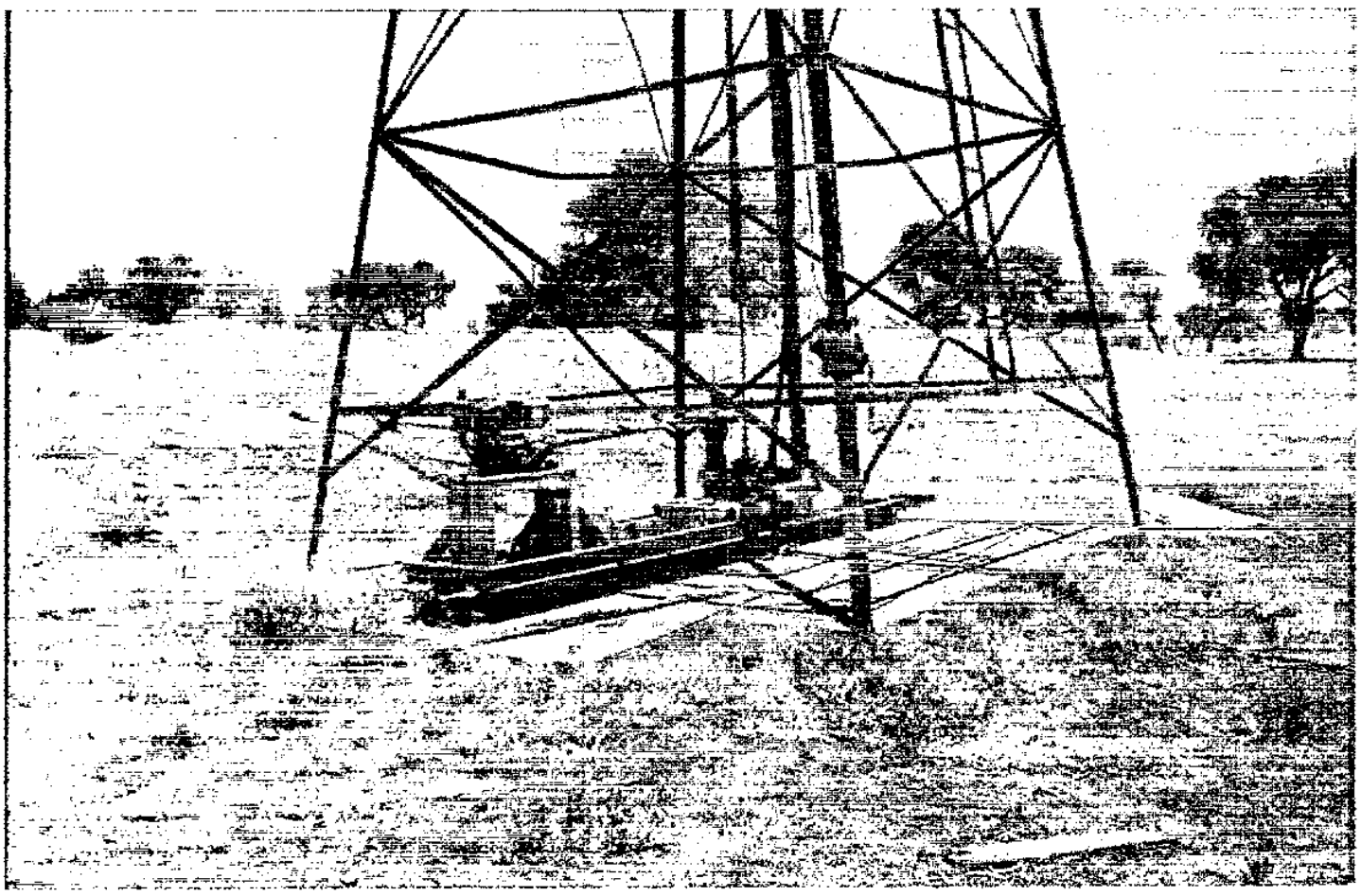
WATER RESOURCES ASSESSMENT PROJECT *** ALICE SPRINGS REGION

AMOONGUNA August 1997

BORE INFORMATION SHEET *** Amoonguna No 41

REGISTERED BORE NUMBER: RN 3781

AMOONGUNA NUMBER 41: Water Supply Investigation Bore



Rockyhill number 1 bore

This bore was drilled by the Water Resources Branch for the Welfare Branch, of the Northern Territory Administration, Federal Department of the Interior in April 1963.

The Bore site was selected by the Bureau of Mineral Resources resident geologist.

It was one of a series of bores constructed in the general area to provide a water supply for the Amoonguna settlement.

The bore was drilled to a total depth of 60.96 metres (200 feet) for a small supply of water. The standing water level was 39.93 metres (131 feet).

The bore was abandoned and another bore drilled nearby.

LOCATION:

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AMOONGUNA AUG 1997

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Locality:	Amoonguna Lot 594, Town of Alice Springs
Owner:	Amoonguna Aboriginal Land Trust
Location:	xxx metres south of the Amoonguna Community Office

Australian Grid Co-ordinates	Zone SG53	Easting: 391 xxx	Northing: 7 369 ccc
Located by GPS	14	Latitude:	Longitude:

DRILLING DETAILS:

Total Depth: 60.96 metres	**Drilling Commenced:** 26/2/xx **Drilling Completed:** 8/4/63
Driller:	Gordon Ridge, Water Resources Branch driller
Drilling Technique:	Rotary (Rig 10)
Equipment Above Ground:	Nil
Equipment Below ground:	Nil.

MAJOR WATER BEARING STRATA (Aquifers)

The following data was extracted from the Regulation 8 Statement by the driller submitted at the completion of drilling to comply with the Control of Waters Act.

Depth (metres)	**Supply** (litres per second)	**Standing Water Level** (metres)	**Quality**
	small	39.93 (131 feet)	fair

Water was encountered in the Bitter Springs Limestone Formation.

There is around 20 metres of saturated rock were drilled below the water table at this location.

WATER ANALYSIS:

Currently there are four known water analyses of samples from this bore.

1. **Water analysis data sheet sample from bore RN 6989** from an airlift sample at completion of drilling received in Darwin Laboratory 29/7/70:

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Analysed By: Northern Territory Administration, Water Resources Branch laboratory: M Dobbe 1/10/70

Total dissolved salts: 1200 Date analysed: 1/10/70
Conductivity @ 25°C: 780 pH 7.9

Sodium	200	Chloride	141
Potassium	12	Sulphate	139
Calcium	35	Nitrate	5
Magnesium	23	Bicarbonate	371
Total Hardness	190	Carbonate	
Total Alkalinity	190	Fluoride	2.0
Iron	4.4	Phosphate	< 1
Silica		Sodium Chloride	

DISCUSSION ON CHEMICAL QUALITY OF THE GROUNDWATER:

The water is suitable for human consumption, agricultural and stock use. Except for the hardness it is good quality groundwater.

The bore is adjacent to a significant recharge zone (the bed of the adjacent Todd River).

DRILLERS LOG:

From the Regulation 8, Final Statement of Bore, completed by the driller to comply with the Control of Waters Act

From (metres)	To (metres)	Strata
0	8.5 (20 feet)	Sand & gravel
	9.8 (405 feet)	Mereenie Sandstone

GEOLOGISTS LOG:

From the Regulation 8, Final Statement of Bore, completed by the driller to comply with the Control of Waters Act

From	To	Strata

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(metres)	(metres)	
0	6.1	COARSE SAND. Coarse pebbly sand with iron stained grains plus fine white sand (reworked Mereenie ?)
6.1	61	SANDSTONE. predominantly very fine quartz sand grading to medium. grains mostly well rounded, some Subangular. many grains frosted and pitted. white kaolinitic interstitial material
61.0	70.1	SANDSTONE. As above but contaminated with pebbles
70.1	123.5	Samples missing

INTERPRETATION OF THE LOGS:

From (metres)	To (metres)	Strata
0	2	Quaternay aged recent sediments
2	49	Tertiary aged sediments
49	61	Bitter Springs Formation

GENERAL INFORMATION:

Water resources Branch Bore Inspector C Blyth visited the bore on the 4/8/78 and commented that the Bore was equipped with a GM motor, tripod & 6 inch OD casing. He also noted that the bore was 0.4 kilometres west of Bore A 70/8.

Water Resources Branch, Bore Inspector R Marks visited the bore on 3/4/89 and noted the bore was not being used but was equipped with 6 inch casing, 4 inch column, Giles & Gakin pump head, Yangzhou diesel (50 HP) 4 cylinder, a pump house shed & 22 foot tripod.

He carried out a satellite fix and noted that the bore was 300 metres south of Production Bore RN 10669.

ADJACENT BORES:

A line of four bores were drilled from the main gate towards the Ross Highway to assess potential aquifers in this location.

These bores were Amooguna 41; 42; 43; 44 (RN 3781; 3782; 3783; 3784.

GEOLOGY:

This bore is drilled into the Mereenie Formation one of the formations of the Amadeus Sedimentary Basin which covers an area of approximately 80,000 square kilometres.

BORE INFORMATION SHEET *** Amoonguna No 41

GROUNDWATER AVAILABILITY:

The bore

The Area:

Moderate yields of water are available in this area. Whilst the safe yield of the area has not been calculated continuous yields of up to 3 litres per second are possible but require good bore construction techniques which are expensive.

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Depth (m)	Bore Construction	Graphic Log	Strata Description	Aquifers (Water struck) Supply (L/s)	TDS (mg/l)	Depth (m)
0	Rotary drilled		Quaternary aged alluvial sediments sandy clays, sand, gravel & clays			
10			Tertiary aged sedimentary rocks, sandy clays, sand tends to be very fine			
20						
30			clays tend to be multicoloured in different sequences, whites, yellows, browns, reds			
40			SWL 40			
50						
60			Bitter Springs Formation			
70	Total depth 60.96					
80						
90						

Date of Bore Completion: 8/4/63

COMPOSITE LOG OF BORE: RN 3781

NATIONAL LANDCARE PROGRAMME

Assessment by Landcare Engineer: Graham Ride

AMOONGUNA NO. 41

Description of Samples

5'	Brown silt
	UNCONFORMITY - TERTIARY TOP
10'-15'	Mottled grey and brown fine sandy clay
20'-30'	White fine grained sandy clay
35'	Mottled white and pink fine grained sandy clay
40'-45'	Mottled white and yellow fine sandy clay
50'-84'	Mottled white and pink fine sandy clay
84'-90'	Billy
90'	White and cream fine sandy clay
95'-120'	White fine sandy clay
125-130'	White andyellow fine to medium sandy clay with a few chips of billy up to ½ inch
135'-140'	Yellow and grey fine to coarse sandy clay, with a few chips of black limestone
145'-160'	Grey and yellow-brown fine to medium sandy clay
	UNCONFORMITY - BITTER SPRINGS TOP
165'-200'	Pale grey and yellow finely laminated claystone.

D. WOOLLEY,
Resident Geologist.

N.T.A. WATER RESOURCES BRANCH

BORE DATA SHEET

SF53-14
173038

1 m N of Amoonguna main gate

NAME	Amoonguna 41	INDEX No.	16/408
LOCALITY	Emily Gap	REG. No.	3781
DEPTH	200' 60.97m	FILE No.	
CASINGS	Nil	PERFORATIONS / SCREENS	
LOCATION	/ / E N	SURFACE LEVEL R.L.	B M LEVEL R.L. / DATUM
CONTRACTOR.	W.R.B.	DRILLER. Ridge	DATE STARTED. 7/4/63 / DATE FINISHED. 8/4/63

WATER

AQUIFERS				
DEPTH STRUCK				
AQUIFER THICKNESS				
STANDING WATER LEVEL	41.7 137			
PUMP TEST G.P.H.				
DRAWDOWN LEVEL				
PUMP LEVEL				
DURATION OF TEST HOURS				
R.L. S.W.L.				
WATER TEMPERATURE °C				
TRANSMISSIBILITY				
STORAGE COEFF				
ANALYSES				
BINOMIAL CLASSIFICATION				
T.D.S.				
CONDUCTIVITY				
TOTAL HARDNESS				
CHLORIDE				
BICARBONATE				
CARBONATE				
SULPHATE				
NITRATE				
FLUORIDE				
SODIUM				
POTASSIUM				
CALCIUM				
MAGNESIUM				
REG. ANAL. No.				

EQUIPMENT.

REMARKS.

STRATA SECTION

DEPTH FEET	CASING	AQU.	SEC.	STRATA
0				Brown silt. Unconformity - Tertiary Top
10				Mottled grey and brown fine sandy clay
20				White fine grained sandy clay
30				Mottled white and pink fine grained sandy clay
40				Mottled white and yellow fine sandy clay
50				Mottled white and pink fine sandy clay
80				Billy
90				White and cream fine sandy clay
94				White fine sandy clay
125				White and yellow f/m sandy clay with few chips billy up to ½"
136				Yellow & grey fine/coarse sandy clay with few chips black limestone
145				Grey and yellow brown fine/med. sandy clay
165				Unconformity - Bitter Spgs. Top
200				Pale grey & yellow finely laminated claystone.

RN003781

N.T.A. WATER RESOURCES BRANCH

BORE DATA SHEET

NAME	Amoonguna 41 — 1 m N of Amoonguna main gate	INDEX No.	16/408
LOCALITY	Emily Gap	REG. No.	3781
DEPTH	200'	FILE No.	
CASINGS		PERFORATIONS / SCREENS	
LOCATION	/ / E N	SURFACE LEVEL R.L.	B M LEVEL R.L. / DATUM
CONTRACTOR.	WRB	DRILLER. Ridge	DATE STARTED. 7/4/63 — DATE FINISHED. 8/4/63

WATER

AQUIFERS				
DEPTH STRUCK				
AQUIFER THICKNESS				
STANDING WATER LEVEL	137			
PUMP TEST G.P.H.				
DRAWDOWN LEVEL				
PUMP LEVEL				
DURATION OF TEST HOURS				
R.L. S.W.L.				
WATER TEMPERATURE °C				
TRANSMISSIBILITY				
STORAGE COEFF.				
ANALYSES				
BINOMIAL CLASSIFICATION				
T. D. S.				
CONDUCTIVITY				
TOTAL HARDNESS				
CHLORIDE				
BICARBONATE				
CARBONATE				
SULPHATE				
NITRATE				
FLUORIDE				
SODIUM				
POTASSIUM				
CALCIUM				
MAGNESIUM				
REG. ANAL. No.				

EQUIPMENT.

REMARKS.

STRATA SECTION

DEPTH FEET	CASING	AQU.	SEC.	STRATA
			0	Brown silt. Unconformity - Tertiary Tap.
			10	Mottled grey & brown fine sandy clay
			20	
20				White fine grained sandy clay
			30	Mottled white and pink fine grained sandy clay
40			40	
			50	Mottled white & Yellow fine sandy clay
				Mottled white and pink fine sandy clay
60			84	Billy
			90	White and cream fine sandy clay
			95	White fine sandy clay
120			125	White andyellow f/m sandy clay with a few chips of billy up to 1/2 inch.
			135	Yellow and grey fine to coarse sandy clay, with a few chips of blakk limestone.
			145	Grey & yellow brown fine to medium sandy clay
160			165	Unconformity - Bitter Springs Tap
				Pale grey & yellow finely laminated claystone.
200			200	

3781

16/408

AMOONGUNA NO. 41

Description of Samples

5'	Brown silt
	UNCONFORMITY - TERTIARY TOP
10'-15'	Mottled grey and brown fine sandy clay
20'-30'	White fine grained sandy clay
35'	Mottled White and pink fine grained sandy clay
40'-45'	Mottled white and yellow fine sandy clay
50'-84'	Mottled white and pink fine sandy clay
84'-90'	Billy
90'	White and cream fine sandy clay
95'-120'	White fine sandy clay
125-130'	White andyellow fine to medium sandy clay with a few chips of billy up to ½ inch
135'-140'	Yellow and grey fine to coarse sandy clay, with a few chips of black limestone
145'-160'	Grey and yellow-brown fine to medium sandy clay
	UNCONFORMITY - BITTER SPRINGS TOP
165'-200'	Pale grey and yellow finely laminated claystone.

D. WOOLLEY,
Resident Geologist.