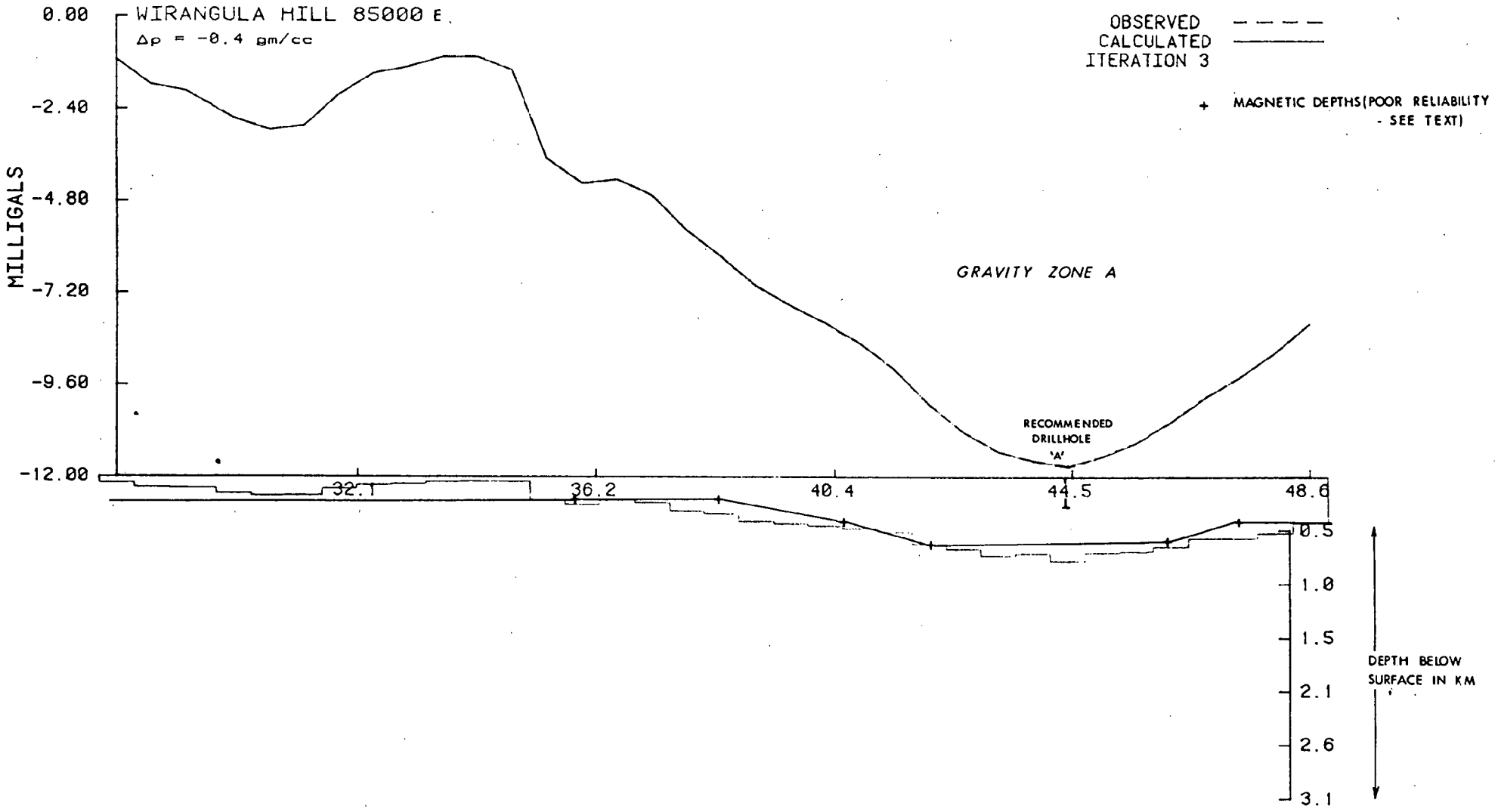
APPENDIX II

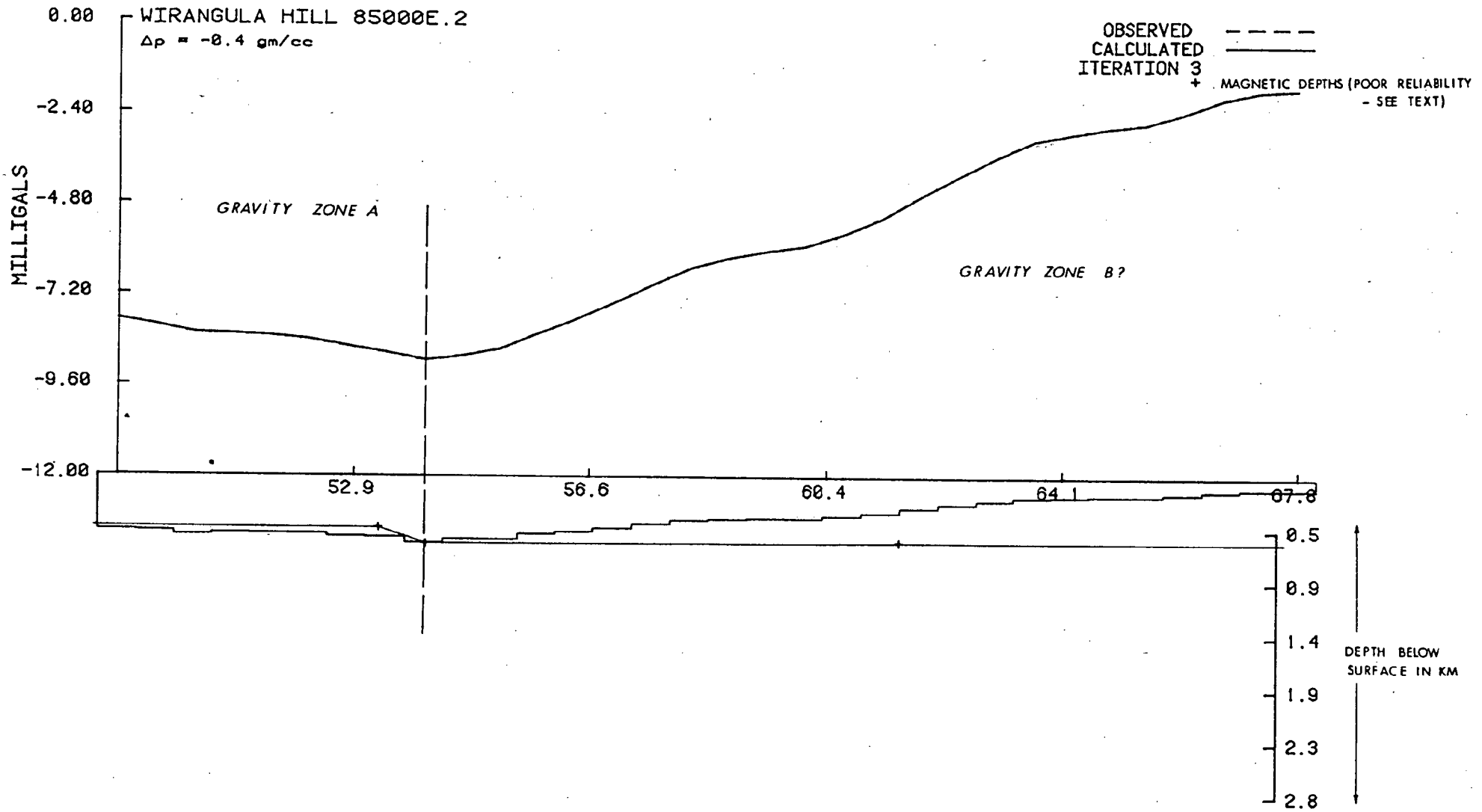
INVERSION PROFILES CALCULATED

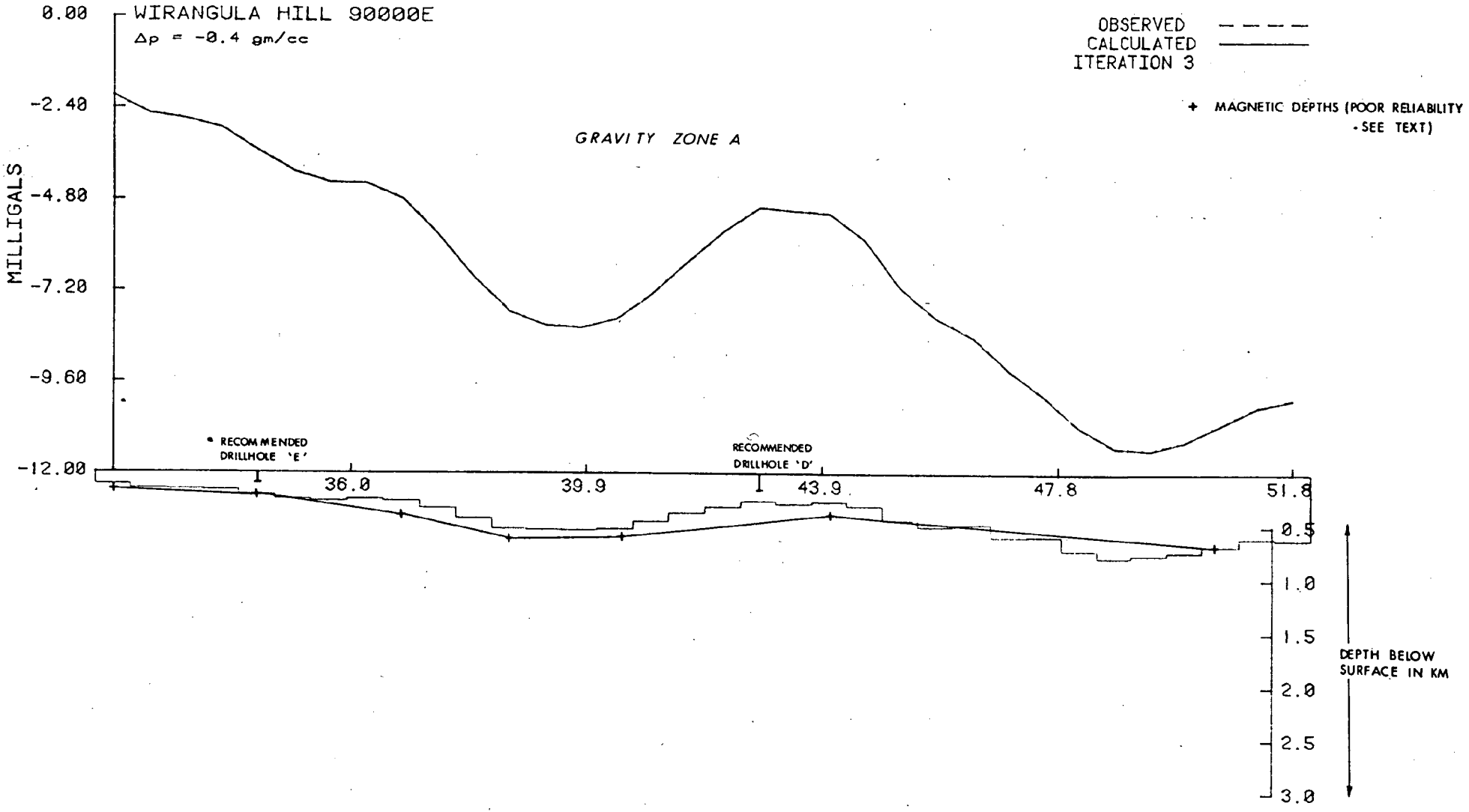

WIRANGULA HILL 50000N
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS (POOR RELIABILITY - SEE TEXT)
MILLIGALS
0.00
-2.60
-5.20
-7.80
-10.40
-13.00
GRAVITY ZONE A
84.6
89.2
93.8
98.4
103.0
0.6
1.2
1.7
2.3
2.9
3.5
DEPTH BELOW SURFACE IN KM.

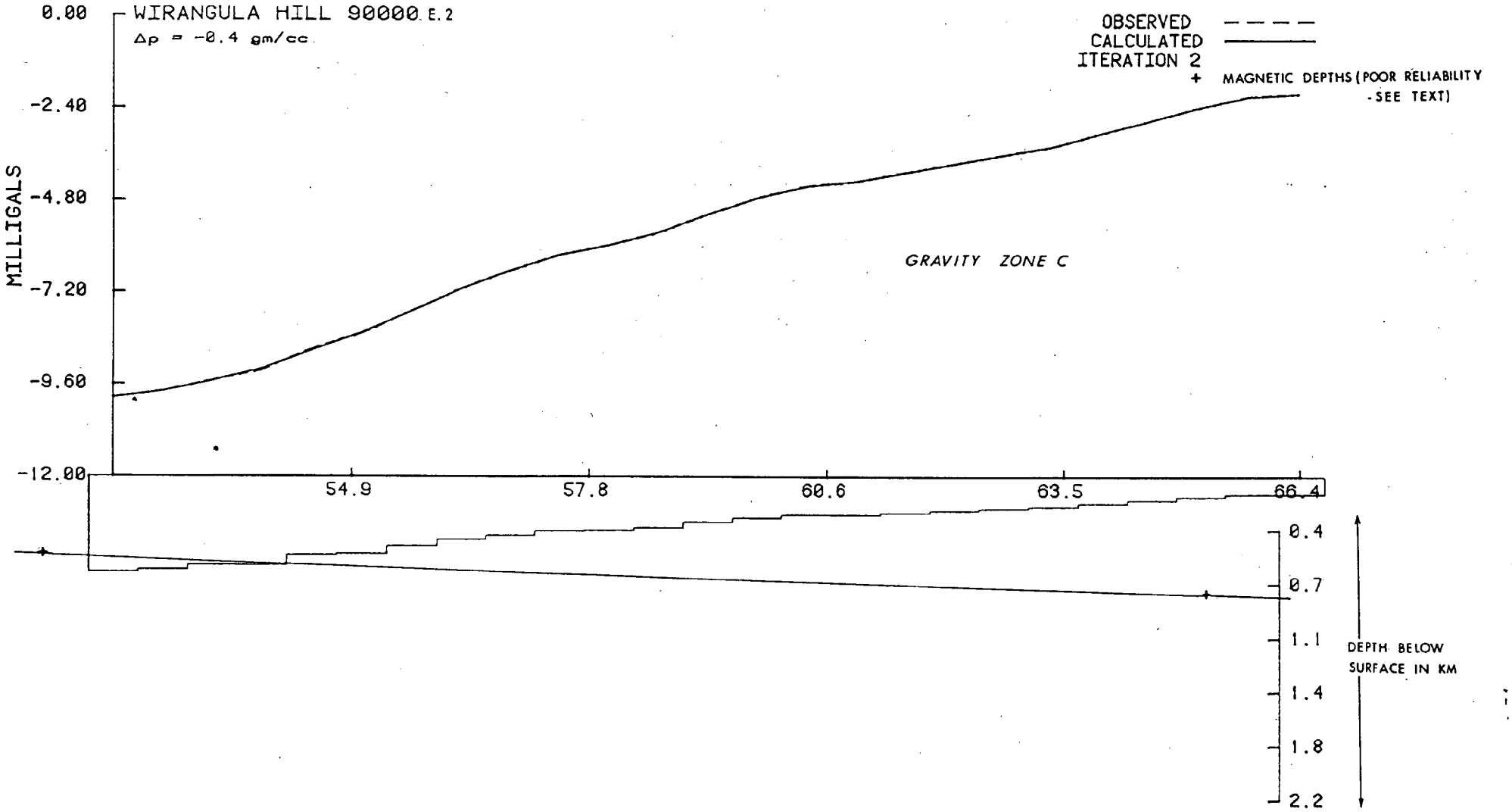

WIRANGULA HILL 80000E
Δρ = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS (POOR RELIABILITY – SEE TEXT)
GRAVITY ZONE A
MILLIGALS
0.00
-2.40
-4.80
-7.20
-9.60
-12.00
RECOMMENDED DRILLHOLE 'C'
29.0
33.0
37.0
41.0
45.0
0.5
1.0
1.5
2.0
2.5
3.0
DEPTH BELOW SURFACE IN KM

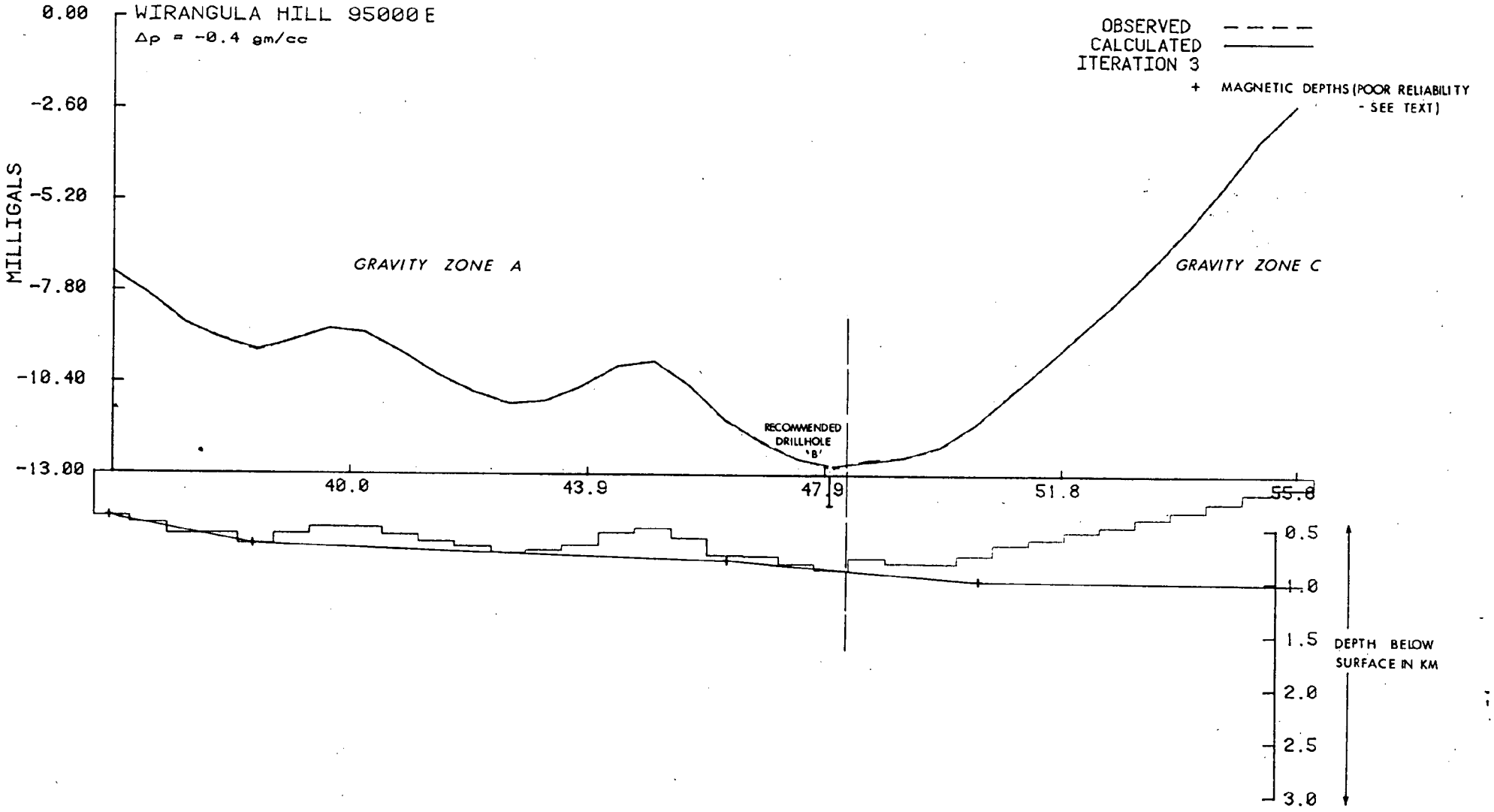

WIRANGULA HILL 80000 E.2
Δρ = -0.4 gm/cc
47.2
49.3
51.5
53.6
55.8
1.00
-1.60
-4.20
-6.80
-9.40
-12.00
MILLIGALS
GRAVITY ZONE B
0.3
0.5
0.8
1.1
1.4
1.6
DEPTH BELOW SURFACE IN KM.
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS(POOR RELIABILITY – SEE TEXT)

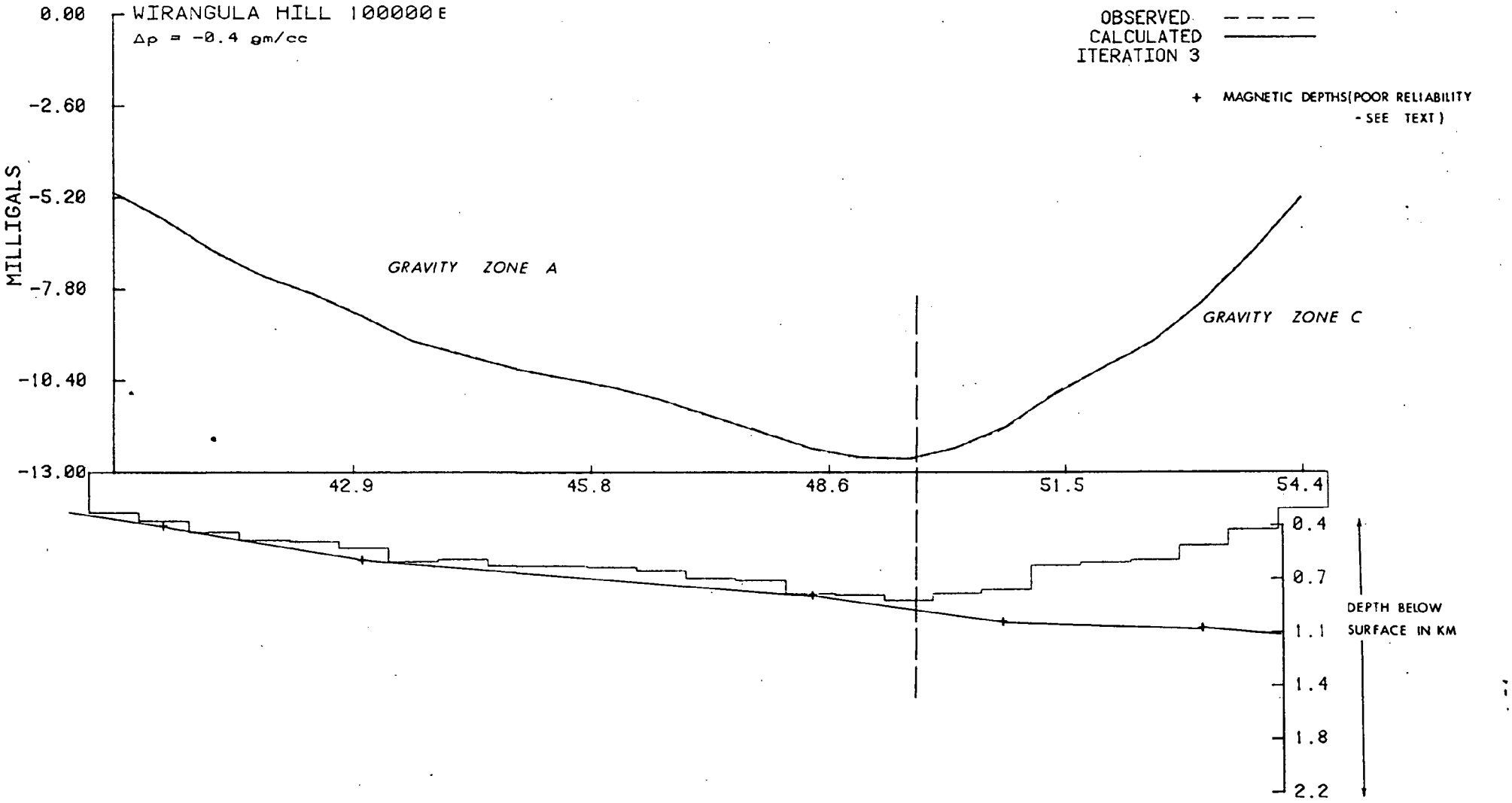

WIRANGULA HILL 85000 E
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS(POOR RELIABILITY - SEE TEXT)
MILLIGALS
0.00
-2.40
-4.80
-7.20
-9.60
-12.00
GRAVITY ZONE A
RECOMMENDED DRILLHOLE 'A'
32.1
36.2
40.4
44.5
48.6
0.5
1.0
1.5
2.1
2.6
3.1
DEPTH BELOW SURFACE IN KM


WIRANGULA HILL 85000E.2
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS (POOR RELIABILITY - SEE TEXT)
MILLIGALS
0.00
-2.40
-4.80
-7.20
-9.60
-12.00
GRAVITY ZONE A
GRAVITY ZONE B?
52.9
56.6
60.4
64.1
67.8
0.5
0.9
1.4
1.9
2.3
2.8
DEPTH BELOW SURFACE IN KM


WIRANGULA HILL 90000E
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS (POOR RELIABILITY - SEE TEXT)
GRAVITY ZONE A
MILLIGALS
0.00
-2.40
-4.80
-7.20
-9.60
-12.00
* RECOMMENDED DRILLHOLE 'E'
RECOMMENDED DRILLHOLE 'D'
36.0
39.9
43.9
47.8
51.8
0.5
1.0
1.5
2.0
2.5
3.0
DEPTH BELOW SURFACE IN KM


WIRANGULA HILL 90000 E.2
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 2
+ MAGNETIC DEPTHS (POOR RELIABILITY - SEE TEXT)
MILLIGALS
0.00
-2.40
-4.80
-7.20
-9.60
-12.00
GRAVITY ZONE C
54.9
57.8
60.6
63.5
66.4
0.4
0.7
1.1
1.4
1.8
2.2
DEPTH BELOW SURFACE IN KM


WIRANGULA HILL 95000E
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS (POOR RELIABILITY - SEE TEXT)
MILLIGALS
0.00
-2.60
-5.20
-7.80
-10.40
-13.00
GRAVITY ZONE A
GRAVITY ZONE C
RECOMMENDED DRILLHOLE 'B'
40.0
43.9
47.9
51.8
55.8
0.5
1.0
1.5
2.0
2.5
3.0
DEPTH BELOW SURFACE IN KM


WIRANGULA HILL 100000E
Δp = -0.4 gm/cc
OBSERVED
CALCULATED
ITERATION 3
+ MAGNETIC DEPTHS(POOR RELIABILITY - SEE TEXT)
MILLIGALS
0.00
-2.60
-5.20
-7.80
-10.40
-13.00
GRAVITY ZONE A
GRAVITY ZONE C
42.9
45.8
48.6
51.5
54.4
0.4
0.7
1.1
1.4
1.8
2.2
DEPTH BELOW SURFACE IN KM

APPENDIX III

PRINT OUTPUT OF INVERSION PROFILES

****
* WIRANGULA HILL 50000N *
****

OBS. DATA : FILE 43

TITLE : NILPINNA 50000N

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	80.000	0.175	-3.680	-3.680	0.000
2	81.000	0.333	-6.100	-6.102	0.002
3	82.000	0.581	-8.530	-8.527	-0.003
4	83.000	0.594	-8.980	-8.979	-0.001
5	84.000	0.471	-8.250	-8.254	0.004
6	85.000	0.483	-8.170	-8.167	-0.003
7	86.000	0.468	-8.220	-8.222	0.002
8	87.000	0.521	-8.770	-8.770	0.000
9	88.000	0.545	-9.290	-9.287	-0.003
10	89.000	0.575	-10.000	-10.010	0.010
11	90.000	0.729	-11.140	-11.125	-0.015
12	91.000	0.701	-11.390	-11.396	0.006
13	92.000	0.686	-11.490	-11.495	0.005
14	93.000	0.734	-11.790	-11.782	-0.008
15	94.000	0.715	-11.850	-11.853	0.003
16	95.000	0.719	-11.990	-11.989	-0.001
17	96.000	0.747	-12.300	-12.304	0.004
18	97.000	0.799	-12.640	-12.635	-0.005
19	98.000	0.786	-12.610	-12.607	-0.003
20	99.000	0.734	-12.370	-12.375	0.005
21	100.000	0.749	-12.430	-12.428	-0.002
22	101.000	0.780	-12.640	-12.643	0.003
23	102.000	0.809	-12.760	-12.752	-0.008
24	103.000	0.764	-12.550	-12.553	0.003

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.005

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**************************
*  WIRANGULA HILL 80000  *
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OBS. DATA : FILE 35

TITLE : NILPINNA 8000E 100,166

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	45.000	0.545	-8.330	-8.332	0.002
2	45.600	0.514	-7.910	-7.903	-0.007
3	46.200	0.428	-7.170	-7.178	0.008
4	46.800	0.401	-6.550	-6.546	-0.004
5	47.400	0.341	-5.830	-5.832	0.002
6	48.000	0.302	-5.230	-5.230	0.000
7	48.600	0.286	-4.820	-4.820	0.000
8	49.200	0.255	-4.340	-4.341	0.001
9	49.800	0.215	-3.810	-3.811	0.001
10	50.400	0.212	-3.600	-3.601	0.001
11	51.000	0.200	-3.350	-3.351	0.001
12	51.600	0.168	-2.910	-2.911	0.001
13	52.200	0.150	-2.560	-2.562	0.002
14	52.800	0.116	-2.030	-2.032	0.002
15	53.400	0.070	-1.300	-1.304	0.004
16	54.000	0.023	-0.510	-0.517	0.007
17	54.600	0.001	0.060	-0.117	0.177
18	55.200	0.014	0.390	-0.305	0.695
19	55.800	0.020	0.550	-0.383	0.933

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.277

****
* WIRANGULA HILL 80000 *
****

OBS. DATA : FILE 34

TITLE : NILPINNA 8000E 1,100

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	25.000	0.173	-3.100	-3.100	0.000
2	25.600	0.202	-3.490	-3.490	0.000
3	26.200	0.218	-3.800	-3.800	0.000
4	26.800	0.223	-4.110	-4.111	0.001
5	27.400	0.292	-4.860	-4.858	-0.002
6	28.000	0.267	-5.280	-5.281	0.001
7	28.600	0.403	-6.690	-6.687	-0.003
8	29.200	0.507	-7.910	-7.927	0.017
9	29.800	0.632	-8.770	-8.750	-0.020
10	30.400	0.614	-8.760	-8.753	-0.007
11	31.000	0.503	-8.060	-8.076	0.016
12	31.600	0.439	-7.250	-7.243	-0.007
13	32.200	0.355	-6.450	-6.455	0.005
14	32.800	0.384	-6.240	-6.234	-0.006
15	33.400	0.346	-5.870	-5.874	0.004
16	34.000	0.339	-5.570	-5.569	-0.001
17	34.600	0.304	-5.090	-5.090	0.000
18	35.200	0.256	-4.470	-4.470	0.000
19	35.800	0.221	-3.960	-3.960	0.000
20	36.400	0.220	-3.760	-3.760	0.000
21	37.000	0.183	-3.350	-3.350	0.000
22	37.600	0.196	-3.330	-3.330	0.000
23	38.200	0.150	-2.860	-2.860	0.000
24	38.800	0.167	-3.010	-3.010	0.000
25	39.400	0.176	-3.210	-3.210	0.000
26	40.000	0.206	-3.660	-3.660	0.000
27	40.600	0.236	-4.180	-4.180	0.000
28	41.200	0.292	-4.890	-4.891	0.001
29	41.800	0.342	-5.430	-5.429	-0.001
30	42.400	0.326	-5.470	-5.470	0.000
31	43.000	0.282	-5.420	-5.420	0.000
32	43.600	0.357	-6.290	-6.290	0.000
33	44.200	0.462	-7.410	-7.415	0.005
34	44.800	0.559	-8.260	-8.258	-0.002

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.006

****
* WIRANGULA HILL 85000 *
****

OBS. DATA : FILE 37

TITLE : NILPINNA 8500E 105,213

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	49.200	0.478	-7.890	-7.889	-0.001
2	49.800	0.487	-8.040	-8.045	0.005
3	50.400	0.518	-8.240	-8.233	-0.007
4	51.000	0.503	-8.270	-8.275	0.005
5	51.600	0.505	-8.320	-8.318	-0.002
6	52.200	0.507	-8.410	-8.413	0.003
7	52.800	0.529	-8.590	-8.585	-0.005
8	53.400	0.534	-8.750	-8.762	0.012
9	54.000	0.585	-8.950	-8.932	-0.018
10	54.600	0.548	-8.820	-8.835	0.015
11	55.200	0.553	-8.640	-8.629	-0.011
12	55.800	0.501	-8.230	-8.237	0.007
13	56.400	0.482	-7.850	-7.847	-0.003
14	57.000	0.451	-7.410	-7.410	0.000
15	57.600	0.412	-6.920	-6.920	0.000
16	58.200	0.376	-6.470	-6.471	0.001
17	58.800	0.366	-6.200	-6.199	-0.001
18	59.400	0.358	-6.020	-6.021	0.001
19	60.000	0.361	-5.880	-5.879	-0.001
20	60.600	0.339	-5.570	-5.571	0.001
21	61.200	0.309	-5.120	-5.120	0.000
22	61.800	0.265	-4.540	-4.540	0.000
23	62.400	0.232	-4.010	-4.010	0.000
24	63.000	0.200	-3.510	-3.510	0.000
25	63.600	0.173	-3.080	-3.080	0.000
26	64.200	0.166	-2.890	-2.890	0.000
27	64.800	0.157	-2.730	-2.730	0.000
28	65.400	0.155	-2.630	-2.630	0.000
29	66.000	0.137	-2.350	-2.350	0.000
30	66.600	0.112	-1.980	-1.980	0.000
31	67.200	0.099	-1.760	-1.760	0.000
32	67.800	0.098	-1.710	-1.710	0.000

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.006

****
* WIRANGULA HILL 85000 *
****

OBS. DATA : FILE 36

TITLE : NILPINNA 8500E 1:100

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22:1:82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	28.000	0.058	-1.110	-1.110	0.000
2	28.600	0.104	-1.770	-1.770	0.000
3	29.200	0.109	-1.960	-1.960	0.000
4	30.000	0.160	-2.640	-2.640	0.000
5	30.600	0.183	-2.950	-2.950	0.000
6	31.200	0.178	-2.850	-2.850	0.000
7	31.800	0.111	-2.030	-2.030	0.000
8	32.400	0.076	-1.470	-1.470	0.000
9	33.000	0.067	-1.300	-1.300	0.000
10	33.600	0.048	-1.040	-1.040	0.000
11	34.200	0.044	-1.050	-1.050	0.000
12	34.800	0.048	-1.390	-1.390	0.000
13	35.400	0.226	-3.690	-3.690	0.000
14	36.000	0.271	-4.330	-4.329	-0.001
15	36.600	0.227	-4.220	-4.220	0.000
16	37.200	0.250	-4.660	-4.661	0.001
17	37.800	0.331	-5.570	-5.568	-0.002
18	38.400	0.358	-6.240	-6.244	0.004
19	39.000	0.430	-7.010	-7.006	-0.004
20	39.600	0.454	-7.540	-7.542	0.002
21	40.200	0.473	-7.990	-7.990	0.000
22	40.800	0.498	-8.510	-8.505	-0.005
23	41.400	0.530	-9.190	-9.204	0.014
24	42.000	0.644	-10.120	-10.105	-0.015
25	42.600	0.691	-10.820	-10.833	0.013
26	43.200	0.756	-11.360	-11.340	-0.020
27	43.800	0.736	-11.570	-11.608	0.038
28	44.400	0.810	-11.750	-11.702	-0.048
29	45.000	0.729	-11.450	-11.478	0.028
30	45.600	0.715	-11.100	-11.096	-0.004
31	46.200	0.670	-10.570	-10.558	-0.012
32	46.800	0.586	-9.900	-9.920	0.020
33	47.400	0.587	-9.410	-9.401	-0.009
34	48.000	0.538	-8.760	-8.755	-0.005
35	48.600	0.445	-7.990	-7.993	0.003

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.014

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*  WIRANGULA HILL 90000  *
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OBS. DATA : FILE 39

TITLE : NILPINNA 90000E 101

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 2

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	52.000	0.639	-9.950	-9.943	-0.007
2	52.600	0.620	-9.770	-9.768	-0.002
3	53.200	0.591	-9.490	-9.511	0.021
4	53.800	0.593	-9.240	-9.200	-0.040
5	54.400	0.523	-8.670	-8.706	0.036
6	55.000	0.514	-8.270	-8.252	-0.018
7	55.600	0.463	-7.680	-7.685	0.005
8	56.200	0.418	-7.100	-7.106	0.006
9	56.800	0.391	-6.630	-6.627	-0.003
10	57.400	0.362	-6.220	-6.226	0.006
11	58.000	0.358	-5.970	-5.967	-0.003
12	58.600	0.339	-5.630	-5.628	-0.002
13	59.200	0.301	-5.150	-5.153	0.003
14	59.800	0.273	-4.720	-4.720	0.000
15	60.400	0.253	-4.410	-4.411	0.001
16	61.000	0.255	-4.290	-4.288	-0.002
17	61.600	0.238	-4.050	-4.051	0.001
18	62.200	0.225	-3.820	-3.820	0.000
19	62.800	0.211	-3.590	-3.591	0.001
20	63.400	0.200	-3.370	-3.370	0.000
21	64.000	0.175	-3.010	-3.011	0.001
22	64.600	0.155	-2.680	-2.680	0.000
23	65.200	0.134	-2.340	-2.340	0.000
24	65.800	0.116	-2.060	-2.060	0.000
25	66.400	0.114	-1.990	-1.990	0.000

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.013

****
* WIRANGULA HILL 90000 *
****

OBS. DATA : FILE 38

TITLE : NILPINNA 9000E 1,100

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	32.000	0.114	-2.080	-2.080	0.000
2	32.600	0.150	-2.560	-2.560	0.000
3	33.200	0.153	-2.700	-2.700	0.000
4	33.800	0.161	-2.930	-2.930	0.000
5	34.400	0.204	-3.530	-3.530	0.000
6	35.000	0.244	-4.080	-4.080	0.000
7	35.600	0.261	-4.360	-4.360	0.000
8	36.200	0.242	-4.390	-4.390	0.000
9	36.800	0.257	-4.790	-4.789	-0.001
10	37.400	0.324	-5.740	-5.740	0.000
11	38.000	0.424	-6.880	-6.885	0.005
12	38.600	0.518	-7.770	-7.761	-0.009
13	39.200	0.524	-8.110	-8.116	0.006
14	39.800	0.530	-8.170	-8.172	0.002
15	40.400	0.520	-7.940	-7.934	-0.006
16	41.000	0.449	-7.280	-7.283	0.003
17	41.600	0.368	-6.410	-6.411	0.001
18	42.200	0.311	-5.610	-5.609	-0.001
19	42.800	0.253	-4.990	-4.991	0.001
20	43.400	0.283	-5.090	-5.090	0.000
21	44.000	0.263	-5.150	-5.149	-0.001
22	44.600	0.302	-5.850	-5.852	0.002
23	45.200	0.429	-7.080	-7.081	0.001
24	45.800	0.491	-7.910	-7.898	-0.012
25	46.400	0.466	-8.400	-8.423	0.023
26	47.000	0.588	-9.300	-9.265	-0.035
27	47.600	0.583	-9.940	-9.976	0.036
28	48.200	0.710	-10.790	-10.779	-0.011
29	48.800	0.776	-11.320	-11.303	-0.017
30	49.400	0.754	-11.370	-11.380	0.010
31	50.000	0.724	-11.140	-11.140	0.000
32	50.600	0.669	-10.700	-10.695	-0.005
33	51.200	0.598	-10.220	-10.237	0.017
34	51.800	0.613	-10.030	-10.024	-0.006

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.011

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* WIRANGULA HILL 95000 *
****

OBS. DATA : FILE 40

TITLE : NILPINNA 95000 E 1

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	36.000	0.407	-7.270	-7.269	-0.001
2	36.600	0.463	-7.940	-7.949	0.009
3	37.200	0.564	-8.740	-8.720	-0.020
4	37.800	0.555	-9.140	-9.177	0.037
5	38.400	0.654	-9.520	-9.476	-0.044
6	39.000	0.555	-9.200	-9.216	0.016
7	39.600	0.492	-8.870	-8.873	0.003
8	40.200	0.497	-8.980	-8.980	0.000
9	40.800	0.563	-9.530	-9.528	-0.002
10	41.400	0.629	-10.160	-10.159	-0.001
11	42.000	0.672	-10.660	-10.673	0.013
12	42.600	0.729	-10.990	-10.974	-0.016
13	43.200	0.700	-10.890	-10.900	0.010
14	43.800	0.656	-10.500	-10.489	-0.011
15	44.400	0.541	-9.900	-9.905	0.005
16	45.000	0.498	-9.770	-9.774	0.004
17	45.600	0.589	-10.460	-10.473	0.013
18	46.200	0.745	-11.450	-11.411	-0.039
19	46.800	0.752	-12.030	-12.068	0.038
20	47.400	0.825	-12.540	-12.543	0.003
21	48.000	0.883	-12.800	-12.739	-0.061
22	48.600	0.769	-12.560	-12.622	0.062
23	49.200	0.817	-12.490	-12.481	-0.009
24	49.800	0.819	-12.200	-12.178	-0.022
25	50.400	0.745	-11.540	-11.538	-0.002
26	51.000	0.644	-10.650	-10.668	0.018
27	51.600	0.595	-9.790	-9.781	-0.009
28	52.200	0.521	-8.860	-8.865	0.005
29	52.800	0.475	-7.970	-7.966	-0.004
30	53.400	0.401	-6.960	-6.962	0.002
31	54.000	0.333	-5.890	-5.890	0.000
32	54.600	0.254	-4.700	-4.700	0.000
33	55.200	0.168	-3.410	-3.410	0.000
34	55.800	0.111	-2.420	-2.420	0.000

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.022

****
* WIRANGULA HILL 100000 *
****

OBS. DATA : FILE 42

TITLE : NILPINNA 10000E 1

DEPTH TO TOP OF MODEL = 1.0E-3 KILOMETRES

NUMBER OF SIDE PRISMS = 5

DENSITY CONTRAST = -0.4

DATE : 22,1,82

ITERATION NUMBER 3

ST.NO.	X(KM)	T(KM)	G(MEAS)	G(CALC)	DIFF
1	40.000	0.271	-5.060	-5.060	0.000
2	40.600	0.325	-5.810	-5.811	0.001
3	41.200	0.401	-6.720	-6.722	0.002
4	41.800	0.457	-7.450	-7.445	-0.005
5	42.400	0.464	-7.950	-7.953	0.003
6	43.000	0.507	-8.580	-8.590	0.010
7	43.600	0.600	-9.300	-9.277	-0.023
8	44.200	0.584	-9.660	-9.680	0.020
9	44.800	0.629	-10.050	-10.040	-0.010
10	45.400	0.630	-10.310	-10.312	0.002
11	46.000	0.637	-10.580	-10.581	0.001
12	46.600	0.659	-10.940	-10.945	0.005
13	47.200	0.710	-11.410	-11.397	-0.013
14	47.800	0.726	-11.830	-11.854	0.024
15	48.400	0.814	-12.330	-12.308	-0.022
16	49.000	0.824	-12.560	-12.578	0.018
17	49.600	0.860	-12.620	-12.602	-0.018
18	50.200	0.812	-12.290	-12.310	0.020
19	50.800	0.789	-11.730	-11.688	-0.042
20	51.400	0.627	-10.740	-10.776	0.036
21	52.000	0.606	-10.010	-10.009	-0.001
22	52.600	0.591	-9.280	-9.264	-0.016
23	53.200	0.492	-8.170	-8.177	0.007
24	53.800	0.386	-6.780	-6.781	0.001
25	54.400	0.246	-5.190	-5.190	0.000

STANDARD DEVIATION OF GRAVITY DIFFERENCE = 0.017

229

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924, SOUTH AUSTRALIA

- REPORT ON THE RECONNAISSANCE DRILLING PROGRAMME, APRIL 1982.

AUTHOR: D.R. MC BAIN

DATE: 8TH JUNE, 1982

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SUBMITTED BY: D.R. McBain

ACCEPTED BY:

11477

CONTENTS

1. SUMMARY

A reconnaissance drilling programme, comprising four rotary-mud boreholes, was completed.

Those three holes in the south of the tenement all intersected Permian Mount Toondina Formation coal measures at depths greater than 115 metres. The individual coal seams were relatively thin, with a maximum seam thickness of 2.1 metres. Seam splitting and thinning occurs in a southerly and westerly direction, towards the basin margins, as the Mount Toondina Formation shallows. The upper horizons of the coal measures are increasingly eroded off towards the basin margins.

In the north of the E.L. the one borehole drilled was abandoned prior to intersecting the Mount Toondina Formation, due to a strong artesian flow. By extrapolation it is concluded that the minimum depth to the top of the Mount Toondina Formation is greater than 140 metres.

The thin seams, low coal to inter-seam waste ratio and depth to the coal combine to limit the potential for an economically viable coal deposit. The prospects for coal at shallower depths than already intersected appear remote, due to the increasing erosion of the coal measures towards the basin margins. An analysis of the coal seams indicates that seams thicker than those intersected in this programme will only be encountered at increased depths.

It is recommended that E.L. 924 be surrendered due to the limited potential for an economic coal deposit to occur within it.

2. CONCLUSIONS

1) The prospects for extensive coal deposits at depths less than 120 metres are limited.

2) The Permian Mount Toondina Formation coal measures are increasingly eroded off to the basin margins as the Mount Toondina becomes shallower.

3) The coal seams are relatively thin, with the thickest coal seam development in the deeper parts of the basin.

4) The coal seams have a tendency to split towards the basin margins; this in part accounts for the thicker coal seams in the deeper central parts of the basin.

5) Some of the coal seams are fairly localised, grading laterally into carbonaceous material.

6) The coal to inter-seam waste ratio is low, and appears unrelated to depth or coal zone thickness.

7) The coal zone thickness increases with depth. In 82AWH4 this increase is partly due to development of two additional coal seams at the base of the coal measures sequence.

8) Coal seam correlation is only moderate and to a degree speculative due to the thin and variable nature of the coal seams.

9) The prospect for an economically viable coal deposit is remote.

10) The basin configuration and structure interpreted from the geophysical gravity survey data was broadly confirmed from the drilling programme. Detailed evaluation of the interpreted configuration was not possible with the number of holes drilled.

11) While several of the multi-commodity analyses from the Mesozoic and Permian sediments were elevated, no further exploration is warranted. Gold values peaked at 0.125 g/t and oil yields ±20 litres/tonne. No further exploration is warranted by these results.

3. RECOMMENDATIONS

1) Based on the evaluation of the reconnaissance drilling programme it is recommended that the E.L. is surrendered.

4. INTRODUCTION

Exploration Licence 924 (Plan SAa 1331) was taken out as part of the coal exploration programme of CRA Exploration Pty. Limited within South Australia. The target horizon being Permian Mount Toondina Formation coal measures on the margins of the Arckaringa Basin. Previous boreholes in the vicinity had intersected Permian age coal.

The tenement was granted to CRA Exploration Pty. Limited on 16th November, 1981 for a period of twelve months.

The aim of the reconnaissance drilling programme was to test the Mount Toondina coal measures development on the margins of the Arckargina Basin.

This report contains the results and an evaluation of the four hole reconnaissance drilling programme carried out in April 1982.

5. GEOLOGY

While none of the boreholes were stratigraphic, the three holes in the south of the E.L. apparently intersected a full sequence as far as the Permian Stuart Range Formation. The Stuart Range was only recognised in 82AWH1 where geophysical logs were run from the bottom of the hole. In boreholes 82AWH2 and 4 no geophysical log was run in the bottom part of the hole due to impenetrable mud cake on the hole walls. With the lithological similarities between the Mount Toondina and Stuart Range Formations separation solely on the basis of the cuttings was not possible with any degree of certainty.

The sediments in the southern area have a macro uniformity, however, exhibit considerable variation within correlatable stratigraphic units (Plans SAa 1666, 1665, 1664). The Mount Toondina Formation sediments are particularly variable with considerable lateral variations.

The Stuart Range Formation, intersected at the bottom of the holes, consists of mudstones. In parts these mudstones are silty with occasional slightly carbonaceous or micaceous bands. The depositional environment appears to have been restricted marine, with the siltier bands reflecting slight eustatic fluctuations, or increased rates of weathering caused by climatic changes.

The Mount Toondina Formation is variously represented by sandstone, siltstone, mudstone and coal measures. Cenerally the sediments at the base of the Mount Toondina Formation are coarser than at the top of the Stuart Range. The depositional environment changed from restricted marine to lacustrine at the base of the Mount Toondina Formation. In borehole 82AWH1, the southern-most hole, (Plan SAa 1331) the lower Mount Toondina is present as sandstone alternating with mudstone and/or siltstone. These sediments would appear to reflect shallow lacustrine deposition with either eustatic fluctuations or more likely climatic variations represented by the mudstone/siltstone alternations. The shoreline would appear to be to the south of 82AWH1.

To the north of 82AWH1, in holes 82AWH2 and 4 (Plan SAa 1331) a mudstone/siltstone sequence with occasional sandstone bands was deposited in the lower section of the Mount Toondina Formation. Within this unit two coal horizons are developed in 82AWH4, and to a lesser extent in 82AWH2, finally pinching out to the south. These sediments indicate low energy

lacustrine conditions, with a few high energy interludes, possibly as a result of climatic variations with a period of increased erosion. The coal horizons represent the development of swamp conditions in the centre of the localised basin. Laterally the coal horizons grade into carbonaceous mudstone and then sandstone.

The upper section of the Mount Toondina Formation is characterised by cyclic coal sedimentation, with coal interbedded with mudstone, siltstone and sandstone. These sediments appear to indicate differential sedimentation in response to climatic variations and differential rates of subsidence in shallow lacustrine and swamp conditions. Correlation os the coal seams in the upper part of the Mount Toondina Formation is only moderate. The correlation is complicated by seam splitting, absence of seams, and the wide spacing of the boreholes.

As the Mount Toondina Formation shallows to the south and south-west, it appears that an increasing amount of the uppermost section has been eroded off prior to the deposition of the Algebuckina Sandstone.

The Algebuckina Sandstone was deposited under fluvial conditions, being represented by generally well sorted fine to granular sandstone. A few thin mudstone or siltstone bands are present in the sequence, often at the top of cycles.

The littoral marine environment of Cadna-owie Sandstone deposition is reflected in a higher proportion of fine grained material in the sequence, compared to the Algebuckina Sandstone. The sediments range from silty mudstone through to granular sandstone; the range of sediment reflecting eustatic fluctuations.

A distinct and rapid marine incursion occurred at the base of the Bulldog Shale. Mudstones predominantly were deposited, with a maximum of three minor sandstone bands. These sandstone bands represent short lived marine regressions.

6. WORK CARRIED OUT

6.1 Geophysics

6.1.1 Downhole

All the boreholes, with the exception of 82AWH3, were logged by Century Geophysical Corporation of Australia. Long and Short Spaced Density, Natural Gamma, Neutron-Neutron, Spontaneous Potential and Resistivity Logs were run in all

the holes logged.

In 82AWH2 and 4 the probes did not get to the bottom of the boreholes due to excessive mud cake on the hole walls, which blocked the probes passage.

Borehole 82AWH3 was not logged due to the unstable conditions prevailing in the hole.

6.2 Drilling

6.2.1 General

Four rotary-mud boreholes, for a total of 806 metres, were drilled using a Peter Nitschke Drilling/Century Geophysical combination (Plan SAa 1331).

The three boreholes in the south of the area all intersected the target horizon, the Mount Toondina coal measures. However borehole 82AWH3 was abandoned prior to intersecting the Mount Toondina coal measures as a strong artesian flow was encountered near the top of the Mesozoic Sandstone. As no special weighted drilling muds were available on site to stem the flow sufficiently to allow drilling to continue the hole was abandoned.

6.2.2 Borehole Results

The three boreholes in the south of the area, 82AWH1, 2 and 4 (Plan SAa 1331), all intersected significant coal seams. A summary of the coal intersections and coal zones appear in Tables 1 and 2 respectively.

The drilling data tied in fairly well with the interpretation of the CRAE "Nilpinna" gravity survey. With the low density of drilling, and so few boreholes, it was not possible to adequately test the inferred intra-basinal features interpreted from the gravity data. On a broad scale the interpreted deepening of the basin to the north and north-east was confirmed by the drilling. The estimated depths to the base of the Upper Permian, from the interpretation of the gravity data, proved to be generous. In the main this was due to the lack of adequate density control for the various formations.

Summary borehole logs are presented in Appendix I.

Full geophysically corrected borehole geological logs are presented in Appendix II.

Computer drafted graphic geological and geophysical logs are presented in Appendix III.

6.2.3 Evaluation of Coal Intersections

Correlation of individual coal seams between the three boreholes in the south of the E.L., 82AWH1, 2 and 4, (Plan SAa 1666, 1665, 1664, 1710) is only moderate. Any correlation, with the available data, must be regarded as speculative given the degree of seam splitting, and the erosion of the upper portion of the coal zone in 82AWH1 and 2 (Plan SAa 1710).

From detailed seam correlation (Plan SAa 1666, 1665, 1664, 1710) it became apparent that:

1) Post-Permian erosion has stripped the upper horizons of the Mount Toondina Formation on the basin margins. The degree of erosion, prior to the deposition of the Algebuckina Sandstone, appears to be a function of position in the basin, with a greater thickness of Mount Toondina Formation being on the margins than towards the centre of the basin. By extrapolation it is concluded that two metres of coal measures in 82AWH2, and eight metres in 82AWH1 have been eroded compared to 82AWH4. The cross-sections and geophysical logs appear to indicate that some of the upper Mount Toondina Formation has been eroded in 82AWH4.

2) The coal seams are relatively thin, attaining a maximum thickness of 2.1 metres. Seam correlation between boreholes is complicated by:

a] The number of relatively thin seams; these do not produce a "signature" on the geophysical logs.
b] Rapid thinning of the coal seams and inter-seam sediments to the west and south.
c] Several instances of seam splitting.
d] Seams lensings out. The three lower seams in 82AWH4 lense out to the south. The top seam in 82AWH2 is laterally discontinuous, being absent in the boreholes 82AWH1 and 4; in 82AWH1 this is probably due to erosion.
e] Lateral facies variation. Over relatively short distances the coal seams grade into carbonaceous mudstone.

These factors combine to make seam correlation between the boreholes speculative.

With increasing depth to the Mount Toondina Formation, to the north and north-east from 82AWH1, and east from 82AWH2, it was found that:

1] The individual coal seams thicken.
2] Generally there is less seam splitting, with seams

coalescing. In part this accounts for the thicker seams.
3] The thicknesses of the inter-seam waste units increase.
4] The inter-seam sediments coarsen; the proportion of sandstone increases, while the proportion of mudstone decreases in the inter-seam units.
5] The thickness of the coal zone increases. In part this is due to less erosion of the Mount Toondina Formation in the deeper parts of the basin. The main reason for the much increased thickness is the greater thickness of inter-seam sediments, and in 82AWH4 the extra two lower seams.

The coal quality interpreted from the geophysical logs and sample return appear to indicate no quality change, in individual seams, with depth. Without core the interpreted coal quality is subjective and relates mainly to the ash content. The upper seam in 82AWH4, form the sample return, appeared to be more immature than the other coals intersected. Most of the coal seams appear to be of low bituminous rank, based on the limited data available.

While the drilling programme was fairly limited it is possible to draw several conclusions regarding the economic potential of the coal within the E.L.:

A. Northern Area

While no Mount Toondina Formation sediments were intersected in 82AWH3 it appears that the potential for an economic coal deposit is limited as:

1] The Bulldog Shale in 82AWH3 is 91.5 metres thick. By extrapolation from the southern area the minimum depth to the top of the Mount Toondina Formation would be 140 metres. A maximum overburden cut-off of 120 metres is at present considered the economic limit for this type of coal. With only one hole drilled in this northern area any conclusions on depths must be at best tentative. However the regional geophysics, tied in with the drill information, suggest that large areas of coal at less than 120 metres is unlikely.

2] The unconfined aquifer in the Mesozoic sands overlying the Mount Toondina coal measures would present problems in any open-cast mining operation. These problems while not insurmountable would be costly to overcome.

B. Southern Area

From the available data it is concluded that:

1] The thickest coal seams are at greatest depth. The shallower (<120 metre) coal seams are thin, generally too thin to be considered for mining. With the available data pointing to the coal seams thinning and splitting as it shallows there is little prospect for thick coal seam development at depths less than 120 metres.

Table 1: Summary of Coal Intersections

Borehole No.	Depth of Coal Seam [m]		Thickness of Coal Seam [m]	Description of Seam Quality
	From	To		
82AWH1	102.98	103.17	0.19	Coal, mixed
	108.87	109.07	0.20	Coal, mixed
	109.38	109.56	0.18	Coal, mixed
	110.57	110.80	0.23	Coal, mixed, mainly dull
	111.38	111.54	0.16	Coal, mixed, mainly dull
	114.16	114.34	0.18	Coal, mixed
	114.92	115.58	0.66	Coal, mixed; mainly dull to top & mainly bright to bottom [incl. 0.20 Mudstone coaly band in middle]
82AWH2	118.60	119.96	1.36	Coal, dull; mixed to top [incl. 0.27 Mudstone to base]
	127.72	127.94	0.22	Coal, mixed
	132.96	133.36	0.40	Coal, mixed
	136.92	137.39	0.47	Coal, mixed, mainly dull
	143.08	143.44	0.36	Coal, mixed, mainly dull
	153.36	153.83	0.47	Coal, mixed
82AWH4	130.98	132.04	1.06	Coal, mixed; immature
	142.52	143.74	1.22	Coal, mixed; mainly dull to base
	151.75	153.22	1.47	Coal, mixed
	162.96	163.37	0.41	Coal, dull
	164.96	165.35	0.39	Coal, mixed
	167.40	169.50	2.10	Coal, mixed; dull in middle
	194.24	194.53	0.29	Coal, mixed; mainly dull
	195.42	196.38	0.96	Coal, mixed, mainly dull; dull to base

N.B. The depth, thickness and quality of coal seams interpeted from the geophysical logs.

Table 2: Summary of Coal Zones

Borehole No.	Coal Zone [m]		Coal Zone Thickness [m]	Maximum Individual Coal Thickness[1] [m]	Aggregate Coal Thickness[1] [m]	Maximum Coal Seam Thickness[2] [m]	Aggregate Coal Seam Thickness[2] [m]	Number of Coal Seams	% Coal in Coal Zone
	From	To							
82AWH1	102.98	115.18	12.20	0.31	1.60	0.66	1.80	7	13%
82AWH2	118.60	153.83	35.23	0.73	3.01	1.36	3.28	6	9%
82AWH4	130.98	196.38	65.40	2.10	7.90	2.10	7.90	8	11%

N.B. The depth, thickness and quality of coal seams interpreted from the geophysical logs.

1. Coal only, no waste included.
2. Includes non-coal material within seam unit, where non-coal material is less than approximately equal to extra coal gained. Maximum thickness of non-coal added 0.27m.

2] The proportion of coal within the coal zone varies between 9-13% and appears to be independent of depth control. With such a low coal to wast ratio within the coal zone open cast mining, even on a selective basis, would not be viable however shallow the coal.

3] The upper horizons of the Mount Toondina Formation coal measures are increasingly eroded off towards the basin margin, where the coal seams would be shallowest. It appears unlikely that coal will be preserved on the basin margins.

Given the above conclusions it is apparent that the potential for shallow (<120 metres) thick coal seam development is remote. Therefore it is concluded that the area has little potential for an economically viable open csst coal deposit.

Underground mining is not considered to be an economically viable alternative due to the relatively unconsolidated nature of the sediments and the additional cost compared to open-cast mining.

6.2.4 Multicommodity Analyses

Selected samples of the various stratigraphic units of the Mesozoic and Permian sediments from 82AWH1, 2 and 4 were analysed for oil yield, lead, zinc, copper and gold.

The gold values in 82AWH4 from the Mesozoic sands were all above detection peaking at 0.125 grams/tonne. Oil yields ranged from minimum detection to ±20 litres/tonne. None of the base metal values were anomalous.

These results do not warrant further exploration.

The analytical data sheets are presented in Appendix IV.

D.R. McBAIN

DRM/pw

KEYWORDS

Warrina SH 53-3, Arckaringa Basin, Permian, Mesozoic, Bulldog Shale, Algebuckina Sandstone, Cadna-owie Sandstone, Mount Toondina Formation, Stuart Range Formation, Coal-black, Geophys-borehole, Geophys-grav, Drill-rotary, Drill-assay, Data Review.

LOCATION

Warrina SH 53-3 1:250 000

LIST OF PLANS

Plan No.	Title	Scale
SAa 1331	Wirrangula Hill E.L. 924 - Drilling Programme - Borehole Location	1:100 000
SAa 1666	Wirrangula Hill E.L. 924 - Interpreted Geological Cross-Section 82AWH3-2-1, Looking East	1:100 000
SAa 1665	Wirrangula Hill E.L. 924 - Interpreted Geological Cross-Section 82AWH1-4, Looking North-West	1: 50 000
SAa 1664	Wirrangula Hill E.L. 924 - Interpreted Geological Cross-Section 82AWH2-4, Looking North	1: 50 000
SAa 1710	Wirrangula Hill E.L. 924 - Schematic Cross-Section 82AWH1-2-4, Looking South-East	1:100 000

LIST OF APPENDICES

Appendix I	Summary Borehole Logs
Appendix II	Geophysically Corrected Borehole Geological Logs
Appendix III	Computer Drafted Graphic Geological and Geophysical Logs
Appendix IV	Multicommodity Analytical Data Sheets

SW

1

BORE : 82 AWH 1

DEPTH (M)

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200

NE

4

BORE : 82 AWH 4

DEPTH (M)

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240

Mudstone/Siltstone/Sandstone

Mudstone

Mudstone

LEGEND

LITHOLOGY REFERENCE

COAL

SAND

MUDSTONE

SANDSTONE

SILTSTONE

SOIL (ALLUVIUM)

SCALE

KILOMETRES 0 2 4 6 8 10 KILOMETRES

CRA EXPLORATION PTY LTD

WIRRANGULA HILL

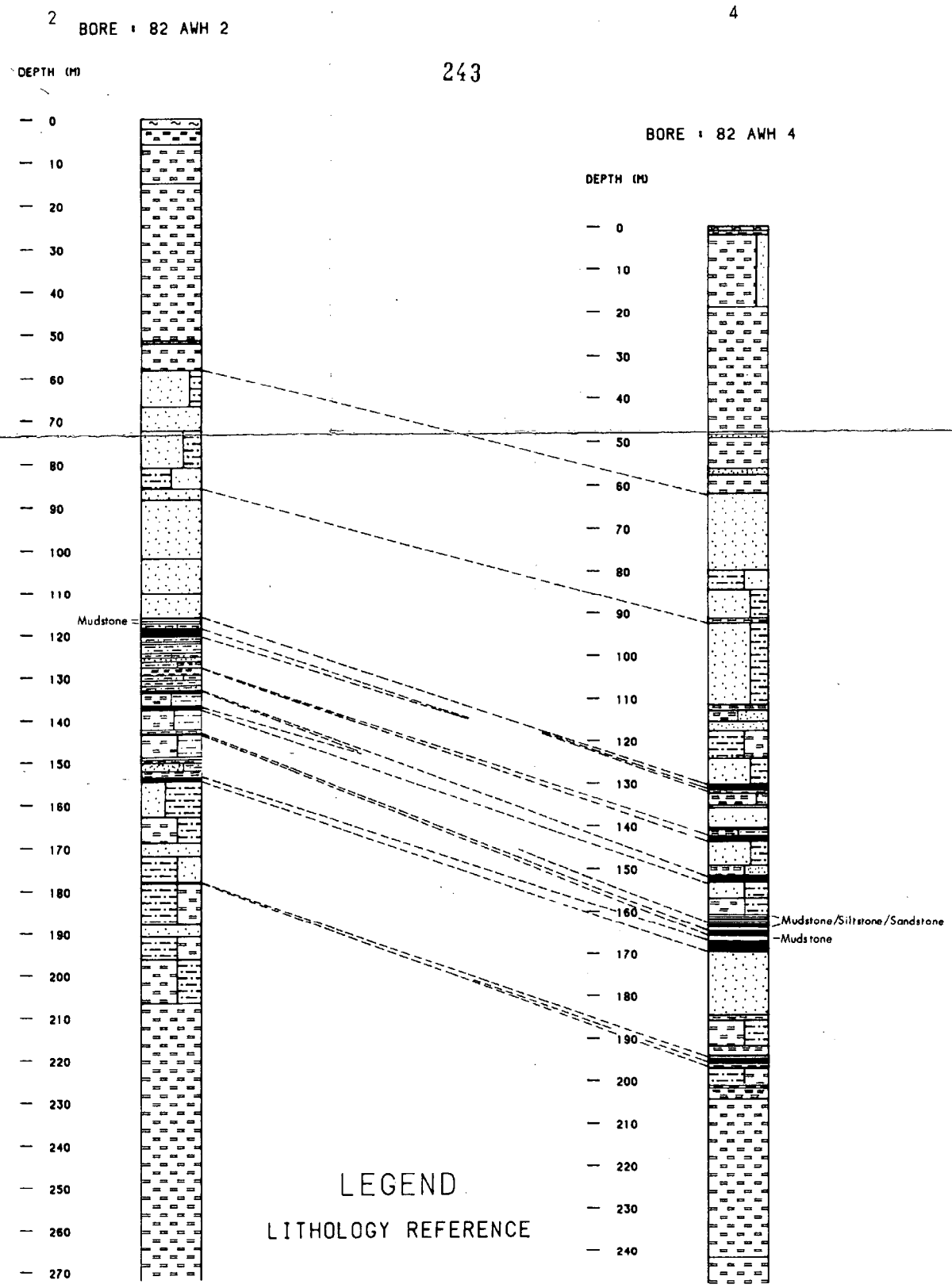
INTERPRETED GEOLOGICAL CROSS SECTION

AWH 1-4

REF: WARRINA SH 53-3	
SCALE 1:100,000	
AUTHOR: D.McBAIN	REPORT No.: 11477
DATE: JULY 1982	PLAN No.: SAa 1665

W

E



LEGEND

LITHOLOGY REFERENCE

- COAL
- SANDSTONE
- MUDSTONE
- SOIL (ALLUVIUM)
- SILTSTONE

SCALE

KILOMETRES 0 2 4 6 8 10 KILOMETRES

CRA EXPLORATION PTY LTD

WIRRANGULA HILL

INTERPRETED GEOLOGICAL CROSS SECTION

82 AWH 2-4

REF: WARRINA SH 53 -3	
SCALE 1:100,000	
AUTHOR: D. McBAIN	REPORT No.: 11477
DATE: JULY 1982	PLAN No.: SAa1664

S

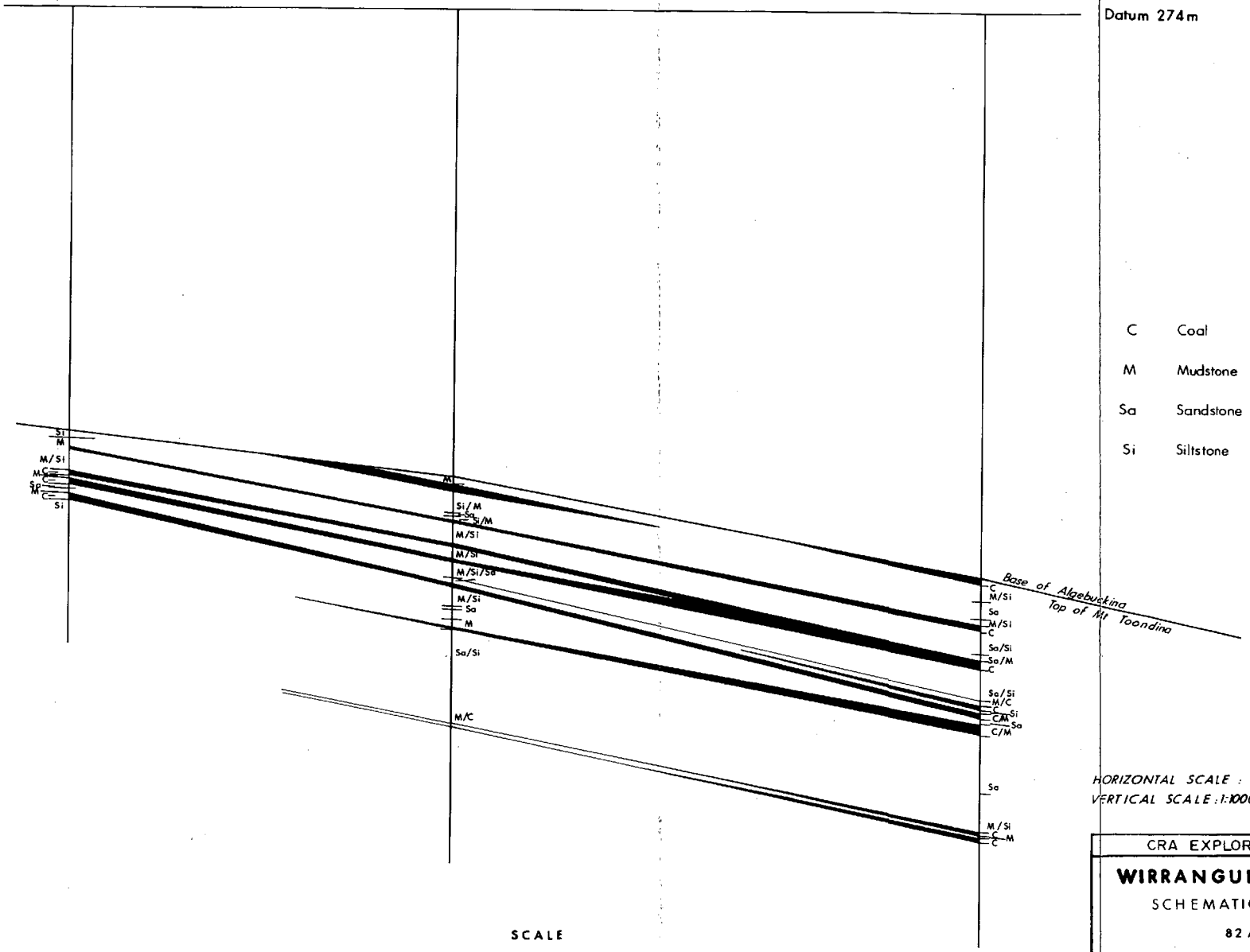
N

82AWH1

82AWH2

82AWH4

Datum 274m



C Coal

M Mudstone

Sa Sandstone

Si Siltstone

SCALE

0 5 10 KILOMETRES

HORIZONTAL SCALE : 1:100,000

VERTICAL SCALE : 1:1000

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L 924

SCHEMATIC CROSS SECTION

82 AWH 1-2-4

Ref. WARRINA SH53-3	
Scale 1:100 000	Drawn D.D.
Author D. Mc Bain.	Report No. 11477
Date AUG. 1982	Plan No. SAa 1710

APPENDIX I

SUMMARY BOREHOLE LOGS

Summary Borehole Logs

82AWH1

3.6m	Soil and Sand	Bulldog Shale
45.2m	Mudstone, grey to dark grey, weathered to top; occasional sandstone bands	
61.4m	Sandstone, light grey, very fine to coarse grained, few sub-angular to sub-rounded pebbles, well sorted, feldspathic-quartzose; two mudstone bands	Cadna-owie Sandstone
98.3m	Sandstone. light grey, fine to very coarse grained, few quartz pebbles to base, moderately sorted, quartzitic, finer generally in middle; mudstone and siltstone alternations in middle	Algebuckina Sandstone
115.6m	Coal Measure - coal seams with inter-seam mudstone, siltstone and minor sandstone	Mount Toondina Formation
180.8m	Sandstone, light grey, very fine to medium grained, micaceous with lesser mudstone and siltstone alternations	
200.0m	Mudstone, grey-brown, slightly carbonaceous	Stuart Range Formation
	Final Depth 200.0 metres	

82AWH2

2.3m	Soil	Bulldog Shale
58.2m	Mudstone, dark grey to dark olive-grey, weathered to top; sandstone band to base	
85.8m	Sandstone, off-white to light grey, very fine to granular grained, sub-angular quartz pebbles, well sorted micaceous, feldspathic-quartzose; siltstone bands throughout	Cadna-owie Sandstone
116.2m	Sandstone, off-white to light grey, fine to occasionally granular grained, sub-rounded quartz pebbles to top, well sorted, feldspathic-quartzose	Algebuckina Sandstone
118.6m	Mudstone, dark grey, slightly carbonaceous in parts; siltstone alternations to base	Mount Toondina Formation
153.8m	Coal Measures-coal seams with inter-seam mudstone, siltstone and sandstone	
177.9m	Sandstone, very fine to medium grained, mudstone, some carbonaceous, and siltstone alternations	
206.7m	Mudstone, grey, carbonaceous bands, alternates with siltstone, light grey; sandstone band in middle	
272.0m	Mudstone, grey, micaceous and silty bands	Permian Undifferentiated
	Final Depth 272.0 metres	

82AWH3

4.0m	Soil	
91.5m	Mudstone. dark grey to olive-grey, weathered to top; slightly silty bands to base	
96.0m	Sandstone, light grey, fine to coarse grained, moderately sorted. Artesian aquifer with strong flow	
	Hole abandoned at 96.0 metres	

82AWH4

1.0m	Soil	
62.1m	Mudstone, grey to dark grey; sandstone bands throughout; weathered to top	Bulldog Shale
92.6m	Sandstone, light grey, fine to granular grained, well sorted, quartzitic; siltstone bands in finer parts; mudstone band at base	Cadna-owie Sandstone
130.5m	Sandstone, off-white to light grey, very fine to granular grained, well sorted, quartzitic; siltstone and lesser mudstone alternations throughout	Algebuckina Sandstone
131.0m	Mudstone, dark brown-grey, carbonaceous to top	
169.5m	Coal Measures-coal seams with inter-seam sandstone, siltstone and mudstone	
184.8m	Sandstone, light grey, fine to coarse grained, micaceous	
194.2m	Mudstone, dark brown-grey, slightly carbonaceous to top, silty and slightly micaceous bands to base; siltstone alternations in middle	Mount Toondina Formation
194.5m	Coal	
195.4m	Mudstone, increasingly carbonaceous to base	
196.4m	Coal	
204.6m	Mudstone, grey to dark brown, two carbonaceous bands; alternates with siltstone in middle	
242.0m	Mudstone, grey to brown-grey, increasingly silty to base, slightly micaceous	Permian Undifferentiated
248.0m	Mudstone, grey-brown	
	Final Depth 248.0 metres	

APPENDIX II

GEOPHYSICALLY CORRECTED BOREHOLE GEOLOGICAL LOGS

CRA EXPLORATION

ARCKARINGA BASIN - WIRRANGULA HILL

LISTED 06-MAY-82

HOLE NUMBER	:82 AWH 1	PARISH	:
HOLE TYPE	:ROTARY	HUNDRED	:
GRID TYPE	:AMG	SECTION	:
EASTING	:520700	LOG ORGN	:CRA
NORTHING	:6825450	LOGGED BY	:DRM
ACCURACY	:APPROX.	DRILL CNTRCTR	:P.NITSCHKE
DATUM	:AHD	DRILL TYPE	:BOURNE 2000
COLLAR RL	:267.0	TECHNIQUE	:MUD
SHEET REF	:SH53-3	CORE SIZE	:
TOTAL DEPTH	:200.00	GEOPHYS. CNTRCTR	:CENTURY GEOPHYSICS.
COMMENCED	:03/04/82	WATER LEVEL	:14.6
COMPLETED	:04/04/82	DATE MEASURED	:04/04/82
INCLINATION	:-90	PLUG DEPTH	:
AZIMUTH	:	CASED DEPTH	:6.0
		UNITS	:METRES

OPEN HOLE 0.00 TO 200.00M B.O.H.
SAMPLES 893400 TO 893411 TAKEN OVER INTERVAL 66 TO 92M DRILL DEPTH,
CORRECTED DEPTH 61.40M TO TOP OF SAMPLE 893400.
SAMPLES 893412 TO 893417 TAKEN OVER INTERVAL 110 TO 118M DRILL DEPTH,
CORRECTED DEPTH 102.79M TO TOP OF SAMPLE 893412.
SAMPLES 893416 TO 893434 TAKEN OVER INTERVAL 182 TO 200m DRILL DEPTH,
CORRECTED DEPTH 180.80M TO TOP OF SAMPLE 893416.
ALL SAMPLES DESPATCHED ON D.P.O. NO. 80701

********** INFORMATION ADDED BY CRUNCH **********

******** REMARKS ********
VARIABLE REMARKS INDICATES COMMENTS/REMARKS
ARE PRESENT IN THE BINARY FILE.

********** NO TRANSFORMATIONS OR SELECTIONS WERE MADE DURING CRUNCH *********

NUMBER OF RECORDS WRITTEN IS : 56
RECORD LENGTH IS : 5

ARCKARINGA BASIN - WIRRANGULA HILL

EPTH O BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
2.00	2.00	Soil	Red - Brown Fine Grained Very loose sand Soil	
3.60	1.60	Sand	Light Grey Fine to Medium Grained Subrounded grains Moderately sorted Loose sand Completely weathered Secondary Gypsum Common	
			TOP OF Bulldog Shale, 3.60m	
15.20	11.60	Mudstone	Mottled Light Grey Orange - Brown Slightly Silty Weak rock Very weathered Plastic	
36.80	21.60	Mudstone	Grey Dark Grey Slightly Silty Bands Weak rock Plastic Thin Sandstone Band In Middle	
45.20	8.40	Mudstone Mudstone Sandstone	60% : Grey Dark Grey Weak rock Plastic 20% : Silty 20% : Very Fine to Medium Grained Moderately sorted Muddy	
			BASE OF Bulldog Shale, 45.20m	
			GEOLOGICAL THICKNESS 41.60m	
			TOP OF Cadna-owie Sandstone 45.20m	
50.20	5.00	Sandstone	Light Grey Very Fine to Coarse Grained Subrounded to well rounded Well sorted Feldspathic-Quartzose Moderately weak rock Two Upward Fining Cycles; Muddy Matrix In Finer Parts; Few Sub-angular To Sub-rounded Pebbles In Coarser Parts	
51.20	1.00	Mudstone	Silty	
59.60	8.40	Sandstone Mudstone	90% : Light Grey Very Fine to Medium Grained Moderately sorted Moderately weak rock Coarsening upwards 10% : Towards Base of Unit Silty	
61.40	1.80	Mudstone	Silty	
			BASE OF Cadna-owie Sandstone 61.40m	
			GEOLOGICAL THICKNESS 15.20m	
			TOP OF Algebuckina Sandstone	

RCKARINGA BASIN - WIRRANGULA HILL

PTH BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
88.50	27.10	Sandstone	Light Grey Fine to Very Coarse Grained Subrounded to well rounded Moderately sorted Quartzitic Moderately weak rock	
92.60	4.10	Mudstone Sandstone	70% : Grey - Brown Slightly Silty Bands Weak rock 30% : Medium to Coarse Grained Moderately sorted	
95.00	2.40	Siltstone Sandstone	60% : Grey Muddy Moderately weak rock 40% : Light Grey Very Fine to Medium Grained Subrounded grains Moderately sorted Weak rock	
98.30	3.30	Sandstone	Light Grey Medium to Very Coarse Grained Subangular to subrounded Granular Moderately sorted Quartzitic Weak rock Silty Matrix; Few Angular Quartz Grains < 20mm.	

BASE OF Algebuckina Sandstone , 98,30 m

GEOLOGICAL THICKNESS 36,90 m

TOP OF Mount Toondina Formation , 98,30 m

101.20	3.96	Siltstone	Light Grey Dark Grey Micaceous Sandy To Tor Moderately weak rock	
102.70	1.50	Mudstone	Grey Weak rock	
102.98	0.18	Mudstone	Dark Grey - Brown Slightly Carbonaceous Weak rock	
103.17	0.19	Coal	Black Mixed (40-60%) Moderately weak rock	
103.52	0.35	Mudstone	-	
103.68	0.16	Mudstone	Carbonaceous	
104.76	1.08	Mudstone Siltstone	50% : Slightly Silty 50% : -	
106.34	1.58	Mudstone Mudstone	60% : Carbonaceous 40% : -	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
106.93	0.59	Mudstone	-	
107.22	0.29	Mudstone	Coaly	
107.62	0.40	Siltstone	-	
107.78	0.16	Mudstone	Carbonaceous	
107.98	0.20	Mudstone	Silty	
108.20	0.22	Mudstone	Carbonaceous	
108.87	0.67	Mudstone Siltstone	60% : Towards top of Unit 40% : -	
109.07	0.20	Coal	Mixed (40-60%)	
109.38	0.31	Mudstone	Silty	
109.56	0.18	Coal	Mixed (40-60%)	
109.79	0.23	Mudstone	Coaly	
110.57	0.78	Siltstone Mudstone	70% : - 30% : -	
110.80	0.23	Coal	Mixed Mainly Dull (25-40%)	
110.98	0.18	Mudstone	-	
111.20	0.22	Mudstone	Carbonaceous	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
11.38	0.18	Siltstone	Muddy	
11.54	0.16	Coal	Mixed Mainly Dull (25-40%)	
11.74	0.20	Mudstone	-	
11.99	0.25	Mudstone	Carbonaceous	
13.41	1.42	Sandstone Siltstone	70% : Very Fine Grained Silty Matrix 30% : Sandy	
13.69	0.28	Siltstone	Sandy Carbonaceous	
14.16	0.47	Siltstone	Sandy	
14.34	0.18	Coal	Mixed (40-60%)	
14.92	0.58	Siltstone	Muddy	
15.07	0.15	Coal	Mixed Mainly Dull (25-40%)	
15.27	0.20	Mudstone	Coaly	
15.58	0.31	Coal	Mixed Mainly Bright (60-75%)	
15.99	0.41	Mudstone Mudstone	50% : Towards top of Unit 50% : Slightly Carbonaceous	
35.20	19.21	Siltstone Mudstone Sandstone	60% : Light Grey Muddy Weak rock 20% : Brown - Grey Grey Silty Moderately weak rock 20% : Very Fine to Medium Grained Moderately sorted	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
159.00	23.80	Siltstone	50% : -	
		Sandstone	50% : Towards middle of Unit Very Fine to Medium Grained Moderately sorted	
169.60	10.60	Mudstone	60% : Grey Silty Bands Weak rock Secondary Pyrite Sparse Nodules	
		Siltstone	40% : Muddy	
172.20	2.60	Sandstone	80% : Light Grey Fine to Medium Grained Subrounded grains Well sorted Micaceous Weak rock	
		Siltstone	20% : Grey Weak rock	
174.90	2.70	Mudstone	80% : Grey Silty Weak rock	
		Mudstone	20% : Grey Weak rock	
180.80	5.90	Sandstone	60% : Light Grey Very Fine to Medium Grained Subrounded grains Well sorted Micaceous Weak rock	
		Mudstone	40% : Grey Silty Weak rock	

BASE OF Mount Toondina Formation : 180.80m

GEOLOGICAL THICKNESS 82.50 m

TOP OF Stuart Range Formation : 180.80 m

200.00	19.20	Mudstone	50% : Grey - Brown Slightly Carbonaceous Weak rock Sticky Clay	
		Mudstone	50% : Grey - Brown Silty Slightly Carbonaceous Weak rock Sticky Clay	

END OF BORE HOLE AT 200.00m.

CRA EXPLORATION

ARCKARINGA BASIN - WIRRANGULA HILL

LISTED 06-MAY-82

LISTING OF ARCHIVAL INFORMATION FOR THE INPUT DATA

HOLE NUMBER	:82 AWH 2	PARISH	:
HOLE TYPE	:ROTARY	HUNDRED	:
GRID TYPE	:AMG	SECTION	:
EASTING	:520550	LOG ORGN	:CRA
NORTHING	:6834500	LOGGED BY	:DRM
ACCURACY	:APPROX.	DRILL CNTRCTR	:P. NITSCHKE
DATUM	:AHD	DRILL TYPE	:BOURNE 2000
COLLAR RL	:274.0	TECHNIQUE	:MUD
SHEET REF	:SH53-3	CORE SIZE	:
TOTAL DEPTH	:272.00	GEOPHYS. CNTRCTR	:CENTURY GEOPHYSICS.
COMMENCED	:05/04/82	WATER LEVEL	:27.8
COMPLETED	:07/04/82	DATE MEASURED	:07/04/82
INCLINATION	:-90	PLUG DEPTH	:
AZIMUTH	:	CASED DEPTH	:7.0
		UNITS	:METRES

OPEN HOLE 6.00 TO 272.00M P.O.H.
GEOPHYSICS LOG ONLY TO 204.4M AS HOLE BLOCKED.
SAMPLES B93401 TO B93439 TAKEN OVER INTERVAL 98 TO 118M DRILL DEPTH.
CORRECTED DEPTH 95.60M TO TOP OF SAMPLE B93420.
SAMPLE B93440 TO B93444 TAKEN OVER INTERVAL 132 TO 140M DRILL DEPTH.
CORRECTED DEPTH 127.21M TO TOP OF SAMPLE B93440.
ALL SAMPLES DESPATCHED ON B.P.O. NO. B0711.

********** INFORMATION ADDED BY CRUNCH **********

******** REMARKS ********
VARIABLE REMARKS INDICATES COMMENTS/REMARKS
ARE PRESENT IN THE BINARY FILE.

******** NO TRANSFORMATIONS OR SELECTIONS WERE MADE DURING CRUNCH ********

NUMBER OF RECORDS WRITTEN IS : 45
RECORD LENGTH IS : 3

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
2.30	2.30	Soil	Red - Brown Fine Grained Silty Very loose sand Soil Secondary Gypsum Common	
			TOP OF Bulldog Shale. 2.30m (2.3m)	
6.00	3.70	Mudstone	Light Grey Weak rock Very weathered Secondary Iron Oxide Common On bedding planes	
15.00	9.00	Mudstone	Dark Olive - Grey Silty Bands Indurated Bands Moderately weak rock Slightly weathered Secondary Iron Oxide Sparse On bedding planes	
31.50	3.50	Mudstone Mud tone	30% : Dark Grey Moderately weak rock 50% : Towards middle of Unit Dark Grey Silty Moderately weak rock Few Thin Sandstone Bands	
37.10	5.60	Sandstone	Fine to Medium Grained Moderately sorted	
58.20	21.10	Mudstone Mudstone	80% : Dark Olive - Grey Weak rock Plastic 20% : Dark Olive - Grey Silty Moderately weak rock	
			BASE OF Bulldog Shale 58.20m	
			GEOLOGICAL THICKNESS 55.90m	
			TOP OF Cadlareena Sandstone - 58.20m	
72.00	13.80	Sandstone Sandstone	80% : Off - White Fine to Very Coarse Grained Subangular to subrounded Well sorted Feldspathic-Quartzose Silty Matrix Weak rock Granular Pinch With Sub-angular Quartz Pebbles < 7mm 20% : -	
82.50	10.50	Sandstone	80% - White Fine to Coarse Grained Subangular to subrounded Well sorted Weak rock Decreases Upward.	
91.00	8.50	Siltstone Siltstone	70% : Light Grey Very Firm to Medium Grained Subrounded grains Moderately sorted Micaceous Moderately weak rock 30% : Light Grey Sandy Weak rock	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
85.80	4.80	Siltstone Sandstone	50% : Light Grey Slightly Silty Weak rock 50% : Light Grey Fine to Very Coarse Grained Subangular to subrounded Well sorted Feldspathic-Quartzose Silty Matrix Micaceous Moderately weak rock	
			BASE OF Cadna-owie Sandstone , 85.80 m	
			GEOLOGICAL THICKNESS 27.60m	
			TOP OF Algebuckina Sandstone , 85.80 m	
98.40	2.60	Sandstone	Light Grey Medium to Very Coarse Grained Subangular to subrounded Granular Well sorted Feldspathic-Quartzose Micaceous Moderately weak rock. Few Subrounded Quartz Grains . [illegible]	
102.00	17.10	Sandstone	Off - White Light Grey Fine to Very Coarse Grained Subangular to subrounded Well sorted Feldspathic-Quartzose Dolomitic Matrix Moderately weak rock.	
110.20	8.20	Sandstone	Off - White Light Grey Medium to Very Coarse Grains Subangular to subrounded Granular Well sorted Feldspathic-Quartzose Weak rock.	
116.16	[illegible]	[illegible]	Light Grey Very Fine to Medium Grained Moderately sorted Moderately weak rock	
			BASE OF Algebuckina Sandstone , 116.16m	
			GEOLOGICAL THICKNESS 30.36 m	
			TOP OF Mount Toondina Formation , 116.16m	
116.28	0.12	Mudstone	Dark Grey Slightly Carbonaceous.	
116.[illegible]	0.[illegible]	Mudstone	Dark Grey Weak rock	
117.50	0.22	Mudstone	Dark Grey Slightly Carbonaceous Weak rock	
118.60	1.10	Siltstone Mudstone	50% : Sandy 50% : Dark Grey Weak rock	

ROCKARINGA BASIN - WIRRANGULA HILL

DEPTH BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
118.90	0.30	Coal	Dark Brown - Black Mixed (40-60%) Moderately weak rock	
119.11	0.21	Coal	Dark Brown - Black Dull (<25%) Moderately weak rock	
119.33	0.22	Coal	Dark Brown - Black Mixed Mainly Dull (25-40%) Moderately weak rock	
119.60	0.27	Mudstone	Grey Silty Micaceous Weak rock	
119.96	0.36	Coal	Dark Brown - Black Dull (<25%) Weak rock	
120.16	0.20	Mudstone	Grey Weak rock	
120.43	0.27	Mudstone	Carbonaceous	
121.60	1.17	Siltstone		
122.[illegible]	0.4[illegible]	[illegible]		
124.[illegible]	0.10	Siltstone	Muddy	
124.[illegible]	0.[illegible]	Mudstone	Coaly	
125.36	0.87	Sandstone Siltstone	50% : Towards top of Unit 50% : -	
126.[illegible]	0.[illegible]	Sandstone	Fine to Coarse Grained Moderately sorted	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
127.72	1.50	Siltstone Mudstone	60% : - 40% : Grey Moderately weak rock	
127.94	0.22	Coal	Mixed (40-60%)	
129.56	1.62	Mudstone	Grey Moderately weak rock	
130.82	1.26	Siltstone Mudstone	70% : Sandy 30% : Slightly Silty	
132.00	1.18	Mudstone Mudstone	50% : Slightly Carbonaceous 50% : -	
132.96	0.96	Siltstone	-	
133.36	0.40	Coal	Mixed (40-60%) Dull Bands In Middle	
133.38	0.02	Mudstone	-	
136.18	2.80	Mudstone Siltstone	50% : Dark Grey Slightly Carbonaceous 50% : Grey	
136.31	0.13	Mudstone	Coaly	
136.62	0.31	Mudstone	Silty	
137.39	0.77	Coal	Mixed Mainly Dull (75-80%) Dull To Base	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
142.12	4.73	Mudstone Siltstone Sandstone	40% : Slightly Carbonaceous Bands 30% : - 30% : Very Fine to Fine Grained Well sorted	
142.49	0.37	Mudstone	Coaly	
143.08	0.59	Mudstone	Silty	
143.44	0.36	Coal	Mixed Mainly Dull (25-40%)	
148.70	5.26	Mudstone Siltstone	60% : Slightly Carbonaceous To Top 40% : Sandy	
149.50	0.80	Sandstone	Very Fine to Fine Grained Moderately sorted	
150.20	0.70	Mudstone	-	
152.10	1.90	Sandstone Siltstone	70% : Very Fine to Medium Grained Moderately sorted 30% : -	
153.36	1.26	Mudstone	Silty Band.	
153.83	0.47	Coal	Mixed (30-60%)	
154.11	0.28	Mudstone	Silty	
154.44	0.33	Mudstone	Carbonaceous	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
162.90	8.46	Sandstone Siltstone Mudstone	40% : Towards top of Unit Very Fine to Fine Grained Moderately sorted 30% : Towards Base of Unit 30% : Silty	
168.80	5.90	Mudstone Siltstone	60% : - 40% : Muddy Bands, Hard Band At Base	
172.00	3.20	Sandstone	Very Fine to Medium Grained Well sorted	
177.92	5.92	Siltstone Sandstone	60% : Light Grey Sandy Moderately weak rock 40% : Very Fine to Medium Grained Moderately sorted	
178.24	0.32	Mudstone	Carbonaceous	
187.98	9.74	Siltstone Mudstone	60% : Light Grey Moderately weak rock 40% : Silty	
190.80	2.82	Sandstone	Very Fine to Fine Grained Moderately sorted	
196.30	5.50	Siltstone Mudstone	60% : Light Grey Moderately weak rock 40% : Grey Silty Moderately weak rock	
206.70	10.40	Mudstone Siltstone	60% : Grey Weak rock 40% : Grey Moderately weak rock	

BASE OF Mount Toondina Formation -206.70m

GEOLOGICAL THICKNESS 90.54m

TOP OF Permian Undifferentiated -206.70m

272.70	65.30	Mudstone Mudstone	60% : Grey Weak rock 40% : Grey Silty Micaceous Moderately weak rock Less Silty To Base	

END OF BORE HOLE AT 272.00m.

CRA EXPLORATION

ARCKARINGA BASIN - WIRRAMGULA HILL

LISTED 04-MAY-82

ARCHARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
1.00	1.00	Soil	Red - Brown Clayey Soft clay Soil	
			TOP OF Bulldog Shale, 1.00m	
2.00	1.00	Mudstone	Light Grey Weak rock Moderately weathered Secondary Iron Oxide Abundant	
19.00	17.00	Mudstone	80% : Light Grey Olive - Grey Moderately weak rock Slightly weathered Secondary Iron Oxide Abundant On bedding planes Secondary Gypsum Common	
		Sandstone	20% : Light Orange - Brown Very Fine to Fine Grained Weak rock Slightly weathered Secondary Iron Oxide Abundant	
48.40	29.40	Mudstone	Dark Grey Silty Pond Indurated Band Moderately weak rock	
48.90	0.50	Sandstone	Light Grey Fine Grained Weak rock	
56.00	7.10	Mudstone	Dark Grey Silty Mudstone Moderately weak rock	
57.10	1.10	Sandstone	Light Grey Fine to Coarse Grained Subangular Weak rock	
62.10	5.00	Mudstone	Grey Weak rock Silty To Base	
			BASE OF Bulldog Shale 62.10m	
			GEOLOGICAL BOUNDARY 61.10m	
			TOP OF Archaeocyathid Limestone - 62.10m	
80.00	17.90	Sandstone	Light Grey Fine to Very Coarse Grained Siltstone to Subrounded Granular Sand. Pebbly Well sorted Quartzitic Fine Silty Matrix Weak rock Upward Finning Cycles With Silt Tops To Top Of Cycle	
84.00	4.00	Siltstone Sandstone	80% : Grey Moderately weak rock 20% : Light Grey Very Fine to Medium Grained Subangular to Subrounded Moderately Sorted Quartzitic Weak rock	
91.50	7.50	Siltstone	70% : Light Grey Fine to Very Fine to Medium Subangular to Subrounded Granular Well sorted Quartzitic Argillic Silty Matrix Weak rock Sandstone 30% : Light Grey Fine Moderately Weak rock	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
92.60	1.10	Mudstone	Grey Moderately weak rock	
			BASE OF Cadna-owie Sandstone , 92.60m	
			GEOLOGICAL THICKNESS 30.50m	
			TOP OF Algebuckina Sandstone , 92.60m	
111.60	19.00	Sandstone	70% : Light Grey Very Fine to Coarse Grained Subangular to subrounded Well sorted Quartzitic Silty Matrix Weak rock	
		Siltstone	30% : Grey Moderately weak rock	
113.00	1.40	Mudstone	60% : -	
		Mudstone	40% : Silty	
115.40	2.40	Mudstone	40% : Silty	
		Siltstone	40% : -	
		Sandstone	20% : Very Fine to Fine Grained Moderately sorted	
117.50	2.10	[illegible]	60% : Very Light Grey Fine to Very Coarse Grained Subangular to subrounded [illegible] Well sorted Slightly Silty matrix Weak rock Grades/ining upwards	
124.49	6.99	Siltstone	60% :	
		Mudstone	40% :	
130.49	5.00	Sandstone	70% : 20% : Very Light Grey Very Fine to Coarse Grained Subangular to subrounded Well sorted Quartzitic Weak rock Fining upwards 10% : Grey	
		Siltstone	30% : Grey Moderately weak rock	
			BASE OF Algebuckina Sandstone -130.49m	
			GEOLOGICAL THICKNESS 37.89m	
			TOP OF Bulldog Shale Formation -130.49m	
130.72	0.23	Mudstone	Dark Grey - Green Abundant Weak rock	
130.98	0.26	Sandstone	Weak rock	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
132.04	1.06	Coal	Dark Brown - Black Mixed (40-60%) Weak rock Dull In Middle; Immature; Sub-Bituminous Grade	
132.55	0.51	Mudstone	Dark Brown - Grey Slightly Carbonaceous Weak rock	
135.40	2.85	Mudstone Siltstone	80% : Slightly Silty 20% : -	
136.00	0.60	Mudstone	Dark Grey Weak rock	
140.60	[illegible]	Sandstone	[illegible] Fine To Coarse Grained Sub [illegible] To Subrounded Moderately Sorted Moderately Weak rock	
141.00	0.40	Mudstone	Grey Weak rock	
142.50	[illegible]	Mudstone Siltstone	50% : Silty Weak rock 50% : -	
143.[illegible]	[illegible]	Coal	Black Mixed (40-60%) Moderately Weak rock	
143.[illegible]	[illegible]	Coal	Black Mixed Mostly Dull (25-40%) Carbonaceous Weak rock	
149.40	[illegible]	Sandstone Siltstone	70% : Very Fine To Medium Grained Moderately Sorted 30% : Grey Micaceous Weak rock	
151.[illegible]	2.05	Mudstone Coal	60% : Grey Silty Slightly Micaceous Weak rock Slightly Carbonaceous To Base 40% : Very Fine To Fine Banded	
153.[illegible]	[illegible]	Coal	Mixed (40-60%)	
157.60	3.70	Sandstone Siltstone	60% : Very Fine To Medium Grained Moderately Sorted 40% : -	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
160.96	3.96	Mudstone Siltstone Sandstone	50% : Slightly Silty 30% : - 20% : Very Fine to Fine Grained	
161.30	0.34	Mudstone	Dark Brown Carbonaceous Weak rock	
161.75	0.45	Sandstone	Very Fine Grained	
161.96	0.21	Mudstone	Coaly	
162.[illegible]	0.58	Mudstone	Dark Grey Weak rock	
162.[illegible]	0.16	Siltstone	-	
163.[illegible]	0.11	Coal	Dull <25%	
163.[illegible]	0.39	Mudstone	Dark Grey Weak rock	
164.[illegible]	0.72	Sandstone	Very Fine to Medium Grained Moderately sorted	
164.[illegible]	0.56	Mudstone	Dark Brown - Grey Weak rock Slightly Carbonaceous To Base	
165.[illegible]	0.37	Coal	Mixed (40-60%)	
165.[illegible]	0.14	Mudstone	Dark Brown - Grey Weak rock	
167.[illegible]	1.29	Sandstone	Fine to Medium Grained Moderately sorted	
167.[illegible]	0.71	Mudstone	Dark Brown Carbonaceous Weak rock	
168.[illegible]	1.03	Coal	Black Mixed (40-60%) Dark rock	

ARCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
169.00	0.61	Coal	Black Dull (<25%) Weak rock	
169.50	0.41	Coal	Black Mixed (40-60%) Weak rock	
184.80	15.30	Sandstone	Light Grey Fine to Coarse Grained Subangular to subrounded Well sorted Micaceous Weak rock Thin Cemented Hard Bands	
186.00	1.20	Mudstone	Dark Brown - Black Slightly Carbonaceous Weak rock	
192.00	6.00	Mudstone Siltstone	60% : Dark Grey Weak rock 40% : Dark Grey Indurated Bands Moderately weak rock	
194.24	2.24	Mudstone Mudstone	50% : Dark Brown - Grey Moderately weak rock 50% : Dark Brown - Grey Silty Slightly Micaceous Moderately weak rock	
194.[illegible]	[illegible]	Coal	Mixed Mainly Dull (25-40%)	
194.[illegible]	[illegible]	[illegible]		
195.[illegible]	[illegible]	Mudstone	Carbonaceous	
195.[illegible]	[illegible]	Mudstone	Slightly Carbonaceous	
195.90	0.48	Coal	Mixed Mainly Dull (25-40%)	
196.[illegible]	[illegible]	Coal	Dull (< 25%)	
197.02	[illegible]	Mudstone		
197.28	[illegible]	Mudstone	Carbonaceous	

ORCKARINGA BASIN - WIRRANGULA HILL

DEPTH TO BASE	ESTIMATED THICKNESS	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SAMPLE NO.
201.40	4.12	Siltstone Mudstone	60% : - 40% : Grey Moderately weak rock	
201.80	0.40	Mudstone	Dark Brown - Black Carbonaceous Moderately weak rock	
204.60	2.80	Mudstone	Grey Slightly Silty Bands Moderately weak rock	
			BASE OF Mount Toondina Formation ,204.60m	
			GEOLOGICAL THICKNESS 74.11m	
			TOP OF Permian Undifferentiated ,204.60m	
242.00	37.40	Mudstone	Grey Brown - Grey Slightly Silty Bands Slightly Micaceous Moderately weak rock Increasingly Silty To Base	
248.00	6.00	Mudstone	Grey - Brown Moderately weak rock	
			END OF BORE HOLE AT 248.00m.	

APPENDIX III

COMPUTER DRAFTED GRAPHIC GEOLOGICAL & GEOPHYSICAL LOGS

APPENDIX IV

MULTICOMMODITY ANALYTICAL DATA SHEETS

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

277

3/1/6/0 - AC 5561/82

6 May 1982

amdel

NATA CERTIFICATE

REPORT COMPLETE

82AWH1

Mr. D.R. McBain,
CRA Exploration Pty. Ltd.,
P.O. Box 254,
NORWOOD S.A. 5067

REPORT AC 5561/82

YOUR REFERENCE: D.P.O. Number B 0711

IDENTIFICATION: As listed

DATE RECEIVED: 19 April 1982

D.K. Rowley
Manager
Analytical Chemistry Division

A.L. Bowditch
for Norton Jackson
Managing Director

cc The Manager,
CRA Exploration Pty. Ltd.,
P.O. Box 254,
NORWOOD S.A. 5067
(Invoice)

lc

Head Office:
Flemington Street, Frewville
South Australia 5063,
Telephone (08) 79 1662
Telex: Amdel AA82520
Pilot Plant:
Osman Place
Thebarton, S.A.
Telephone (08) 43 8053
Branch Laboratories:
Melbourne, Vic.
Telephone (03) 645 3093
Perth, W.A.
Telephone (09) 325 7311
Townsville
Queensland 4814
Telephone (077) 75 1377

ANALYSIS

L/Tonne

SAMPLE MARK	OIL YIELD
893412	>15
13	5-15
14	5-15
15	5-15
16	1.5-5
17	1.5-5
18	1.5-5
19	1.5-5
20	1.5-5
21	1.5-5
22	1.5-5
23	1.5-5
893424	1.5-5

Method: R7

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/1/6/0 - AC 5561/82

4 May 1982

NATA CERTIFICATE

PART REPORT 1

Mr. D.R. McBain,
CRA Exploration Pty. Limited,
P.O. Box 254,
NORWOOD S.A. 5067

REPORT AC 5561/82

YOUR REFERENCE:	*D.P.O. B 0711*
IDENTIFICATION:	*As listed*
DATE RECEIVED:	*19 April 1982*

D.K. Rowley
Manager
Analytical Chemistry Division

for Norton Jackson
Managing Director

cc The Manager,
CRA Exploration P/L,
P.O. Box 254,
NORWOOD S.A. 5067
(invoice)

ij

Pilot Plant: Osman Place
Thebarton S.A.,
Telephone 43 8053
Branch Laboratories:
Perth W.A.
Telephone 325 7311
Melbourne Vic.
Telephone 645 3093

amdel

Analysis code Cl Report AC 5561/82 Page 1

NATA Certificate Order B0711 Results in ppm

Sample	Cu	Pb	Zn
893400	6	30	36
893401	2	5	14
893402	8	15	38
893403	4	10	26
893404	2	5	12
893405	2	10	6
893406	2	10	8
893407	4	15	100
893408	6	20	280
893409	2	10	28
893410	4	10	30
893411	2	15	55
893412	28	35	95
893413	28	40	130
893414	20	35	100
893415	18	30	70
893416	18	25	70
893417	22	40	95
893418	18	30	75
893419	22	35	85
893420	22	40	90
893421	22	40	85
893422	20	35	85
893423	20	40	95
893424	22	35	95
Detn limit	(2)	(5)	(2)

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

3/1/6/0 - AC 5872/82

26 May 1982

amdel

NATA CERTIFICATE

PART REPORT 1

Mr. D.R. McBain,
CRA Exploration Pty.Ltd.,
P.O. Box 254,
NORWOOD S.A. 5067

REPORT AC 5872/82

YOUR REFERENCE: *D.P.O. Number: B 0712*

IDENTIFICATION: *As listed*

DATE RECEIVED: *3 May 1982*

ANALYSIS
L/Tonne

SAMPLE MARK	*OIL YIELD*
893440	*5-15*
41	*5-15*
42	*1.5-5*
43	*5-15*

Method: R7

Wirrangula Hill
82 AWH 2.

D.K. Rowley
Manager
Analytical Chemistry Division

for Norton Jackson
Managing Director

cc The Manager,
CRA Exploration Pty.Ltd.,
P.O. Box 254,
NORWOOD S.A. 5067

(Invoice)

le

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Telephone (08) 79 1662
Telex: Amdel AA82520
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Telephone (03) 645 3093
Perth, W.A.
Telephone (09) 325 7311
Townsville
Queensland 4814
Telephone (077) 75 1377

ANALYSIS

g/Tonne

SAMPLE MARK	GOLD Au
893425	0.055
26	0.065
27	0.070
28	0.070
29	0.080
30	0.060
31	0.105
32	0.055
33	0.070
34	0.060
35	0.070
36	0.075
37	0.060
38	0.070
893439	0.285

Method: K4/2

The Australian
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P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/1/6/0 - AC 5872/82

1 June 1982

NATA CERTIFICATE

REPORT COMPLETE

Mr D R McBain
CRA Exploration Pty Limited
PO Box 254
NORWOOD SA 5067

REPORT AC 5872/82

YOUR REFERENCE:	DPO Number B 0712
IDENTIFICATION:	As listed
DATE RECEIVED:	3 May 1982

Waangula Hill
4511

D.K. Rowley
Manager
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Queensland 4814
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Analysis code C1 Report AC 5272/82 Page 1

NATA Certificate Order B 8712 Results in ppm

Sample	Cu	Pb	Zn
893425	6	30	90
893426	6	15	44
893427	4	10	36
893428	2	5	16
893429	8	20	60
893430	4	10	40
893431	<2	10	18
893432	2	10	26
893433	2	15	26
893434	<2	5	10
893435	<2	5	10
893436	<2	5	8
893437	2	20	60
893438	2	15	20
893439	6	20	70
893440	12	35	100
893441	14	25	95
893442	8	25	100
893443	16	35	110
Detn limit	(2)	(5)	(2)

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Please address all
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In reply quote:

amdel

NATA CERTIFICATE

3/1/6/0 - AC 5871/82

24 May 1982

82AWH4

PART REPORT 1

D R McBain
CRA Exploration Pty Ltd
PO Box 254
NORWOOD SA 5067

REPORT AC 5871/82

YOUR REFRENCE:	DPO Number B 0713
IDENTIFICATION:	As listed
DATE RECEIVED:	3 May 1982

D.K. Rowley
Manager
Analytical Chemistry Division

for Norton Jackson
Managing Director

cc The Admin. Officer
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PO Box 254
NORWOOD SA 5067
(Invoice)

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Townsville
Queensland 4814
Telephone (077) 75 1377

ANALYSIS g/tonne		ANALYSIS g/tonne	
SAMPLE MARK	GOLD Au	SAMPLE MARK	GOLD Au
893445	0.070	893464	0.070
46	0.090	65	0.130
47	0.125	66	0.080
48	0.110	67	0.055
49	0.080	68	0.030
50	0.100	69	0.070
51	0.090	70	0.055
52	0.120	71	0.080
53	0.120	72	0.150
54	0.070	73	0.080
55	0.065	74	0.100
56	0.075	75	0.090
57	0.055	76	0.070
58	0.110	77	0.055
59	0.070	893478	0.070
60	0.075		
61	0.055		
62	0.085		
63	0.090		

METHOD: K4/2

METHOD: K4/2

ANALYSIS l/tonne	
SAMPLE MARK	OIL YIELD
893479	>15
893480	>15
893481	5-15
893482	1.5-5
METHOD: R7	

The Australian
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P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/1/6/0 - AC 5871/82

NATA CERTIFICATE

27 May 1982

REPORT COMPLETE

D R McBain
CRA Exploration Pty Ltd
PO Box 254
NORWOOD SA 5067

REPORT AC 5871/82

YOUR REFERENCE:	DPO Number B 0713
IDENTIFICATION:	As listed
DATE RECEIVED:	3 May 1982

Wirrangula. Hill
82 AWH 4

D.K. Rowley
Manager
Analytical Chemistry Division

A.B. Bowditch
for Norton Jackson
Managing Director

cc The Admin. Officer
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amdel

Analysis code C1 Report AC 5871/82 Page 1

NATA Certificate Order B 8712 Results in ppm

Sample	Cu	Pb	Zn
8934445	2	10	30
8934446	2	10	22
8934447	<2	10	14
8934448	2	10	26
8934449	<2	10	22
8934450	4	15	35
8934451	6	15	50
8934452	2	15	30
8934453	2	10	34
8934454	2	20	38
8934455	<2	5	12
8934456	2	25	36
8934457	<2	15	14
8934458	6	20	60
8934459	8	30	70
8934460	8	25	55
8934461	<2	10	20
8934462	2	10	15
8934463	<2	5	8
8934464	<2	10	20
8934465	<2	20	14
8934466	<2	5	10
8934467	<2	5	10
8934468	<2	10	14
8934469	6	25	80
8934470	<2	15	24
8934471	<2	10	16
8934472	<2	15	22
8934473	8	15	22
8934474	<2	15	22
8934475	2	10	18
8934476	<2	5	10
8934477	<2	5	12
8934478	2	10	28
8934479	14	30	170
8934480	12	25	160
8934481	24	35	95
8934482	18	35	90
Detn limit	(2)	(5)	(2)

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CRA EXPLORATION PTY. LIMITED

SECOND QUARTERLY REPORT FOR WIRRANGULA HILL E.L. 924, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 15TH MAY, 1982.

AUTHOR: D.R. McBAIN

COPIES TO: S.A.D.M.E.
CRAE LIBRARY

DATE: 10TH MAY, 1982.

SUBMITTED BY: D.R. McBain

ACCEPTED BY:

11101

CONTENTS

1. SUMMARY

A drilling programme comprising four open holes was undertaken.

Permian coal measures were intersected in three holes in the southern part of the area. The individual and aggregate coal seam thicknesses increase to the north and north-east and correlate with increases in depths to coal.

The hole in the north of the area was abandoned prior to the Permian due to an artesian flow in the Mesozoic sands.

2. CONCLUSIONS

Southern Part

2.1 The thickness of the Permian coal zone increases to the north and north-east, and correlates with increases in depths to coal.

2.2 The individual and aggregate coal seam thicknesses also increase with depth to coal.

2.3 In the south of the area the proportion of coal in the coal zone remains fairly constant, between 9-13%, regardless of depth.

Northern Part

2.4 The prospects of shallow (<120m) Permian coal, are poor. This is inferred from the thickness of the overlying Mesozoic Bulldog Shale of at least 95m.

3. INTRODUCTION

Exploration Licence 924 (Plan SAa 1331) was taken out as part of the coal exploration programme of CRA Exploration Pty. Limited within South Australia. The target horizon being the Permian Mt. Toondina Formation on the margins of the Arckaringa Basin. Previous boreholes in the vicinity had intersected Permian age coal.

The tenement was granted to CRA Exploration Pty. Limited on 16th November, 1981 for a period of twelve months. This report details all work carried out by CRA Exploration Pty. Limited within this E.L. in the quarter to 15th May, 1982.

4. WORK CARRIED OUT

4.1 Geophysics

4.1.1 Gravity

The interpretation of the six line gravity survey on the southern part of the E.L. was completed. The report entitled "Wirrangula Hill E.L. 924, South Australia, Interpretation of Gravity Survey" by B. Finlayson (CRAE report no. 11132) is presented under a separate cover.

The interpretation recommended a six hole programme in the area covered by the gravity survey (Plan SAa 1331).

4.1.2 Downhole

All the boreholes, except 82AWH3, were logged by Century Geophysical Corporation of Australia. Long and Short Spaced Density, Gamma, Caliper, Neutron-Neutron, Spontaneous Potential and Resistivity logs were run.

82AWH3 was not logged due to the unstable conditions prevailing in the hole.

4.2 Drilling

4.2.1 General

Four boreholes for a total of 816 metres were drilled (Plan SAa 1331) using a Peter Nitschke Drilling/Century Geophysical combination.

Borehole 82AWH3 was abandoned at 96 metres, prior to target depth due to a strong artesian flow, drilling could not be continued as no special weighted muds were available on site.

4.2.2 Borehole Results

The three boreholes in the southern part of the E.L. all intersected coal; the a summary appears in Table 1.

In the southern part of the E.L. the coal zone thickens with increasing depth to coal in the northerly and north-easterly direction. (Plan SAa 1331). With the thickening of the coal zone the individual and aggregate coal seam thicknesses increase.

In the northern part of the E.L., the borehole 82AWH3, was abandoned prior to target horizon (Mt. Toondina Formation). The thickness of overlying Bulldog shale would suggest that the prospect of shallow (<120m) Permian coal is poor.

A full evaluation of the E.L. will be undertaken in the next quarter.

English (i.e. written) geological and graphic logs will be presented in the next quarter.

D.R. McBAIN

DRM/lmc

TABLE 1

BOREHOLE NO.	COAL ZONE (M)		AGGREGATE COAL THICKNESS (M)	MAX. INDIVIDUAL SEAM THICKNESS (M)	NO. OF SEAMS	% COAL IN COAL ZONE
	FROM	TO				
82AWH1	102.98	115.58	1.60	0.31	7	13%
82AWH2	118.60	153.83	3.01	0.73	7	9%
82AWH4	130.98	196.38	6.94	2.10	8	11%

N.B. The coal seam (individual & aggregate) thicknesses are interpreted from the geophysical logs; and contain no waste material.

REFERENCES

Finlayson (1982) - "Wirrangula Hill E.L. 924, South Australia, Interpretation of Gravity Survey" - CRAE report no. 11132.

KEYWORDS

Warrina SH53-3, Arckaringa Basin, Permian, Mesozoic, Mt. Toondina Formation, Coal-black, Geophys-borehole, Geophys-grav, Drill-rotary.

LOCATION

Warrina SH53-3 1:250 000

LIST OF PLANS

Plan No.	Title	Scale
SAa 1331	Wirrangula Hill E.L. 924 - Drilling Programme - borehole location	1:100 000

297

CRA EXPLORATION PTY. LIMITED

FINAL REPORT ON WIRRANGULA HILL E.L. 924, SOUTH AUSTRALIA, 15th JUNE, 1982.

AUTHOR: D.R. McBAIN

DATE: 15TH JUNE, 1982.

COPIES TO: S.A.D.M.E.
CRAE LIBRARY

SUBMITTED BY: D.R. M'BAIN

ACCEPTED BY:

11101

CONTENTS

1. SUMMARY

During the tenure of the exploration licence an extensive data review, a six line gravity survey, and a four hole reconnaissance drilling programme were undertaken.

No previous data was available for the area covered by the tenement. Data review was thus carried out on regional geophysical and previous exploration data from adjoining areas.

To elucidate the basin configuration and structure in the southern portion of the E.L. a six line gravity survey was undertaken. With the enhanced basin configuration, from the interpretation of the gravity survey, a four hole reconnaissance rotary-mud programme was planned and drilled.

In the south of the E.L. where coal was intersected the seams were relatively thin. Seam splitting and thinning occurs in a southerly and westerly direction as the Mount Toondina Formation coal measures become shallower to the basin margins. The upper horizons of the Mount Toondina coal measures are increasingly eroded off towards the basin margins.

The thin seams, low coal to inter-seam waste ratio and the depth to the coal combine to limit the potential for an economically viable coal deposit. The prospect for thicker, shallower coal seams than already intersected appears remote.

It is recommended the E.L. 924 be surrendered.

2. CONCLUSIONS

1) The prospects for an extensive coal deposit at less than 120 metres are remote.

2) The coal seams are relatively thin, with maximum coal seam development in the deeper parts of the basin.

3) The coal seams tend to split to the basin margins.

4) The coal to inter-seam waste ratio is low.

5) Correlation of the coal seams is only moderate, due to the thin and variable nature of the seams.

6) The Mount Toondina Formation coal measures are increasingly eroded to the basin margins as they shallow.

7) The potential for an economically viable coal deposit is limited.

8) The drilling programme broadly confirmed the basin configuration interpreted from the CRAE gravity survey. However too few boreholes were drilled to extensively test the interpreted basin configuration and structure.

9) While several of the multicommodity analyses from the Mesozoic and Permian sediments were elevated, with gold values peaking at 0.125 g/tonne and oil yield at ±20 litres/tonne; no further exploration is warranted by these results.

3. RECOMMENDATIONS

1) It is recommended that the exploration licence be surrendered in its entirety.

4. INTRODUCTION

Exploration Licence 924 (Plan SAa 756) was taken out as part of the coal exploration programme of CRA Exploration Pty. Limited within South Australia. The target horizon was the Permian Mount Toondina Formation coal measures, on the margins of the Arckaringa Basin. Previous exploration boreholes in the vicinity had intersected Permian age coal.

The tenement was granted to CRA Exploration Pty. Limited on 16th November, 1981 for a period of twelve months. This report details all work carried out by CRA Exploration Pty. Limited within this E.L. prior to surrender.

5. GEOLOGY

Using a combination of existing data, CRAE borehole cuttings and downhole geophysical logs a stratigraphy and geology of E.L. 924 was constructed.

The geological interpretation appeared in "Wirrangula Hill E.L. 924, South Australia - Report on the Reconnaissance Drilling Programme, April 1982" (CRAE report no. 11477).

6. WORK CARRIED OUT

6.1 Data Acquisition

Data pertaining to the broad area was acquired. No specific data was available for the licence area.

6.1.1 Regional Geophysics

The regional gravity and aeromagnetic data was insufficient to detail the basin and its detailed structure.

6.1.2 Previous Exploration

Newmont-Dampier, Australian Selection and the S.A.D.M.E. all drilled in the vicinity of the licence area. Borehole logs were acquired for these holes.

6.2 Data Evaluation

The available data was evaluated by contract geophysicist B. Finlayson in "Wirrangula Hill E.L.A. 324/81, South Australia, Evaluation of Coal Prospect" (CRAE report no. 10909), and appeared as Appendix I in the "First Quarterly Report for Wirrangula Hill E.L. 924, For The Period Ending 15th February, 1982."

6.3 Geophysics

6.3.1 Gravity

One of the recommendations of the evaluation of the existing data was that a detailed gravity survey be undertaken in the southern portion of the E.L. In November-December, 1981 a detailed six line, 787 station, gravity survey was carried out by Solo Geophysics. The "Nilpinna" survey grid data was presented in the "First Quarterly Report for Wirrangula Hill E.L. 924, For The Period Ending 15th February, 1982."

The interpretation of the "Nilpinna" survey grid data was presented in a report entitled "Wirrangula Hill E.L. 924, South Australia, Interpretation of Gravity Survey" by B. Finlayson (CRAE report 11132).

6.3.2 Downhole

All the boreholes, with the exception of 82AWH3, were logged by Century Geophysical Corporation of Australia. Long and short spaced Density, Caliper, Natural Gamma, Neutron-Neutron, Spontaneous Potential and Resistivity logs were run.

Borehole 82AWH3 was not logged due to unstable borehole conditions.

6.4 Drilling

6.4.1 General

Four rotary-mud boreholes, for a total of 806 metres, were drilled using a Peter Nitschke Drilling/Century Geophysical combination. Addition general drilling information was presented in "Wirrangula Hill E.L. 924, South Australia, - Report on the Reconnaissance Drilling Programme, April, 1982".

6.4.2 Borehole Results

The full borehole results, including two tables summarising the coal intersections were presented in "Wirrangula Hill E.L. 924, South Australia - Report on the Reconnaissance Drilling Programme, April, 1982".

6.4.3 Evaluation of Coal Intersections

A detailed evaluation of the coal intersections and the potential of the area appeared in "Wirrangula Hill E.L. 924, South Australia - Report on the Reconnaissance Drilling Programme, April, 1982".

6.4.4 Multi-Commodity Analyses

Selected samples from the Mesozoic & Permian sediments in 82AWH1,2,4 were analysed for oil yield, copper, lead, zinc, gold. While several of the samples returned elevated values with Gold peaking at 0.125 g/tonne and oil yield at ± 20 litres/tonne none are considered to warrant further exploration at this stage.

The analytical data sheets were presented as Appendix IV in the report entitled "Wirrangula Hill E.L. 924, South Australia - Report on the Reconnaissance Drilling Programme, April, 1982".

D.R. McBAIN

DRM/lmc

REFERENCES

Finalyson, B., 1982. Wirrangula Hill E.L.A. 324/81, South Australia, Evaluation of Coal prospects: CRAE report no. 10909.

McBain, D.R., 1982. First Quarterly Report for Wirrangula Hill E.L. 924, for the period ending 15th February, 1982: CRAE report no. 11101.

McBain, D.R., 1982. Second Quarterly Report for Wirrangula Hill E.L. 924, South Australia, for the period ending 15th May, 1982: CRAE report no. 11101.

McBain, D.R., 1982. Wirrangula Hill E.L. 924, South Australia - Report on the Reconnaissance Drilling Programme, April, 1982: CRAE report no. 11477.

KEYWORDS

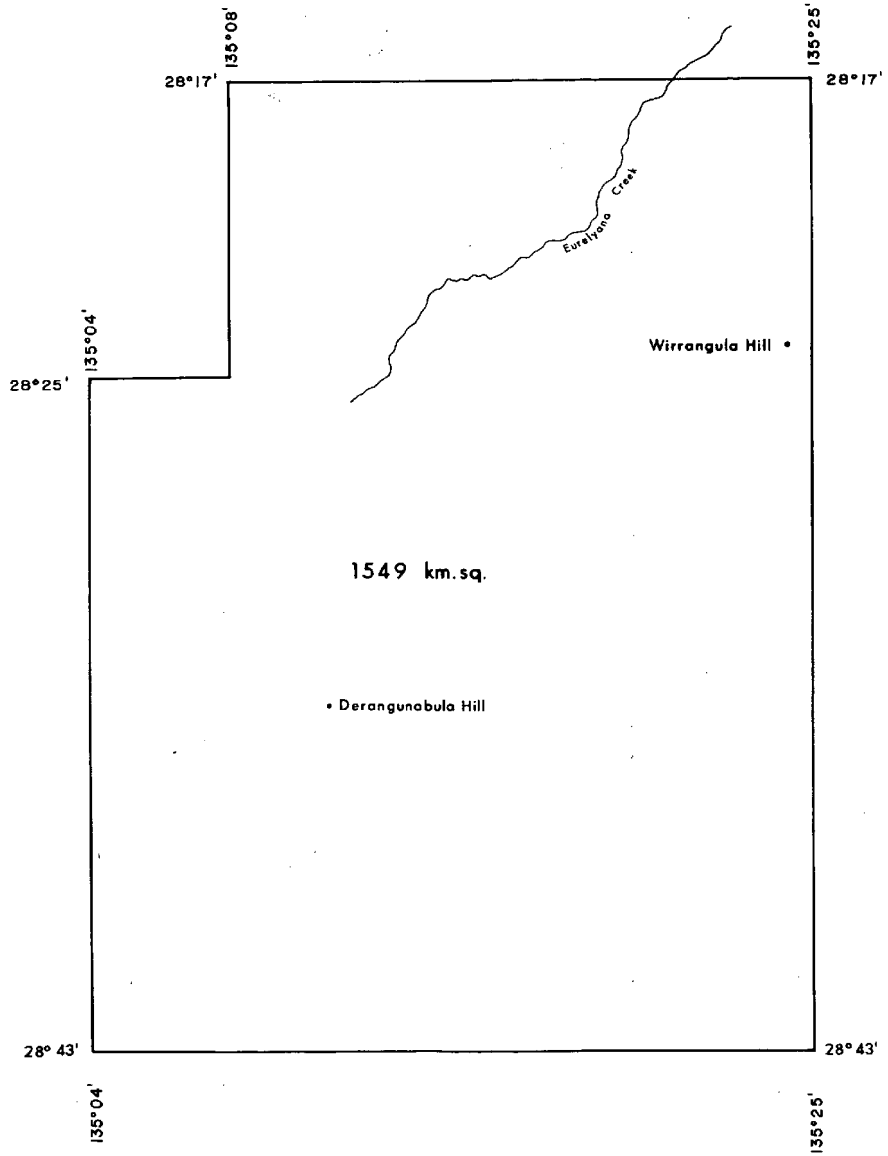
Warrina SH53-3, Arckaringa Basin, Permian, Mesozoic, Bulldog Shale, Algebuckina Sandstone, Cadna-owie Sandstone, Mount Toondina Formation, Stuart Range Formation, Coal-black, Geophys-aeromag, Geophys-borehole, Geophys-grav, Drill-rotary, Drill-assay, Data review.

LOCATION

Warrina SH53-3 1:250 000

LIST OF PLANS

Plan No.	Title	Scale
SAa 756	E.L. 924 - Wirrangula Hill	1:250 000



C. R. A. EXPLORATION PTY. LIMITED

E L 924
WIRRANGULA HILL

Ref. WARRINA SH 53-3	
Scale 1:250,000	Drawn S.W.
Author D.McB.	Report No. 11101
Date MAY 1981	Plan No. SAa 756

GYALINNA CREEK

"OLD COOTANOORINA" Abandoned

CONDARLAROO HILL

NILKININA WATERHOLE

NILKININA CREEK

WADLAWILWEN WATERHOLE

EURELYANA CREEK

LORA CREEK

EURELYANA HILL

WIRRANGULA HILL

MT. EUEE

DERANGUNABULA HILL

CADAREE HILL

135°00'
135°15'
135°30'
28°15'
28°30'
28°45'
6870000mN
6860000mN
6850000mN
6840000mN
6830000mN
510000mE
520000mE
530000mE
540000mE
550000mE

LEGEND

CRAE 1981 "Nilpinna" Gravity Survey."

Newmont Dampier"Cadaree Hill" Gravity survey.

0 2 4 6 8 10Km

SCALE 1:100,000

4562-1

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924

NIPINNA GRAVITY SURVEY GRID

Ref. Warrina SH.53-3	
Author D. McB.	Drawn D.D.
Scale 1:100,000	Report no 11101
Date February 1982	Plan no. SAa 1330

135°00'
510000mE
520000mE
530000mE
540000mE
550000mE
28°15'
135°15'
135°30'
GYALINNA CREEK
CONDARLAROO HILL
"OLD COOTANOORINA" Abandoned
NILKININA WATERHOLE
NILKININA CREEK
WADLAWILWEN WATERHOLE
6870000mN
H
EURELYANA CREEK
LORA CREEK
EURELYANA HILL
6860000mN
WIRRANGULA HILL
G
6850000mN
28°30'
MT. EUEE
6840000mN
DERANGUNABULA HILL
A
AA
FF
CADAREE HILL
B
D
6830000mN
C
E
28°45'
135°00'
135°15'
135°30'

LEGEND

- ⊕ Borehole sites for 1982 Drilling Programme.
- O Borehole sites deferred from 1982 Drilling Programme.
- —— CRAE 1981 "Nilpinna" gravity survey.
- ----- Newmont Dampier "Cadaree Hill" gravity survey.

0 2 4 6 8 10Km

SCALE 1:100,000

4562-2

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924
DRILLING PROGRAMME
BOREHOLE LOCATION

Ref. Warrina SH 53-3	
Author D. McB.	Drawn D.D.
Scale 1:100,000	Report no 11101
Date February 1982	Plan no. SAg 1331

132°00' 133°00' 134°00' 135°00' 136°00' 137°00'

27°00' 28°00' 29°00' 30°00' 31°00'

PRE PERMIAN (CAMBRIAN)
OFFICER BASIN OUTCROP

PEAKE AND DENISON
BASEMENT (PRE CAMBRIAN) RIDGE

MT. TOONDINA
Cootanoorina No.1

STUART HIGHWAY

MT. FURNER TROUGH

ARCKARINGA BASIN

BOORTHANNA TROUGH

Weedina No.1

WIRRANGULA HILL

MABEL CREEK
BASEMENT HIGH

Coober Pedy

COOBER PEDY
BASEMENT HIGH

MOUNT WOODS
BASEMENT HIGH

WALLIRA – PHILLIPSON TROUGH

GAWLER CRATON
BASEMENT (PRE CAMBRIAN)

ALICE SPRINGS - TARCOOLA RAILWAY

STUART SHELF
PRE PERMIAN (ADELAIDEAN)
OUTCROP

PERTH

Tarcoola

Kingoonya

ADELAIDE

LEGEND

Known or inferred margin of Arckaringa Basin

Known or inferred margin of Mt. Toondina coal bearing sequence postulated from gravity data

Stratigraphic / Exploration well

SCALE

KILOMETRES 20 0 20 40 60 80 100 KILOMETRES

FIG. 1

4562-3

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924
COAL PROSPECT
ARCKARINGA BASIN
GEOPHYSICAL INTERPRETATION
(AFTER S.A.D.M.E. REPORT 81/51)

Ref: WARRINA SH53 3	
Author: B.F.	**Scale:** 1 1,000,000
Drawn: S.J.B.	**Report No:** 10909
Date: OCTOBER 1981	**Plan No:** SAg 1115

132°00'
133°00'
134°00'
135°00'
136°00'
137°00'
27°00'
28°00'
29°00'
30°00'
31°00'
EL 924
Wirrangula Hill
10 0 20 40 60 80 100 120 140 160 Km
FIG. 2
CRA EXPLORATION PTY. LIMITED
WIRRANGULA HILL - EL 924
BOUGUER GRAVITY CONTOURS
4562-4 (After SADME)
Ref
Scale 1 : 1000000
Author B. F.
Date Jan. 1982
Report No. 10909
Plan No. SAa 1252

BOUNDARY OF WIRRANGULA HILL

135°08' 28°17' 135°25' 28°17'

135°04' 28°25'

28°37' 135°00' 135°35' 28°37'

28°43' 134°53' 135°04' 135°25' 28°43'

28°48' 134°53' 135°00' 135°05' 135°11' 28°48'

28°45' 135°35'

28°52' 134°55' 135°05' 28°52'

28°58' 134°55' 135°05' 28°58'

10000N 10000E 3500E 6000E 6000N 2000N

A B

+4 +3 +5 +2 +1 +9 +8 +6 +7

-6 -8 -10 -12 -14 -16 -18 -20 -22 -24

MU-4 (756m)

MU-3

MU-12 (102m)

MU-13 (94m)

MU-2 (80m)

MU-1 (88m)

MU-14

MU-5 (66m)

MU-6 (64m)

MU-10 (64m)

MU-8 (84m)

MU-11 (84m)

SR-14

SR-14/2 (89m)

STUART RANGE NO 2 BORE

SABRINA BORE

STUART RANGE NO.1 BORE

STUART RANGE NO.3 BORE

MU-9

MU-7

LEGEND

- Proposed Extensions to E.L.A. Boundary
- B, A - See Text
- Newmont - Dampier Grid & Drillholes
- Australian Selection Drillholes (with depth to top of Permian)
- MU-2 (80m) Permian Coal Intersection
- Cretaceous Coal Intersection
- Barren
- Shallow Crystalline Basement Intersected
- 9+ Proposed Reconnaissance Drillhole
- Recommended Gravity Traverse - 500m Spacing

-20 -18 Bouguer Gravity Contours (SADME 71-591 / 71-407)

SCALE

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

FIG. 3

4562-5

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL EL 924 COAL PROSPECT

SUMMARY OF INFORMATION

Ref: WARRINA SH53-3	
Author: B.F.	Scale: 1: 250,000
Drawn: S.J.B	Report No: 10909
Date: OCTOBER 1981	Plan No: SAa 1253/A

135°00'
135°30'
28°15'
28°30'
28°45'
Pootnoura
Eurelyana
Poorina
Cadaree
Giddinna
Oolgelima
GADIBARRAWIRRACANNA
LAKE
CONWAY
'd'1
'd'2

0 5 10 15 20 25
Kilometres

'd1, 'd'2 Anomalies on which half slope depths were calculated.

FIG. 3A

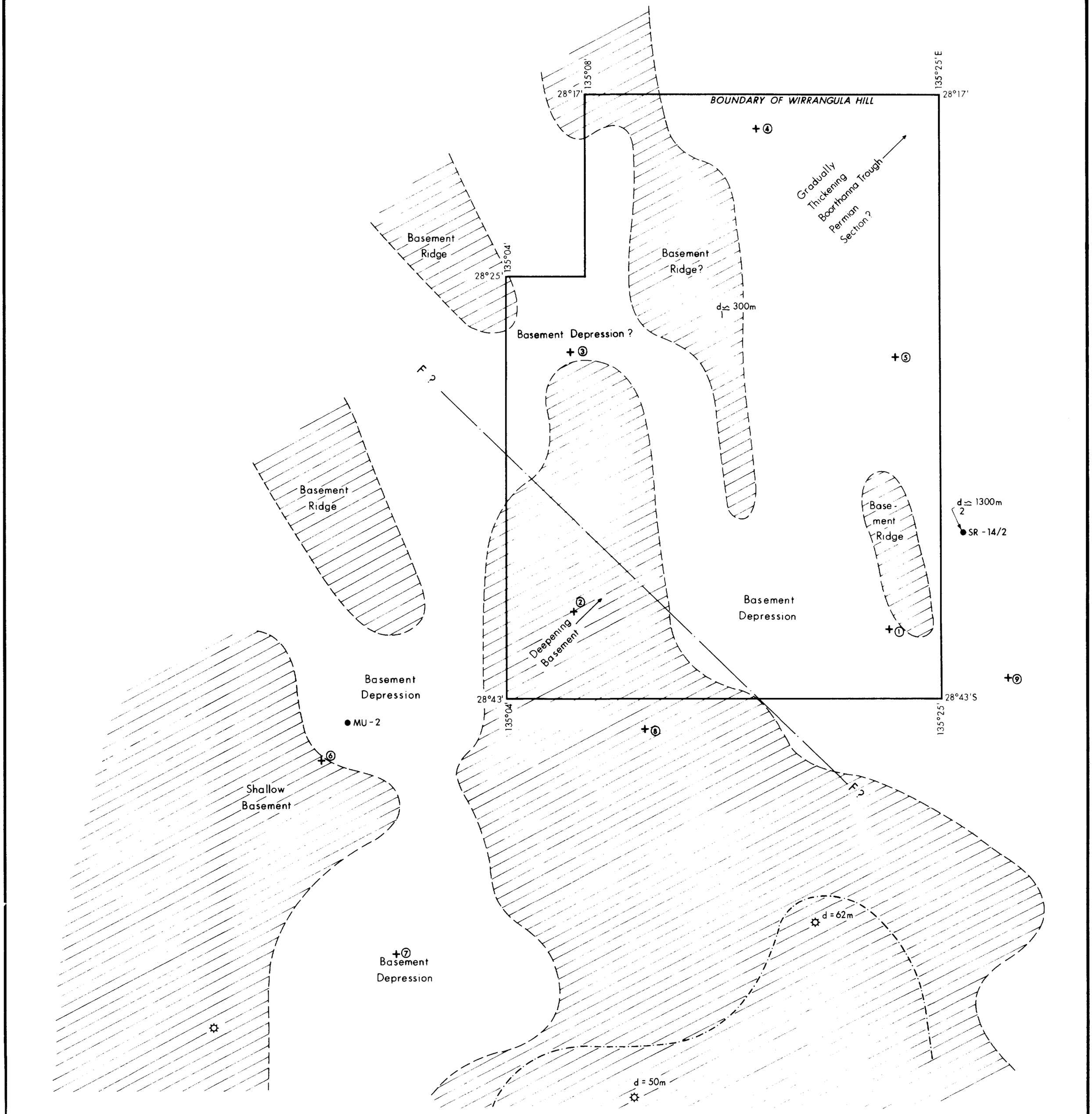
CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924

AEROMAGNETIC CONTOURS

4562-6

REF.: WARRINA SH 53-3	
SCALE: 1:250 000	DRAWN: J.C.R.
GEOL.: B.F.	REPORT No.
DATE: FEB. 1982	PLAN No. SAa 1289



SCALE

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

FIG. 4

LEGEND

- ● Drillholes Permian Coal Intersected
- ☼ d=50m Shallow Crystalline Basement Intersected and Depth
- Approximate Shallow Basement Boundaries
- Approximate Southern Limit of known Permian
- +⑨ Proposed Reconnaissance Drillhole
- F ? Basement Lineament

4562-7

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924 COAL PROSPECT

INTERPRETATION OF EXISTING DATA

Ref: WARRINA SH53-3	
Author: B.F.	**Scale:** 1: 250,000
Drawn: S.J.B.	**Report No:** 10909
Date: OCTOBER 1981	**Plan No:** SAa 1107

BOUNDARY OF WIRRANGULA HILL

135°08' 28°17' 135°25' 28°17'

28°25' 135°04'

A B C

MU-4 (756m)

MU-3 MU-12 (102m) MU-13 (94m) MU-2 (80m) MU-1 (88m) MU-14 MU-5 (66m) MU-6 (64m) MU-10 (64m) MU-8 (84m) MU-11 (64m) MU-9 MU-7

SR-14 SR-14/2 (89m)

STUART RANGE NO.2 BORE

SABRINA BORE

STUART RANGE NO.1 BORE

STUART RANGE NO.3 BORE

10000N 1000E 3500E 6000E 6000N 2000N 50 000 N 80 000E 85 000E 90 000E 95 000E 100 000E

28°37' 135°00' 135°35' 28°43' 135°04' 135°25' 28°45' 28°48' 134°53' 135°00' 135°05' 135°11' 28°52' 134°55' 28°58'

-8 -10 -12 -14 -16 -18 -20 -22 -24

LEGEND

- A,B,C - Gravity Zones - See Text
- Zonal Boundaries
- Newmont - Dampier Grid & Drillholes
- Australian Selection Drillholes (with depth to top of Permian)
- MU-2 (80m) Permian Coal Intersection
- Cretaceous Coal Intersection
- Barren
- Shallow Crystalline Basement Intersected
- a Proposed Reconnaissance Drillhole
- Solo Geophysics & Co. Gravity Traverse – 200 m Spacing

-20 -18 Bouguer Gravity Contours (SADME 71-591 / 71-407)

SCALE

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

N

SOUTH AUSTRALIA

E.L. 924

LOCATION PLAN OF E.L. 924

FIG. 1

4562-8

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL EL 924 COAL PROSPECT

SUMMARY OF INFORMATION

Ref: WARRINA SH53-3	
Author: B.F.	Scale: 1: 250,000
Drawn: S.J.B.	Report No: 10909 / 11132
Date: OCTOBER 1981	Plan No: SAa 1253 / B

135°00'

135°30'

28°15'

28°30'

28°45'

Pootnoura

Eurelyana

Cadaree

Poorina

Giddinna

Oolgelima

LAKE CONWAY

LAKE CADIBARRAWIRRACANNA

'd'1

'd'2

0 5 10 15 20 25

Kilometres

'd'1, 'd'2 Anomalies on which half slope depths were calculated.

FIG. 1A

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924

AEROMAGNETIC CONTOURS

4562-9

REF.: WARRINA SH53-3	
SCALE: 1:250000	DRAWN: J.C.R.
GEOL.: B.F.	REPORT No. 11132
DATE: FEB. 1982	PLAN No. SAq 1289

132°00' 133°00' 134°00' 135°00' 136°00' 137°00'

27°00'

28°00'

29°00'

30°00'

31°00'

PRE PERMIAN (CAMBRIAN)
OFFICER BASIN OUTCROP

PEAKE AND DENISON
BASEMENT (PRE CAMBRIAN) RIDGE

MT. TOONDINA
Cootanoorina No.1

STUART HIGHWAY

MT. FURNER TROUGH

ARCKARINGA BASIN

BOORTHANNA TROUGH

Weedina No.1

WIRRANGULA HILL

MABEL CREEK
BASEMENT HIGH

Coober Pedy

COOBER PEDY
BASEMENT HIGH

MOUNT WOODS
BASEMENT HIGH

WALLIRA – PHILLIPSON TROUGH

GAWLER CRATON
BASEMENT (PRE CAMBRIAN)

STUART HIGHWAY

STUART SHELF
PRE PERMIAN (ADELAIDEAN)
OUTCROP

PERTH

Tarcoola

Kingoonya

ADELAIDE

LEGEND

Known or inferred margin of Arckaringa Basin

Known or inferred margin of Mt. Toondina coal bearing sequence postulated from gravity data

Stratigraphic/Exploration well

SCALE

KILOMETRES 20 0 20 40 60 80 100 KILOMETRES

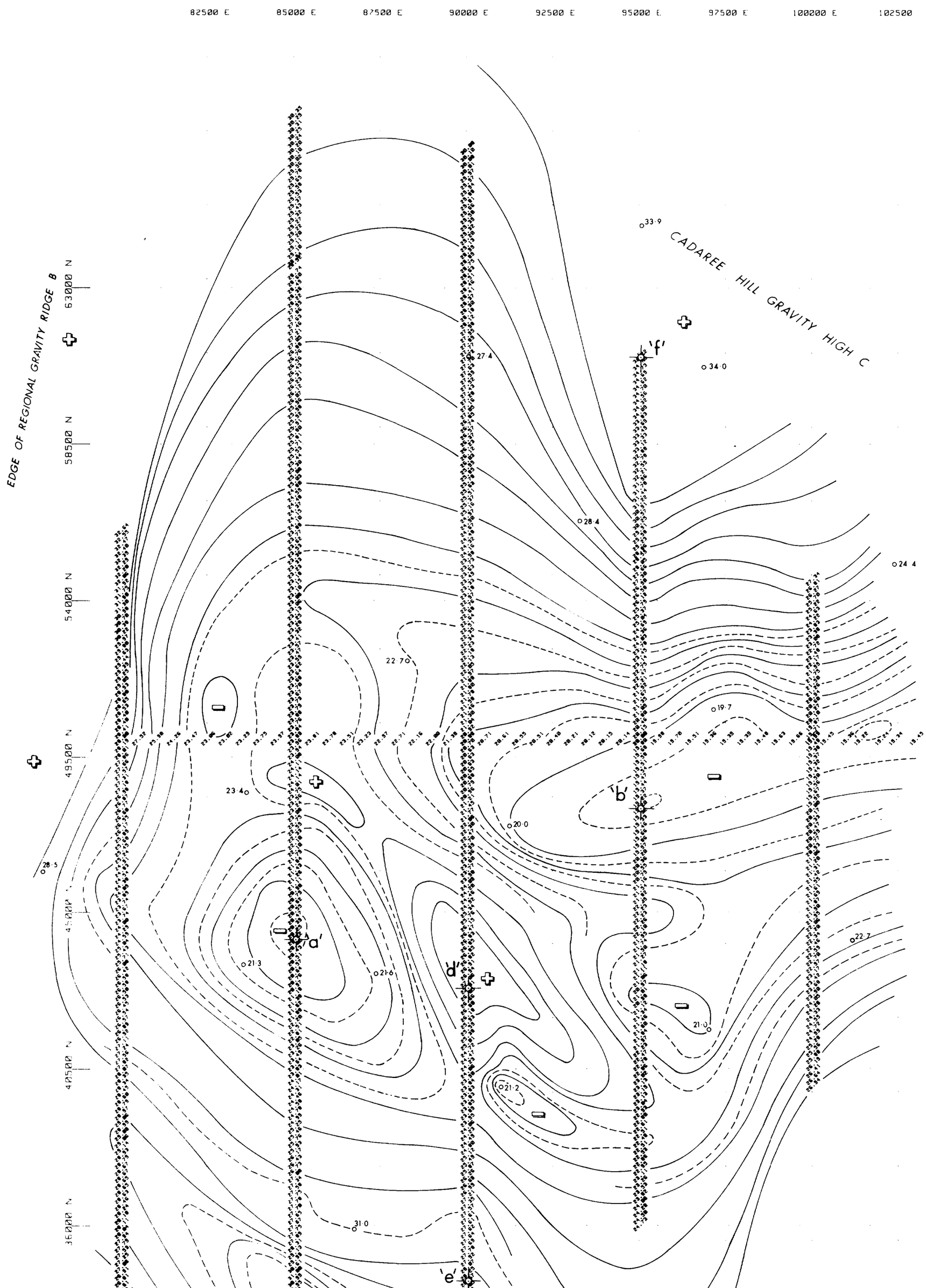
FIG. 2

4562-10

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924
COAL PROSPECT
ARCKARINGA BASIN
GEOPHYSICAL INTERPRETATION
(AFTER S.A.D.M.E REPORT 81/51)

Ref: WARRINA SH53-3	
Author: B.F.	**Scale:** 1:1,000,000
Drawn: S.J.B.	**Report No:** 10909 / 11132
Date: OCTOBER 1981	**Plan No:** SAa1115



Surveyed for :CRA EXPLORATION Pty Ltd

Location :NILPINNA grid Sth Australia

PLOT SCALE 1: 100000 m
GRID ROTATION : 39 deg.
TIME ZONE : 9.5 GMT
PLOT DENSITY : 2.1 gms/cc

SOLO GEOPHYSICS & CO

LEGEND

28·41 Observed Gravity at 2·1 gm/cm (arbitrary base level for whole survey) in milligals.

Observed Gravity Contours
- 1 milligal contour
- ·5 milligal contour

25 70 SADME Barometric / Gravity Stations and Value

Bouguer Gravity Positive

Bouguer Gravity Negative

Suggested Drillhole Positions

SCALE

KILOMETRES 0 1 2 3 4 5 6 7 8 9 10 KILOMETRES

NORTH

4662-11

FIG. 3

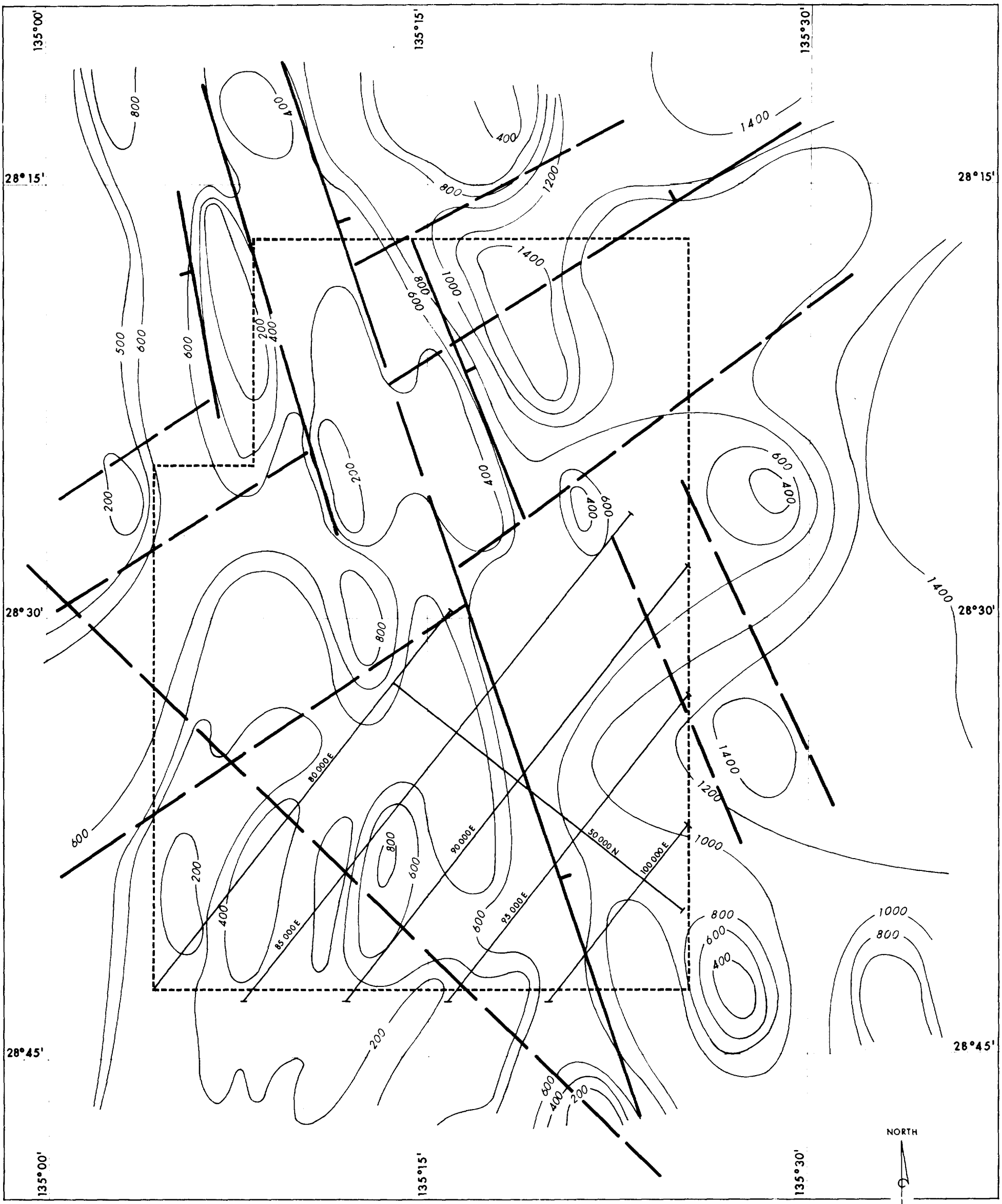
CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924

GRAVITY SURVEY

(NILPINNA)

Ref: WARRINA SH53-3	
Author: B.F.	Scale: 1:100,000
Drawn: S.J.B.	Report No: 10909 / 11132
Date: FEBRUARY 1982	Plan No: SAa 1333



LEGEND

Solo Geophysics & Co. Gravity Traverse - 200m Spacing

200 Interpreted Contours

Boundary of Wirrangula Hill E.L.

Interpreted Basement – Lineaments (dashed) and Faults (solid with inferred downthrown side)

SCALE

KILOMETRES 5 0 5 10 15 KILOMETRES

FIG. 4

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924

DEPTH TO MAGNETIC BASEMENT SKETCH

4562-12

Ref: WARRINA SH53 - 3	
Author: B.F	Scale: 1: 250,000
Drawn: S.J.B.	Report No: 10909/11132
Date: FEBRUARY 1982	Plan No: SAa 1336

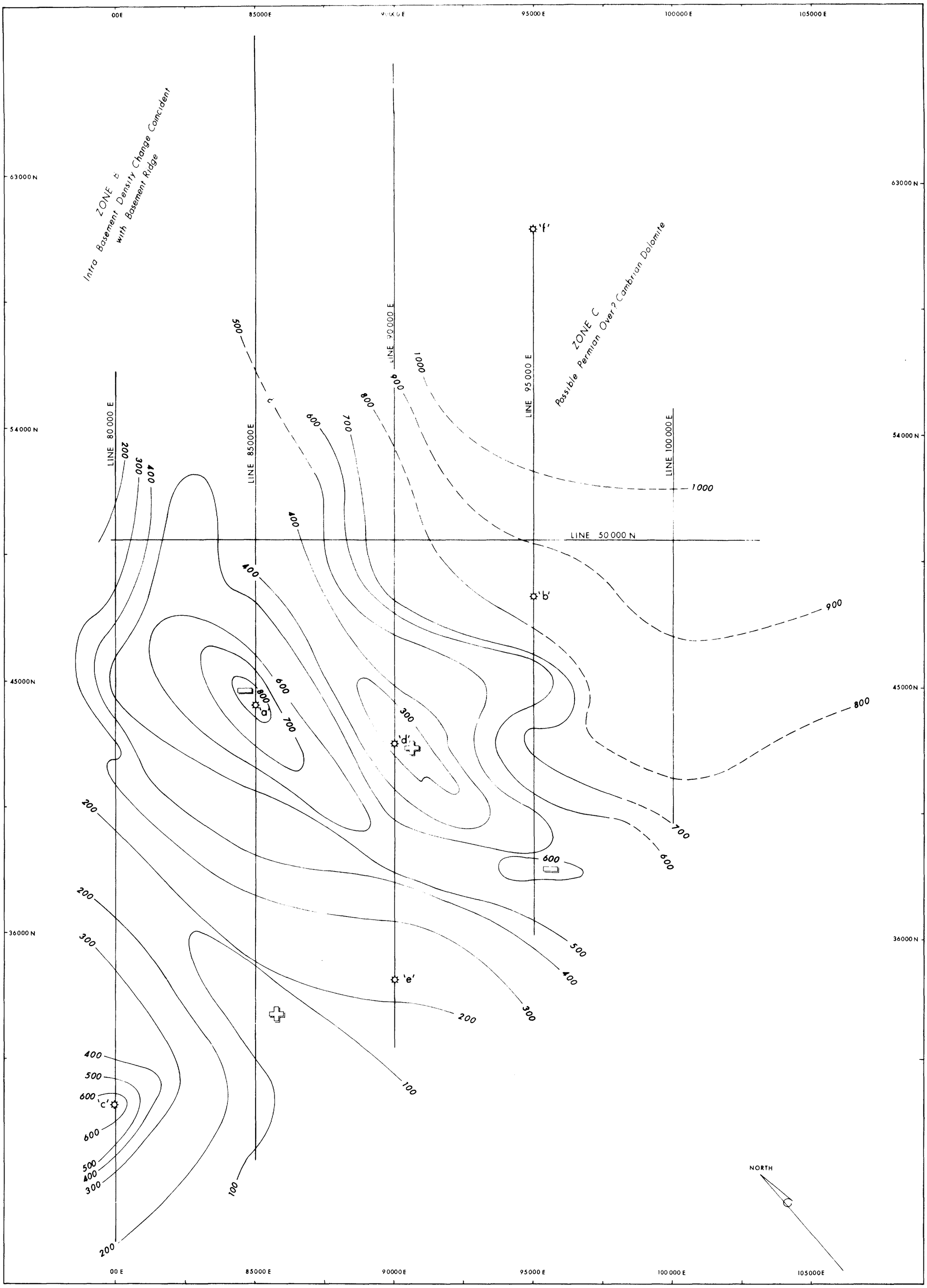


FIG. 5

LEGEND

200 — Depth Contour - from Gravity and Magnetic data

1000 - - - - Depth Contour - from Magnetic data only

'c' ☼ Suggested Drillhole Sites

SCALE

KILOMETRES 0 1 2 3 4 5 6 7 8 9 10 KILOMETRES

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924

DEPTH TO BASEMENT INTERPRETATION

4562-13

Ref: WAKRINA SH53-3	
Author: B.F	**Scale:** 1:100,000
Drawn: S.J.B	**Report No:** 10909/11132
Date: FEBRUARY 1982	**Plan No:** SAa 1338

N

S

3

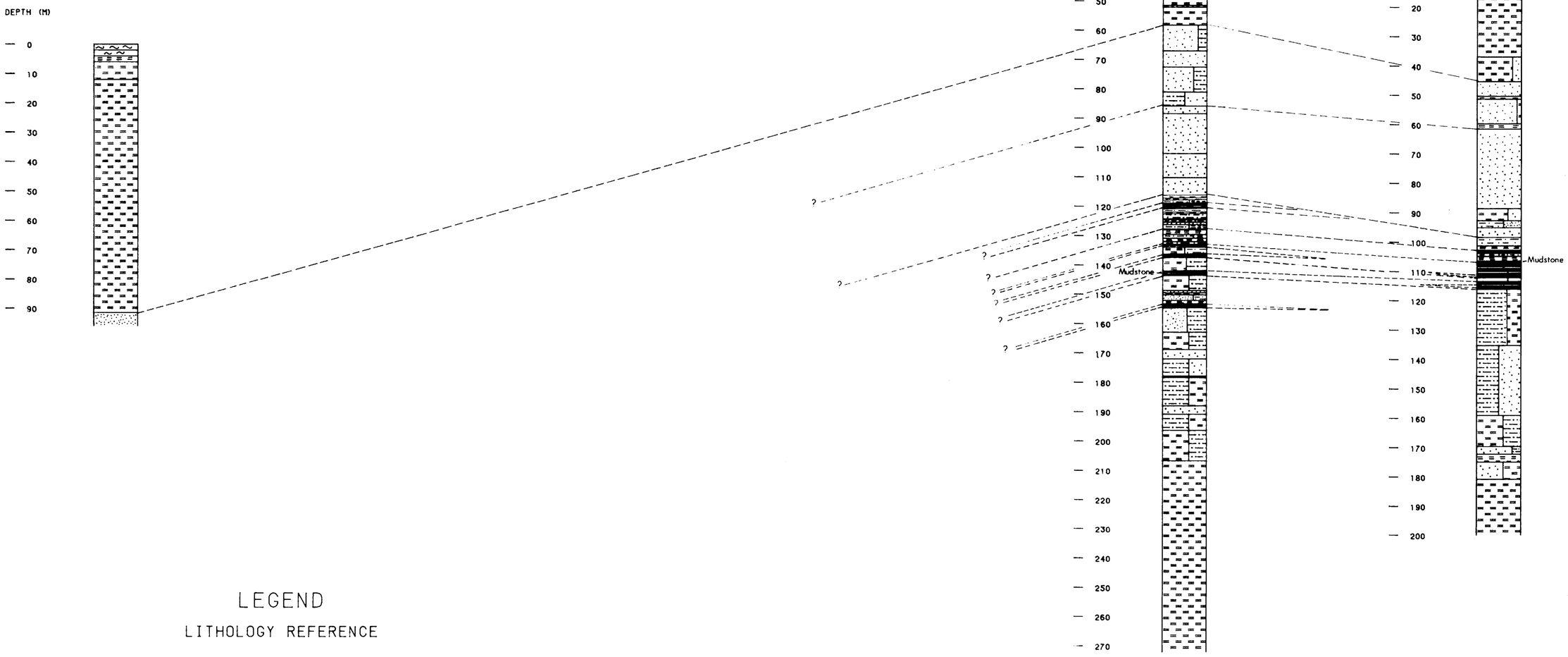
2

1

BORE : 82 AWH 3

BORE : 82 AWH 2

BORE : 82 AWH 1



LEGEND

LITHOLOGY REFERENCE

COAL

SAND

MUDSTONE

SANDSTONE

SILTSTONE

SOIL (ALLUVIUM)

SCALE

KILOMETRES 0 2 4 6 8 10 KILOMETRES

4562-14

CRA EXPLORATION PTY LTD

WIRRANGULA HILL

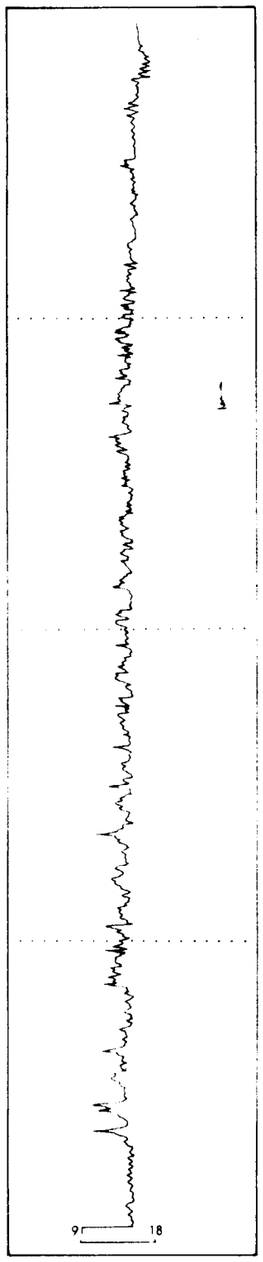
INTERPRETED GEOLOGICAL CROSS SECTION

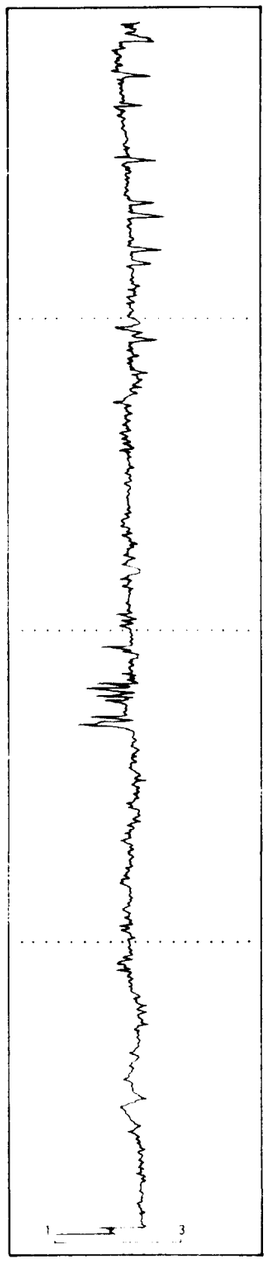
82 AWH 3-2-1

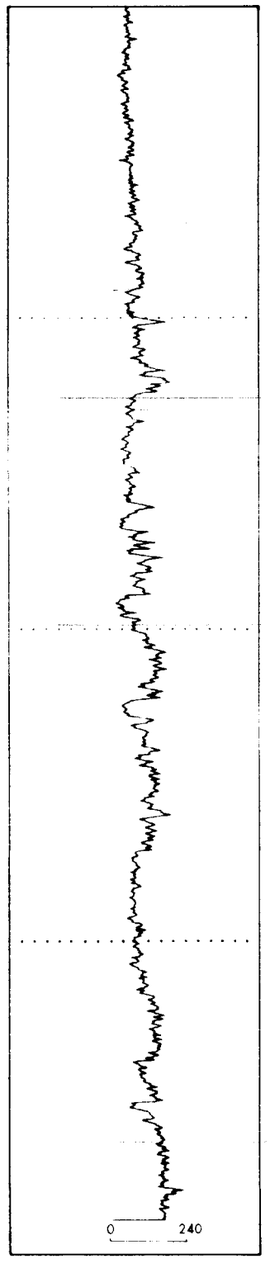
REF: WARRINA SH 53-3	
SCALE 1:100000	
AUTHOR: D. McBAIN	REPORT No.: 11477
DATE: JULY 1982	PLAN No.: SAa 1666

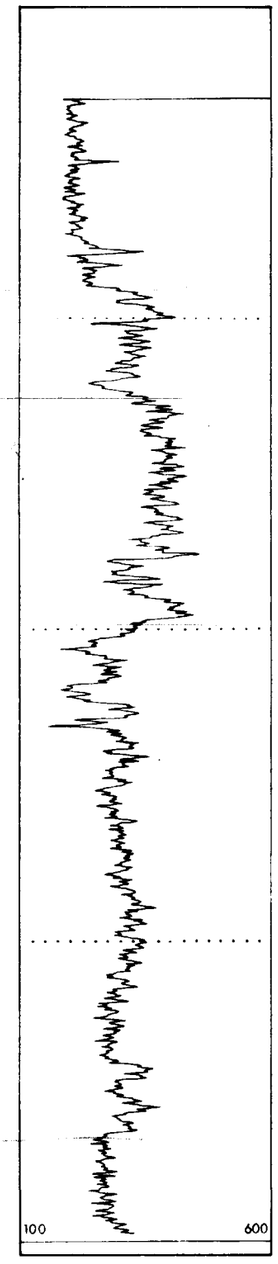
DEPTH (M)

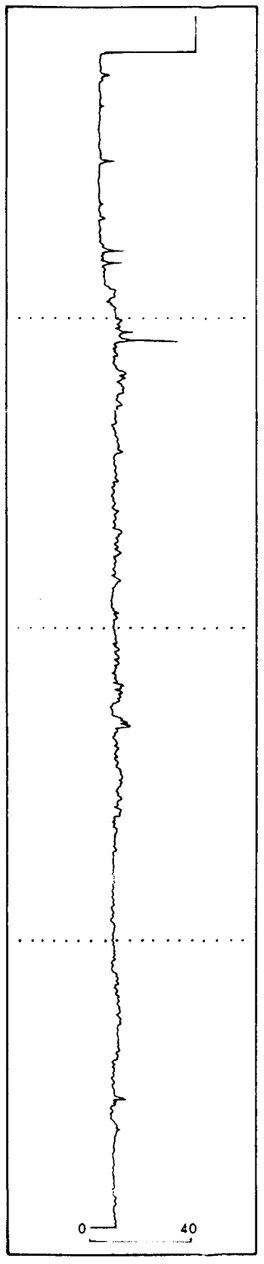
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200











LEGEND

LITHOLOGY REFERENCE

COAL

SAND

MUDSTONE

SANDSTONE

SILTSTONE

SOIL (ALLUVIUM)

SCALE

0 100 200 300 400 500 METRES

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924

COMPOSITE DRILL LOG

4562-15 **82 AWH 1**

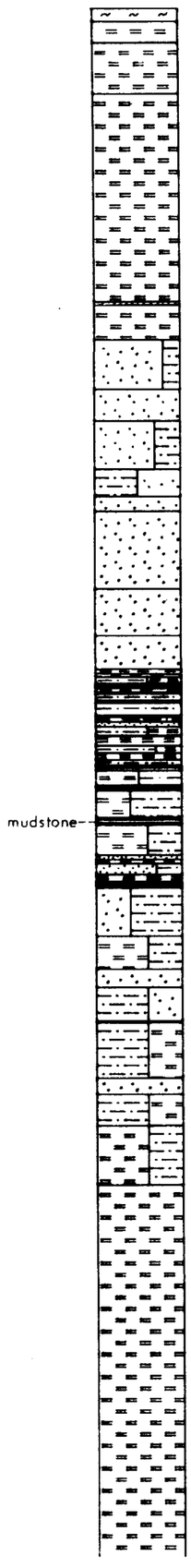
Reference: WARRINA SH53-3	
Author: D.R.McB.	Scale: 1:1000
Drawn:	Report No: 11477
Date: JULY 1982	Plan No: SAa1667

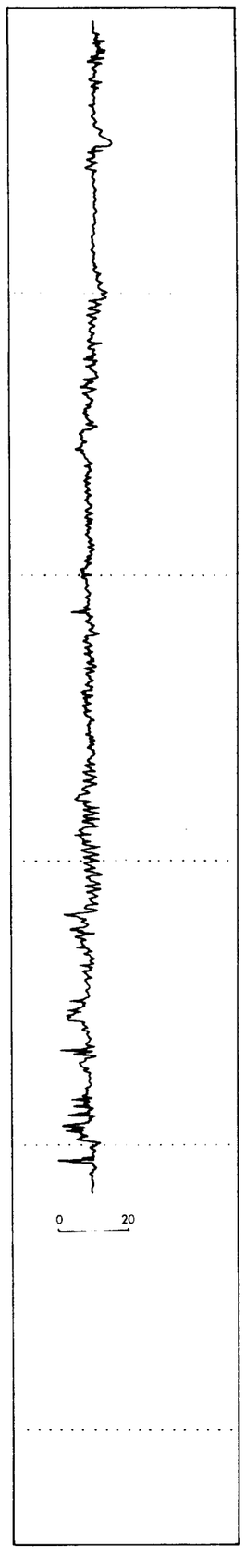
BORE : 82 AWH 1

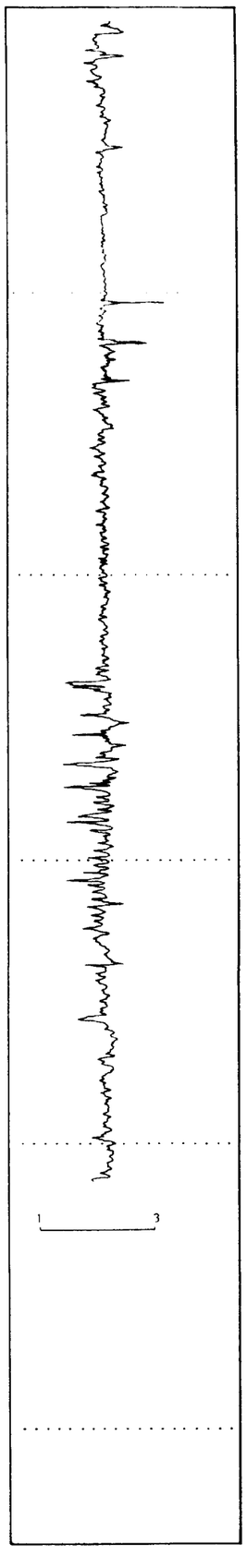
CR/82AWH-2
(NO ORIGINALS AVAILABLE)

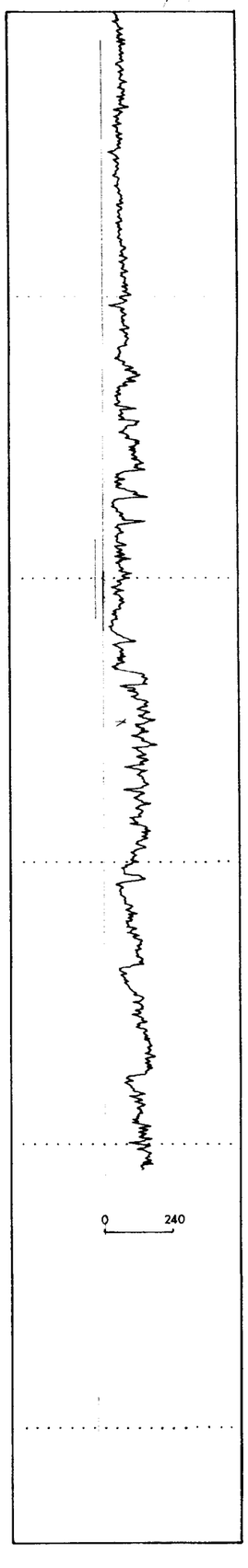
DEPTH (M)

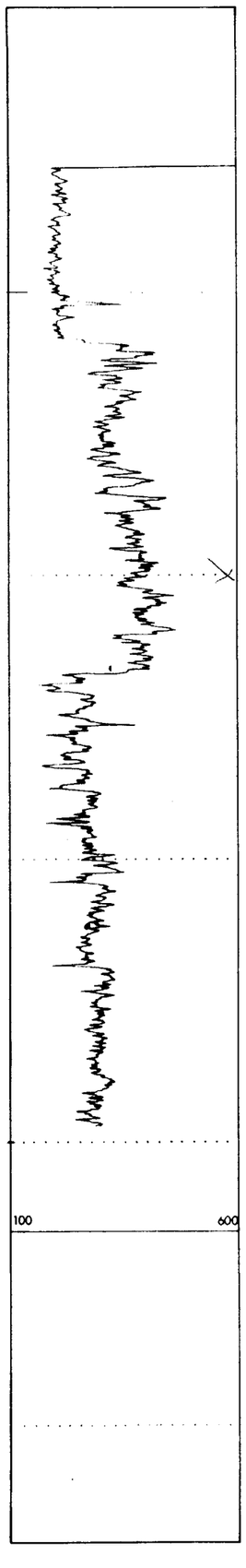
— 0
— 10
— 20
— 30
— 40
— 50
— 60
— 70
— 80
— 90
— 100
— 110
— 120
— 130
— 140
— 150
— 160
— 170
— 180
— 190
— 200
— 210
— 220
— 230
— 240
— 250
— 260
— 270

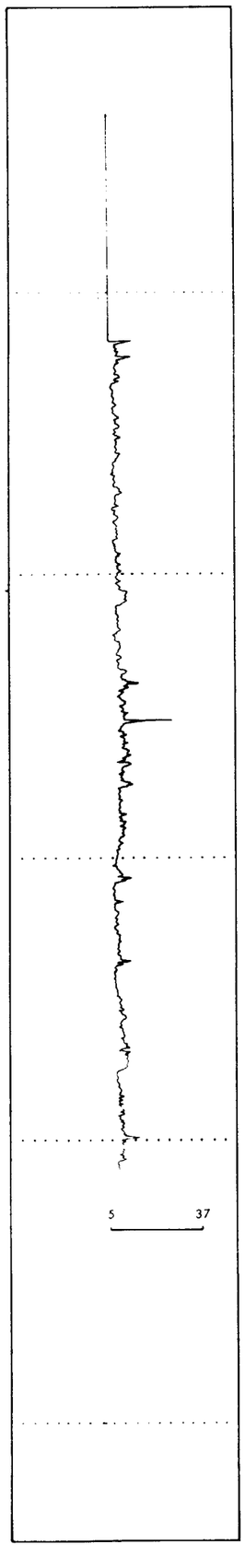












LEGEND

LITHOLOGY REFERENCE

- COAL
- MUDSTONE
- SILTSTONE
- SANDSTONE
- SOIL (ALLUVIUM)
- SAND

SCALE
0 100 200 300 400 500 METRES

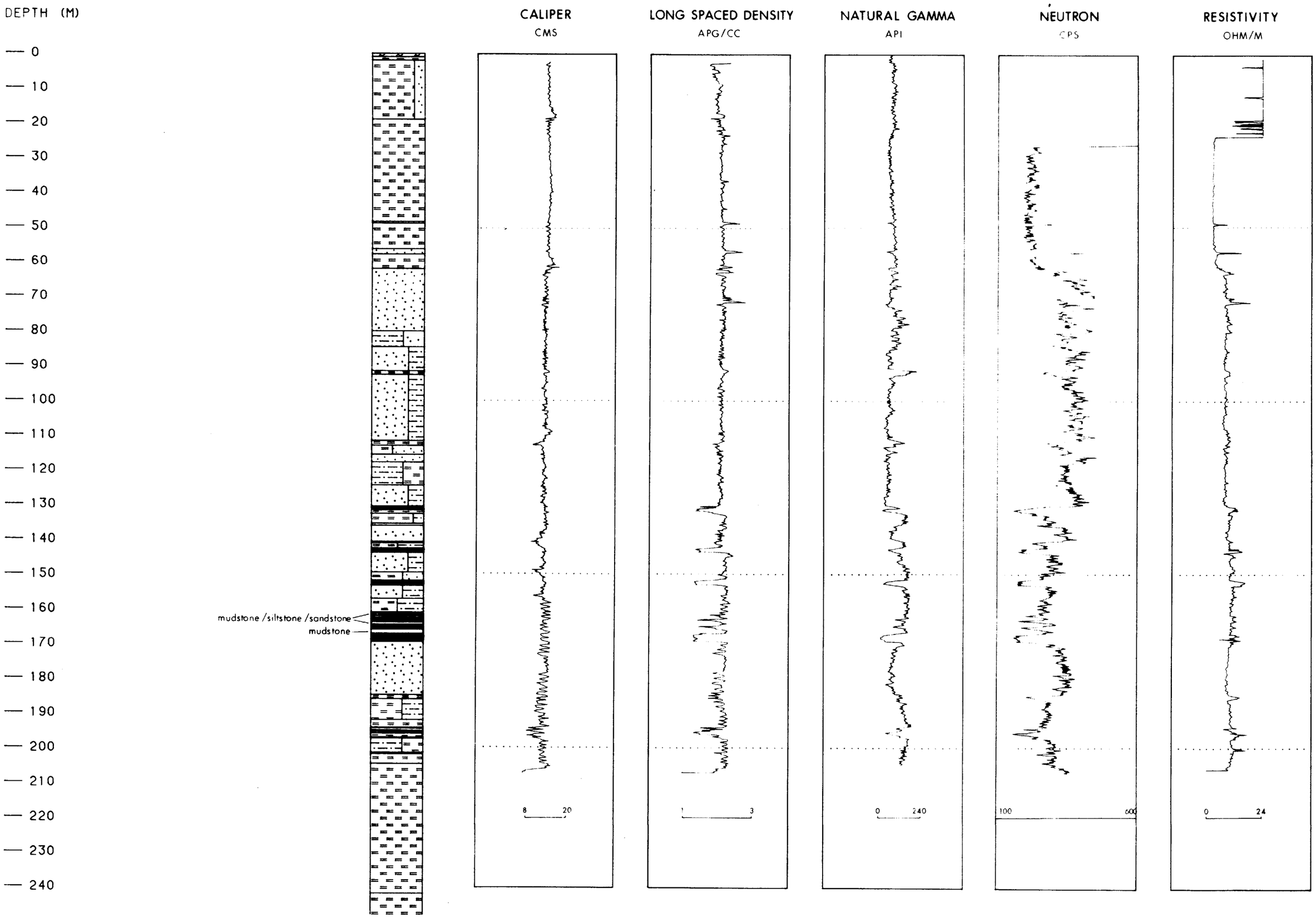
CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L. 924
COMPOSITE DRILL LOG
82 AWH 2

4562-16

Reference : WARRINA SH53 - 3	
Author : D.R. McB	Scale : 1 : 1000
Drawn :	Report No : 11477
Date : JULY 1982	Plan No : SAa 1668

BORE : 82 AWH 2



LEGEND

LITHOLOGY REFERENCE

COAL

SANDSTONE

MUDSTONE

SOIL (ALLUVIUM)

SILTSTONE

SCALE

0 100 200 300 400 500 METRES

BORE : 82 AWH 4

CRA EXPLORATION PTY. LIMITED

WIRRANGULA HILL E.L.924

COMPOSITE DRILL LOG

82 AWH 4

4562-17

Reference : WARRINA SH53 - 3	
Author : D.R. McB.	Scale : 1 : 1000
Drawn :	Report No : 11477
Date : JULY 1982	Plan No : SAa 1669