DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
ENGINEERING DIVISION

AUSTRALIAN NATIONAL RAILWAYS
TARCOOLA - ALICE SPRINGS RAILWAY
REPORT ON SUPPLEMENTARY GROUNDWATER BORING, N.T. BORDER - ALICE SPRINGS

Progress Report No. 9.

by

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Geologist
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Rept.Bk.No. 77/12
G.S. No. 5841
Eng. No. 76-66
D.M. No. 329/75
Pt. II.

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DEPARTMENT OF MINES
SOUTH AUSTRALIA

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AUSTRALIAN NATIONAL RAILWAYS TARCOOLA - ALICE SPRINGS RAILWAY REPORT ON SUPPLEMENTARY GROUNDWATER BORING, N.T. BORDER - ALICE SPRINGS

Progress Report No. 9.

SUMMARY

Six water bores were put down to a cumulative depth of 424 m between the N.T. border and Alice Springs, at sites nominated by the N.T. Water Resources Branch. Successful wells were completed at C58, C177 and C189 km, and preliminary indicated yields vary between 900 and 5000 g.p.h. (1.1 to 3.8 l/sec). Salinity is in the range 1000 - 20 000 mg/l.

INTRODUCTION

Following a request, dated 6th September 1976, from the Water Resources Branch of the Dept of Northern Australia (acting on behalf of Australian National Railways) 6 groundwater bores were drilled between the Northern Territory border and Alice Springs, along the proposed alignment of the Tarcoola-Alice Springs Railway. This will constitute the fourth, and final, tender section of the railway, between about 562 and 830 km north from Tarcoola (CO km - C270 km).

This drilling supplements work carried out earlier by the Water Resources Branch (W.R.B.). In the present program sites were selected by Mr. R.E. Read of the W.R.B., and drilled by the S.A. Mines Department. Drilling commenced on November 9, 1976 and was completed on December 9; a rotary and a cable tool rig were employed. Of the 6 holes, three (C58, C177 and C189)

were completed as production wells, and the rest were abandoned and backfilled.

Successful wells were airlifted to establish approximate yield, and pump testing is to be carried out at a later date by the W.R.B. Well salinity was estimated using a portable conductivity meter, and samples submitted to the W.R.B. for full analysis.

A Summary of Well Data is presented in Table I.

Table I

SUMMARY OF WELL DATA

Bore No.	Depth (m)	Airlifted Yield(gph)	Approx. Salinity	Drilling Method	Status
C58	124	900	19500	DHH	PW
C125	11	-	15000	CT	AB
C145	120	50	-	CT,DHH	AB
C160	20	dry	-	DHH	AB
C177	81	3000	1670	DHH	PW
C189	68	1500	1080	DHH	PW

Abbreviations

DHH Downhole Hammer (rotary)
CT Cable Tool
PW Production Well (hole cased and developed)
AB Hole abandoned and backfilled due to poor yield or high salinity.

NOTE

(1) Yield based on airlifting only, and is not necessarily the recommended pumping rate, which may be higher or lower depending on the results of future pump testing.

(2) Salinity is approximately only, based on field conductivity tests. All production wells have been sampled for laboratory analysis.

DRILLING METHODS

Both cable tool and rotary techniques were used, the latter with rather more success. The rotary rig was a truck-mounted Mayhew 1000 equipped with a Megadrill Direct Mining (or "downhole") hammer. Air was supplied to the hammer at 700 c.f.m. and 250 p.s.i. by a Holman Compressor. A Ruston 22W Cable tool rig was used to supplement the rotary plant, and for boring in unconsolidated materials which could jam or bury the downhole hammer.

C58

Borehole C58 was originally rotary drilled to 68 m, but had to be abandoned after a tricone bit fragmented at the base of the hole. The rig was shifted about 6 m and the hole redrilled successfully to 124 m.

C125

This hole was put down by a cabletool rig on the north bank of the Finke River. Intended as a source of concrete water, the bore was abandoned at 11 m after groundwater was found to be saline (measured as 15 000 mg/l on a field conductivity meter).

C145

Located a few metres south of the Idracowra/Palmer Valley boundary fence, C145 was initially drilled to 96 m by the cable tool plant, then extended to 120 m by rotary. On airlifting the yield was found to be very poor - about 50 g.p.h. of thin mud - so the hole was abandoned.

C160

C160 was rotary drilled to 20 m, and discontinued after repeated caving by loose dry sand threatened to bury the down-hole hammer. It is possible that this site could be productive at depth, but for any further drilling a cable-tool rig is recommended.

C177

Borehole C177 is located about 9 km south of the Hugh River, and was rotary drilled in the Jay Creek Limestone - here dominantly a shaley unit. About 5000 g.p.h. of fair camp-quality water was airlifted, and the hole completed as a production well.

C189

C189 is similar to C177 in quality, though somewhat less productive (1500 g.p.h. airlifted). It was rotary drilled to 68 m, and completed as a production well.

ACKNOWLEDGEMENTS

I would like to thank Bernd Weber of the N.T. Mines Branch and Bob Read of the Water Resources Branch for assistance in the field during this drilling program. The drilling was carried out by Senior Drillers W.J. Boyd (rotary) and L.A. Hausler (Cable tool), and particular thanks are due to them and their crews for their efficient work in trying summer conditions.

G.H. McNally
GEOLOGIST

APPENDIX - BORE LOGS

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

BORE LOG

PROJECT: TARCOOLA-ALICE SPRINGS RAILWAY

LOCATION OR CO-ORDS:

SEC. HD. EL Surface EL ref. point Datum

HOLE NO. C58
UNIT/STATE NO:
SERIAL NO:
FOLDER NO.

DEPTH TO WATER CUT (m)	DEPTH TO STANDING WATER (m)	SUPPLY *m³/day	SUPPLY Method of test	TOTAL DISSOLVED SOLIDS milligrammes/litre	TOTAL DISSOLVED SOLIDS Analysis W. NO.
90-124	27.3	900 g.p.h. (1.1 l/sec)	airlifted 1 hour	19 500 (approx.)	tested on site

HOLE Dia. / DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
			0	2	Orange-brown slightly silty medium/fine SAND.	Alluvium	Drift Recent	150mm I.D. welded casing, G.L. - 86.8m		
5			2	6	Dark pink to light brown silty m.f. SAND with a little coarse sand and up to 20% of cemented sand fragments (silcrete) and white calcrete nodules.	Pleistocene				
			6	100	Dark red-brown, with spots and streaks of grey-green, very stiff to hard fine sandy fissured CLAY (or clay-shale). Grades downwards into SHALE, with some siltstone present. Abundant fine biotite mica present.	Horseshoe Bend Shale	Palaeozoic			
10										
15										

*NOTE: 1000 gals./hr. = 110 m³/day

REMARKS: Located about 100 m E of C58 km peg. Completed productive.

DRILL TYPE DHH
CIRCULATION: Air
START: 23.11.76
FINISH: 30.11.76

LOGGED BY GHMcN
DATE: 30.11.76
TRACED BY:
DATE:

SHEET.... 1 OF .. 6

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C58

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
			6	100	Dark red-brown CLAY and SHALE, as above.	Horseshoe Bend Shale				

15 20 25 30 35 40

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C58

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
40			6	100	Dark red-brown CLAY and SHALE, as above.	Horseshoe Bend Shale				
45										
50										
55										
60										
65										

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PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C58

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
65			6	100	Dark red-brown CLAY and SHALE, as above.	Horseshoe Bend Shale		150mm I.D. welded		
70										
75					78-80 m Purple and white shale.					
80										
85										
90										

SHEET 4 OF 6

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C58

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
90			6	100	Dark red-brown CLAY and SHALE, as above.	Horseshoe Bend Shale	Palaeozoic			
95										
100			100	111	Fine sandy SHALE, as above, but fresher, stronger and dominantly grey-green rather than red-brown. Some siltstone and a few chips of orange fine sandstone.					
105										
110										
			111	124	Light red-brown with white specks medium SANDSTONE. Sand is 75% quartz, 25% felspar. About 10% of chips are dark red-brown and grey siltstone (from above?).	Langra Fm.				
115										

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PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C58

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
115			111	124	Light red-brown medium SANDSTONE, as above.	Langra Formation				
120					END OF HOLE, 124.0 m					

SHEET 6 OF 6

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

BORE LOG

PROJECT: TARCOOLA-ALICE SPRINGS RAILWAY

HOLE NO. C125

UNIT/STATE NO:

SERIAL NO:

FOLDER NO.

LOCATION OR CO-ORDS:

SEC. HD.

EL Surface

EL ref. point Datum

DEPTH TO WATER CUT (m)	DEPTH TO STANDING WATER (m)	SUPPLY *m³/day	SUPPLY Method of test	TOTAL DISSOLVED SOLIDS milligrammes/litre	TOTAL DISSOLVED SOLIDS Analysis W. NO.
7.0	5.0		not tested	about 15 000	tested on site

HOLE Dia.	DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
	5			0	11	Light red-brown silty medium and fine quartz SAND with a little gravel. Coarse gravel (cobbles?) 7-8 m.	Alluvium	Recent			
	10					END OF HOLE, 11.0 m					

*NOTE: 1000 gals./hr. = 110 m³/day

REMARKS: Located about 120 m NE of C125 km peg, north bank of Finke River. Abandoned and backfilled due to saline water.

DRILL TYPE C.T.

CIRCULATION:

START: 9.11.76

FINISH: 11.11.76

LOGGED BY: GHMcN

DATE: 17.11.76

TRACED BY:

DATE:

SHEET 1 OF 1

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT: TARCOOLA-ALICE SPRINGS RAILWAY

BORE LOG

HOLE NO. C145
UNIT/STATE NO:
SERIAL NO:
FOLDER NO.

LOCATION OR CO-ORDS:
SEC. HD.
EL Surface
EL ref. point Datum

DEPTH TO WATER CUT (m)	DEPTH TO STANDING WATER (m)	SUPPLY *m³/day	SUPPLY Method of test	TOTAL DISSOLVED SOLIDS milligrammes/litre	TOTAL DISSOLVED SOLIDS Analysis W. NO.
64	39.0	approx. 50 g.p.h.	airlifted		not tested

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
			0	5	Light brown SAND and sandy CLAY, with fine silcrete and siltstone grit.		Tertiary?			
5			5	120	Red-brown stiff silty CLAY with traces of sand (weathered shale).		Proterozoic Pertatataka Formation			
10										
15										

*NOTE: 1000 gals./hr. = 110 m³/day

REMARKS: Located about 100 m W of C145 km peg. Originally drilled to 96 m by cable tool, deepened to 120 m by rotary-percussion. Abandoned due to poor yield.

DRILL TYPE
LOGGED BY GHMcN
CIRCULATION:
DATE:
START: 14.11.76
TRACED BY:
FINISH: 7.12.76
DATE:
SHEET 1 OF 6

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

BORE LOG

CONTINUATION SHEET

PROJECT:

HOLE NO. C145

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
			5	120	Red-brown silty CLAY, as above.		Pertataka Fm.			

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PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C145

UNIT/STATE NO:

HOLE Dia DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
40			5	120	Red-brown silty CLAY, as above.					
45										
50					53 m. Intact bailer sample of moist red-brown to brown mottled clay, with about 3% ironstone grit (to 3 mm). The clay is stiff and easily bored.	Pertataka Fm.				
55										
60										
65										

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BORE LOG

CONTINUATION SHEET

PROJECT:

HOLE NO. C145

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
65			5	120	Red-brown silty CLAY, as above.	Pertataka Fm				
70										
75										
80					80-90 m (approx.) about 30% shale fragments mixed with silt/clay sludge.					
85										
90										

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BORE LOG

CONTINUATION SHEET

HOLE NO. C145

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
90			5	120	Red-brown silty CLAY, as above.	Pertataka Fm.				
95										
100										
105										
110										
115										

SHEET 5 OF 6

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C145

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
115			5	120	Red-brown silty CLAY, as above.	Pertatata Fm.				
120					END OF HOLE, 120.0 m					

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

BORE LOG

PROJECT: TARCOOLA-ALICE SPRINGS RAILWAY

HOLE NO. C160
UNIT/STATE NO:
SERIAL NO:
FOLDER NO.

LOCATION OR CO-ORDS:

SEC. HD. EL Surface EL ref. point Datum

DEPTH TO WATER CUT (m)	DEPTH TO STANDING WATER (m)	SUPPLY *m³/day	SUPPLY Method of test	TOTAL DISSOLVED SOLIDS milligrammes/litre	TOTAL DISSOLVED SOLIDS Analysis W. NO.
dry					

HOLE Dia.	DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
				0	2	Bright orange silty m.f. quartz SAND, weakly cemented in places.		Recent			
				2	4	Light pinkish brown c.m.f. quartz SAND, weakly cemented in places.					
	5			4	8	Light dirty yellow clear m.f. SAND with 3% of angular sandstone chips.					
				8	10	As 4-8 m, with 10-15% dry grey clay fragments (clay apparently present as partings, not as matrix).		Tertiary ?			
	10			10	12	As 8-10 m, slightly pinkish, clay 5%.					
				12	14	Light brown silty m.f. quartz SAND with 10% sandstone chips.					
	15			14	16	Light pinkish brown loose clean m.f. SAND with 5-10% clay pellets.					

*NOTE: 1000 gals./hr. = 110 m³/day

REMARKS: Located about 60 m E of C160 km peg. Abandoned and backfilled due to caving of loose sand at 20 m.

DRILL TYPE DHH	LOGGED BY GHMcN
CIRCULATION: Air	DATE: 6.12.76
START: 4.12.76	TRACED BY:
FINISH: 4.12.76	DATE:

SHEET.... 1 OF .. 2

DEPARTMENT OF MINES — SOUTH AUSTRALIA
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PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C160

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
15			14	16	Light brown clean SAND, as above.					
			16	20	Very loose, light dirty yellow c.m.f. quartz SAND. No fines, no rock fragments. NO SAMPLE TAKEN, 18-20 m.		Tertiary?			
20					END OF HOLE, 20.0 m					

SHEET 2 OF 2

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT: TARCOOLA-ALICE SPRINGS RAILWAY

BORE LOG

HOLE NO. C177
UNIT/STATE NO:
SERIAL NO:
FOLDER NO.

LOCATION OR CO-ORDS:

SEC. HD. EL Surface EL ref. point Datum

DEPTH TO WATER CUT (m)	DEPTH TO STANDING WATER (m)	SUPPLY *m³/day	SUPPLY Method of test	TOTAL DISSOLVED SOLIDS milligrammes/litre	TOTAL DISSOLVED SOLIDS Analysis W. NO.
	42.1 m	3 000 g.p.h. (3.8 l/sec)	Airlifted, 1 hour	approx. 1 670	tested on site

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
			0	1	Red-brown SILT soil.					
			1	81	Light grey, light grey-green and dark red-brown calcareous SHALE with bands of muddy limestone. 1-4 m, mostly light grey limestone.	Jay Creek Limestone	Cambrian	150 mm I.D. welded casing, G.L. - 11.2 m		
					4-6 m, red-brown shale.					
5					6-7 m, white limestone.					
					7-10 m, dark red-brown shale.					
10					10-12 m, white limestone and red-brown shale					
					12-14 m, mostly purple-brown shale.					
					14-18 m, mostly white/light grey limestone.					
15										

*NOTE: 1000 gals./hr. = 110 m³/day

REMARKS Located about 100 m W of C177 km peg.
Completed productive.

DRILL TYPE DHH
CIRCULATION: Air
START: 2.12.76
FINISH: 4.12.76

LOGGED BY GHMcN
DATE: 4.12.76
TRACED BY:
DATE:

SHEET 1 OF 4

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

BORE LOG

CONTINUATION SHEET

PROJECT:

HOLE NO. C177

UNIT/STATE NO:

HOLE DIA / DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
			1	81	Calcareous SHALE with limestone bands, as above.					
					14-18 m, mostly white/light grey limestone.					
					18-20 m, dark red-brown shale, non-calcareous.					
					20-22 m, white/light grey/red-brown shale					
					22-24 m, dark red-brown shale.					
					24-26 m, white/light grey/red-brown shale.					
					26-28 m, mostly white to light grey shale, slightly calcareous.					
					28-32 m, mostly red-brown, with minor white shale.					
					32-37 m, as above, light grey shale predominant.					
					37-40 m, purplish red-brown shale.					

Jay Creek Limestone

15 20 25 30 35 40

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C177

UNIT/STATE NO:

HOLE DIA / DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE
40			1	81	Calcareous SHALE with limestone bands, as above
					40-42 m, light grey, white, dark red-brown shale
					42-50 m, dark purple-brown shale, slightly to non-calcareous
45					
50					50-56 m, mostly purple-brown as above, with 10% white shale fragments.
55					
					56-58 m, white, pink and light grey calcareous shale
					58-60 m, dark purple shale
60					60-64 m, dark purplish red-brown shale with 10% light grey.
65					

UNIT: Jay Creek Limestone

AGE | CASING | WATERS CUT | WATER LEVEL

DEPARTMENT OF MINES — SOUTH AUSTRALIA
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BORE LOG

CONTINUATION SHEET

HOLE NO. C177

UNIT/STATE NO:

HOLE Dia / DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
65			1	81	Calcareous SHALE with limestone bands, as above. 64-74 m, dark red-brown shale.	Jay Creek Limestone				
70					74-78 m, dark purple, white and grey shale, with large fragments of white limestone (to 60 m)					
75					78-80 m, dark purple shale					
80					80-81 m, large fragments (60 mm) of light grey and off-white limestone with shale laminae. Porous (5-10%).					
					END OF HOLE, 81.0 m					

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT: TARCOOLA-ALICE SPRINGS RAILWAY

BORE LOG

HOLE NO. C189

UNIT/STATE NO:

SERIAL NO:

FOLDER NO.

LOCATION OR CO-ORDS:

SEC. HD.

EL Surface

EL ref. point Datum

DEPTH TO WATER CUT (m)	DEPTH TO STANDING WATER (m)	SUPPLY *m³/day	SUPPLY Method of test	TOTAL DISSOLVED SOLIDS milligrammes/litre	TOTAL DISSOLVED SOLIDS Analysis W. NO.
26-52	16.6	1 500 g.p.h. (1.9 l/sec)	airlifted, 1 hour	approx. 1 080	tested on site

HOLE Dia. / DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
5			0	1.8	Bright orange medium/fine SAND, slightly silty.	Drift	Recent			
			1.8	13	Yellowish white weathered fine SANDSTONE. Sample consists of very silty fine sand with 5% of fine sandstone chips.	Silurian (?) - Devonian Mereenie Sandstone		150mm O.D. threaded casing, G.L. - 12.75m		
10			13	33	Weathered SANDSTONE as above, proportion of rock chips increasing to 10-20%. Light grey colour.					
15										

*NOTE: 1000 gals./hr. = 110 m³/day

REMARKS: Located 100 m E of C189.2 km. Completed productive.

DRILL TYPE: DHH
CIRCULATION: Air
START: 8.12.76
FINISH: 9.12.76

LOGGED BY: GMNcN
DATE: 9.12.76
TRACED BY:
DATE:

SHEET 1 OF 4

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C189

UNIT/STATE NO:

HOLE Dia. DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
15			13	33	Light grey weathered fine SANDSTONE, as above. Becoming slightly moist below 20 m.	Mereenie Sandstone				
20										
25										
30										
			33	46	Orange and light grey fine SANDSTONE, as above (orange colour may be due to washing down from 0-2 m).					
35										
40										

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

PROJECT:

BORE LOG

CONTINUATION SHEET

HOLE NO. C189

UNIT/STATE NO:

DEPTH (m) from	DEPTH (m) to	GEOLOGICAL DESCRIPTION OF SAMPLE
33	46	Orange and light grey fine SANDSTONE, as above.
46	68	Mainly light grey, fine SANDSTONE. Fresh to slightly weathered. Chips 50% + of sample, light to dark grey and dark purple-brown fine, quartz sandstone.

UNIT: Mereenie Sandstone

AGE

CASING

WATERS CUT

WATER LEVEL

DEPARTMENT OF MINES — SOUTH AUSTRALIA
ENGINEERING DIVISION

BORE LOG

CONTINUATION SHEET

HOLE NO. C189

UNIT/STATE NO:

PROJECT:

HOLE DIA DEPTH m	CORE	GRAPHIC LOG	DEPTH (m) from	to	GEOLOGICAL DESCRIPTION OF SAMPLE	UNIT	AGE	CASING	WATERS CUT	WATER LEVEL
65			46	68	Light grey fine SANDSTONE, as above.					
					END OF HOLE, 68.0 m					

ALICE SPRINGS
Mt. Gillen
RANGE
Todd
River
MACDONNELL SIDING
MACDONNELL
HIGHWAY
STUART
CENTRAL AUSTRALIAN RAILWAY
C 250
C 240
C 230
ALICE SPRINGS
RODINGA
24°00'
133°45'
C 220
C 210
Dingo Bore
C 200
JAMES
RANGES
Hugh
River
C 190
C 189
Stock Route
HUGH RIVER CROSSING
C 180
C 177
River
C 170
C 160
C 150
C 145
C 140
24°45'
138°30'

REFERENCE

- C200 .... ROUTE OF TARCOOLA-ALICE SPRINGS RAILWAY WITH DISTANCES IN km.
- ROAD
- TRACK
- HOMESTEAD, STATION
- STREAM, INTERMITTENT
- ● C58 ..... SUCCESSFUL BORE
- ○ C125 ..... UNSUCCESSFUL BORE
- EXISTING WELL

SCALE 1:250000

5 0 5 10 15 20 25

kilometres

133°30'
C140
MARYVALE
CHARLOTTE RANGE
Finke
River
C130
C125
Idracowra H.S.
25°00'
C120
RODINGA
KULGERA FINKE
C110
C100
IMPADNA SIDING
ERIDUNDA
C90
Ck.
Karinga
Mt. Kingston No 2 Dam
C80
C70
C60
C58
C50
C40
< 3 Sandstone
Baystone Bore
C30
C20
HIGHWAY
Sandstone
mulgra bore 16km
< 10
1000-1500 mg/l
110-125 m³/h
Kulgera
112mg/l
130mg/l
127mg/l
Ironwood Bore
KULGERA SIDING
FINKE
Poor yield
good water
granite
C10
Lynbrook BORE
180mg/l
Ourouya
STUART
150mg/l
Calamity Bore
Creek
Mt. Cavenagh
FINKE 1:250,000 SHEET
26°00'
ABMINGA
200/300
NORTHERN TERRITORY
SOUTH AUSTRALIA
KULGERA
ALBERGA
KINGOONYA
133°45'
133°30'

	DEPARTMENT OF MINES—SOUTH AUSTRALIA		SCALE 1: 250000
COMPILED: G. McNally	TARCOOLA—ALICE SPRINGS RAILWAY		DATE 25th JAN. 1977
DRN: TE CKD.	NORTHERN TERRITORY SECTION		PLAN NUMBER 77-51
	LOCATION OF WATER BORES—1976 PROGRAM		

NT