DEPARTMENT OF MINES
SOUTH AUSTRALIA

EYRE PENINSULA GROUNDWATER STUDY
CONSOLIDATED REPORT NO. 2
SUMMARY OF AVAILABLE DATA - JUNE 1970.

by

J.A.C. PAINTER
ASSISTANT SENIOR GEOLOGIST
HYDROGEOLOGY SECTION

CONTENTS

	PAGE
SUMMARY AND CONCLUSIONS	1
INTRODUCTION	1
LINCOLN BASINS	2
ULEY-WANILLA BASIN	2
COFFIN BAY BASINS	2
ULEY SOUTH BASIN	2
ULEY EAST BASINS	3
SHERINGA BASINS	3
KAPPANANTA BASIN	3
BRAMFIELD BASIN	3
POLDA BASIN	4
TALIA BASIN	4
PORT KENNY BASIN	4
ROBINSON BASIN	4
REFERENCES	5

Rept.Bk.No.70/151
G.S.No.4536
Hyd.No.2274
D.M.No. ~~1681/68~~ 106/69

29th September, 1970

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No.70/151
G.S.No.4536
Hyd.No.2274
D.M.No. ~~[illegible]~~
106/69

EYRE PENINSULA GROUNDWATER STUDY
CONSOLIDATED REPORT NO. 2
SUMMARY OF AVAILABLE DATA - JUNE 1970

SUMMARY AND CONCLUSIONS

Each of 18 groundwater basins on Eyre Peninsula contains 1, 2 or 3 aquifers. The basins range in area from 2 to 63 square miles, and have a total area of 400 square miles.

The assessed natural basin yields for the individual basins range from 0.2 to 8 cusecs, with a total yield of 39 cusecs.

INTRODUCTION

Since the issue of Consolidated Report No.1 (Painter, 1968) pump testing has been carried out in five of the Co. Musgrave basins. Further drilling has also been carried out, and a number of areas subjected to intensive re-appraisal. As a result of this work more accurate assessments of yield for several basins have been made. The further work is described briefly in the following sections, and a full summary is given in Table 1.

LINCOLN BASINS

No change.

ULEY-WANILLA BASIN

No change.

COFFIN BAY BASINS

The Coffin Bay basins occupy a small area east of Coffin Bay township (Fig.1). They were not included in Consolidated Report No. 1 because of their small size and relative unimportance. However, in view of their potential as a source of water for the township, an examination of records was made and a report issued (Painter, 1970a).

ULEY SOUTH BASIN

Pumping tests carried out during 1969 have thrown doubt on the reliability of data used in previous basin assessments (Painter, 1969). Re-assessment of this basin has been made.

ULEY EAST BASINS

No change.

SHERINGA BASINS

These were jointly referred to as Way Basin in Consolidated Report No.1. However it is now considered that the two areas are sufficiently separated by more saline waters, and not directly connected hydraulically, that they are now referred to as Sheringa A and Sheringa B basins (Fig.1).

The pumping test has been carried out in each area, and re-assessments made. (Painter, 1970b).

KAPPAWANTA BASIN

Pumping tests have been carried out in both aquifers of this basin (Painter 1970b). Re-assessments have been made on the basis of pump test results.

BRAMFIELD BASIN

Two pumping tests have been carried out in Bramfield Basin, and re-assessments made (Painter 1970b).

POLDA BASIN

Re-appraisal of bore logs has shown that in part of the Polda Basin Aquifer A does not occur in areas where it was previously thought to occur. In addition, pumping tests were attempted in certain areas but were abandoned due to insufficient supply. In the light of these facts re-appraisal of the basin has been made.

TALIA BASIN

The pumping tests carried out elsewhere in Co. Musgrave indicate that first assessments for Talia Basin were based on erroneous data. Re-assessments have been made.

PORT KENNY BASIN

Further work has been carried out in Port Kenny Basin. On the basis of this work, and for the reasons outlined above for Talia Basin re-assessments have been made (Painter, 1970c).

ROBINSON BASIN

No change.

J. Painter for AJ

J.A.C. PAINTER
ASSISTANT SENIOR GEOLOGIST
HYDROGEOLOGY SECTION

JACP:PMM
29th September, 1970

REFERENCES

PAINTER, J.A.C., 1968. Eyre Peninsula Groundwater Study, Consolidated Report No.1, Summary of Available Data - October 1968. S.A. Dept. of Mines, Rept. Bk. No.67/108.

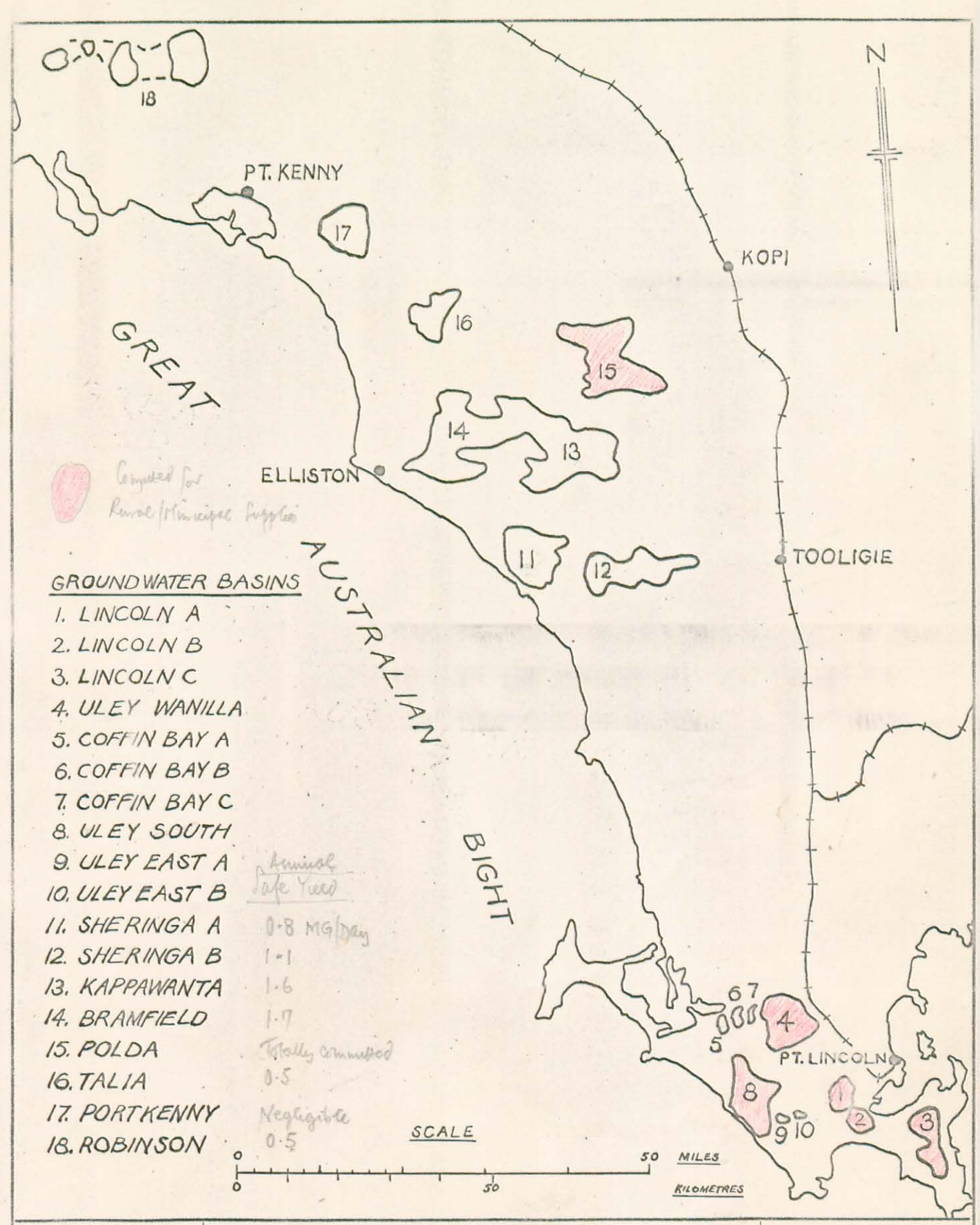
PAINTER, J.A.C., 1970a. Eyre Peninsula Groundwater Study, Coffin Bay Township Supply. Progress Report No.1, S.A. Dept. of Mines Report in Preparation.

PAINTER, J.A.C., 1969. Eyre Peninsula Groundwater Study, Uley South Basin, Progress Report No. 2 - Aquifer Evaluation. S.A. Dept. of Mines Rept. Bk. No. 69/77.

PAINTER, J.A.C., 1970b. Eyre Peninsula Groundwater Study, Co. Musgrave Basins, Progress Report No. 19, Status of Investigations at 30th June, 1970. S.A. Dept. of Mines Report in preparation.

PAINTER, J.A.C., 1970c. Eyre Peninsula Groundwater Study, Port Kenny Basin, Progress Report No. 3. S.A. Dept. of Mines, Report in preparation.

BASIN NO.	NAME	TOTAL AREA OF BASIN (SQ.miles)	AQUIFER TYPE (1)	AREA (Sq.miles)	AQUIFER THICKNESS (ft) Range	Predominant(2)	HYDRO-LOGICAL CONDI-TION(3)	AQUIFER CHARACTERISTICS(4) T(usea/ft)	S	MAX. YIEL INDI VIDU HOLE (ous	WITH-DRAWAL FROM BASIN 1969/70	NATURAL BASIN YIELD ASSESSMENT (5)	(6)	BASIS FOR ASSESS-MENT (7)	COMMENTS	REFERENCE	NOTES
1	Lincoln A	6	A	6	0-50	30	U	-	-	0.8	1.55	1.6	-	1			(1) Aquifer Type. A=Aeolianite. B=Sand (Tertiary)
2	Lincoln B	5	A	5	30-130	80	U	-	-	0.5	0.44	0.5	-	1	Salinity increases with depth.		(2) Predominant thickness. * indicates full thickness of the aquifer not penetrated.
3	Lincoln C	7	A	7	10-65	50	U	-	-	0.4	0.44	0.5	-	1			(3) Hydrological condition. U=Unconfined, C=Confined.
4	Uley-Wanilla	23	A	23	3-20		U	-	-	0.5	1.16	1.2	-	1			(4) Aquifer Characteristics. *indicates the figures are approximate
5	Coffin Bay A	2	A/B	2	3-58 11-190	100	U	-	-	-	-	-	0.2	4		Basins 5,6,7 - Painter 1970a	(5) Yield Assessment - by applying Darcy's Law.
6	Coffin Bay B	4	A/B	4	5-91 17-300	200	U	-	-	-	-	0.4	0.4	4	Salinity may increase with depth.		(6) Yield Assessment - by assessing intake of proportion of rainfall.
7	Coffin Bay C	3	A/B	3	5-43 15-140	75	U	-	-	-	-	0.3	0.3	4			(7) Basis for Assessment:
8	Uley South	40	A	40	13-147 4-45	45	U	*2x10^{-1}	5x10^{-2}	2.8	-	8	4	3		Basin 8 - Painter, 1969	1. Actual withdrawals and water levels in basin.
			B	40	15-130 5-40	70	C	8.5x10^{-2}	7x10^{-3}	1.3	-	3	-	2	Vertical leakage through overlying confining bed.		2. Pumping tests in basin - reliable data.
9	Uley East A	2	A	2	0-20	6	U	-	-	-	-	0.3	-	4			3. Pumping tests in basin - doubtful data.
10	Uley East B	3	A	3	40-90	27	U	-	-	-	-	0.4	-	4			4. Pumping tests in similar materials in other basins.
11	Sheringa A	20	A	16	14-39	12	U	4.3x10^{-1}	6.1x10^{-3}	2.1	-	4	1.2	3		Basins 11,12, 13,14,15,16, - Painter 1970b	General Note - Aquifer C has been ignored because of its limited area and lack of knowledge of its character.
			B	4	25-50	35	C	-	-	-	-	0.2	-	4			
12	Sheringa B	31	A	31	13-46	20	U	* 10^{-1}	10^{-2}	0.39	-	2	2.3	2			
13	Kappawanta	61	A	18	26-41	25	U	1.6x10^{-1}	4.1x10^{-2}	0.91	-	3.5	1.3	3			
			B	43	40-140	100	U & C	* 10^{-2}	10^{-3}	0.27	-	0.4	1.6	3			
14	Bramfoeld	63	A	21	26-48	20	U	*2x10^{-1}	10^{-2}	1.83	-	4	1.6	3			
			B	42	50-75	60	U & C	-	-	-	-	3	1.6	4			
15	Polda	43	A	29	8-36	15	U	2.7x10^{-1}	2.5x10^{-2}	1.9	0.93	3	1.8	2			
			B	14	15-30	30	U & C	-	-	-	-	0.25	0.5	4			
16	Talia	30	A	9	4-11	8	U	-	-	-	-	1	0.5	4			
			B	21	40-90	50	U	79 -	-	-	-	0.3	0.6	4			
17	Port Kenny	15	B	15	-	70	C	46 -	-	-	-	0.4	-	4	Salinity may increase with depth.	Basin 17 - Painter 1970c	
18	Robinson	50	A	14	2-5 6-15	10	U	-	-	-	0.26	0.4	-	4			
			B	36	-	-	U	-	-	-	-	0.4	-	4			



HYDROGEOLOGY SECTION	DEPARTMENT OF MINES – SOUTH AUSTRALIA	Scale: 1 INS. = 16 MILES
Compiled: J.P.	EYRE PENINSULA GROUNDWATER STUDY	Date: 2. OCT. 1970.
Drn. D.J.M. Ckd. L.V.W.	CONSOLIDATED REPORT No. 2	Drg. No. S7982
	LOCATION OF KNOWN BASINS	Dgh+ℓ+n

1M—2.70 A1810