

DEPARTMENT OF MINES
SOUTH AUSTRALIA

RB 59/121

Report on
FURTHER EXPLORATORY DRILLING
YANKALILLA RIVER PUMPED STORAGE SCHEME
E. T. S. A.

by
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GEOLOGICAL SURVEY

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PLANS

<u>Number</u>	<u>Title</u>	<u>Scale</u>
60-45	Plan and sections of proposed northern power station site.	1" to 100'
S 2361	Power auger drilling of overburden at proposed rock quarry.	1" to 100'

Rept. Bk. No. 517/121
G.S. No. 1687
U&F No. 52
D.M. 206/59

30th March, 1960.

**FURTHER EXPLORATORY DRILLING
YANKALILLA RIVER PUMPED STORAGE SCHEME**

E. T. S. A.

1. ABSTRACT

The report describes drilling carried out since October 1959. Borelogs are attached.

2. INTRODUCTION

The exploratory drilling which is described in this report has been completed since the submission of the Progress Report G.S. 1506, dated 15th October 1959. Borelogs are included in the Appendix.

3. NORTHERN POWER STATION SITE

At the request of the E.T.S.A. two holes (PD 12 and PD 13) were drilled at a proposed site for the power station on the northern side of the gorge. PD 12 failed to intersect bedrock at the desired level and PD 13 was abandoned at 11'. Subsequently two additional holes, PD 14 and PD 15, were drilled, each progressively closer to the scarp. PD 15 intersected bedrock at approximately 10'.

The accompanying plan shows the position of the holes and an interpretation of the subsurface geology. Cross sections along the line of holes and normal to the scarp through PD 7 are shown.

4. SOUTHERN TUNNEL ROUTE

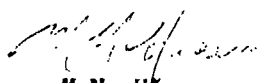
Two holes were requested by the consultants, Sir Alexander Gibb & Partners at the portals of the proposed twin tunnels on the southern route; the locations of these are shown on the E.T.S.A. drawing 3520/17.

PD 16 was drilled from RL 327 at the western position on 3520/17 to a depth of 48'. In a situation such as this, where the rock forming the talus is the same type as the underlying bedrock, the contact is difficult to pick in a borehole. Slight colour changes in the sludge indicate that the contact lies at about 15'. A shaft or open cut will be necessary to fix the exact position.

At the eastern offset position on 3520/17 bedrock outcrops at the surface.

5. MATERIALS TESTING

Drilling with the power auger to test the depth of overburden at the rock fill quarry site has now been stopped. Although the grid was not completely drilled, it is considered that no good purpose would be served by continuing the work. The average depth of the 146 holes completed was 10' although in some places hard rock was not encountered at the limit of the machine at 26'. The depths shown on the accompanying plan should be taken as a minimum as the machine in some places may have been stopped by residual boulders in the weathered zone.


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APPENDIX

PERCUSSION BORE LOG

Project: Yankalilla River Pumped Storage Scheme **Bore Serial No.:** PD 609/60
Section: Northern Tunnel Route **D.M.:** 206/59
Hundred: Yankalilla **Section:** 1001
Hole No.: PD 12 **Driller:** M. Sulyma
Date Drilling commenced: 8/10/59 **Date Drilling completed:** 15/10/59
R.L. of Collar: 132.0 **Bore Logged by:** M.N. Hiern

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LOG

0 - 2' Light brown fine sand
2' - 10' Light red brown fine sandy clay
10' - 11' Coarse grained subrounded light brown sand and some gravel.
11' - 20' Fine to coarse grained angular and sub-angular gravel and some light brown coarse grained sand - may be some broken boulders as well.
20' Boulder.
20' - 30' Brown and grey clay and a little fine gravel.
30' - 120' Light grey laminated clay. At 30' thin calcite filled joint dip sub parallel to core axis.
 Some thin interbedded calcareous bands in places.

END OF HOLE

<u>End of Bore at</u>		<u>Casing</u>		<u>Pulled</u>	
Water Cut	Water Level	Supply	Analysis		
Feet below surface	Feet below surface	g.p.h.	How tested	Grs./gall.	No.
27'	11'	Not tested			

PERCUSSION BORE LOG

Project: YANKALILLA RIVER PUMPED STORAGE Bore Serial No.: PD 610/60
SCHEME
Section: Northern Tunnel Route D.M.: 206/59
Hundred: Yankalilla Section: 1001
Hole No.: PD 13 Driller: M. Sulyma
Date Drilling commenced: 15/10/59 Date Drilling completed: 16/10/59
R.L. of Collar: 119.7 Bore Logged by: M.N. Hiern

LOG

0 - 11' Medium to dark brown fine sand and silt.

Hole abandoned and shifted further east.

<u>End of Bore at</u> 11'		<u>Casing</u>		<u>Pulled</u>	
<u>Water Cut</u>	<u>Water Level</u>	<u>Supply</u>	<u>Analysis</u>		
<u>Ft. below surf.</u>	<u>Ft. below surf.</u>	<u>g.p.h.</u>	<u>How tested</u>	<u>Grs./Gall.</u>	<u>No.</u>
-	-	-	-	-	-

PERCUSSION BORE LOG

Project: Yankalilla River Pumped Storage Scheme Bore Serial No.: PD 621/60
Section: Northern Tunnel Route D.M.: 206/59
Hundred: Yankalilla Section: 1002
Bore No.: PD 14 Driller: M. Sulyma
Date Drilling commenced: 19/10/59 Date Drilling completed: 28/10/59
R.L. of collar: 145.5 Bore logged by: M.N. Hiern

LOG

0 - 10' Light brown gravel, sand and silt and probably some boulders.
 10' - 40' Light brown and some interbedded grey laminated clay.
 40' - 155' Grey laminated clay with frequent calcareous zones. Some whitish sandy lenses after 130'.
 155' - 170' Light grey fine to medium grained sand, slightly clayey in part.
 170' - 171' Grey laminated clay with minor calcareous lenses.

END OF HOLE

<u>End of Bore at</u>	171'	<u>Casing</u>	Pulled
<u>Water Cut</u> Ft. below surface	<u>Water Level</u> Ft. below surface	<u>Supply</u> g.p.h. How tested	<u>Analysis</u> grs./gall. No.
155'	95'	Not tested	

PERCUSSION BORE LOG

Project: Yankalilla River Pumped Storage Scheme Bore Serial No.: PD 622/60
Section: Northern Tunnel Route D.M.: 206/59
Hundred: Yankalilla Section: 1002
Bore No.: PD 15 Driller: M. Sulyma
Date Drilling commenced: 28/10/59 Date Drilling completed: 30/10/59
R.L. of Collar: 151.1 Bore logged by: M.N. Hiern

LOG

0 - 10' Red brown sand silt and boulders
 10' - 33' Light grey clayey sludge with visible
 quartz grains - bedrock

END OF HOLE

End of Bore at 33' Casing Pulled

Water Cut Ft. below surface	Water Level Ft. below surface	Supply g.p.h.	How tested	Analysis grs./gall.	No.
22'	14'	Not tested			

PERCUSSION BORE LOG

Project: Yankalilla river Pumped Storage Scheme Bore Serial No.: PD 660/60
Section: Southern Tunnel Route - Reservoir Portal D.M.: 206/59
Hundred: Yankalilla Section: 1080
Bore No.: PD 16 Driller: M. Sulyma
Date Drilling commenced 30/11/59 Date Drilling completed 3/12/59
R.L. of collar: 327' Bore logged by: M.N. Hiern

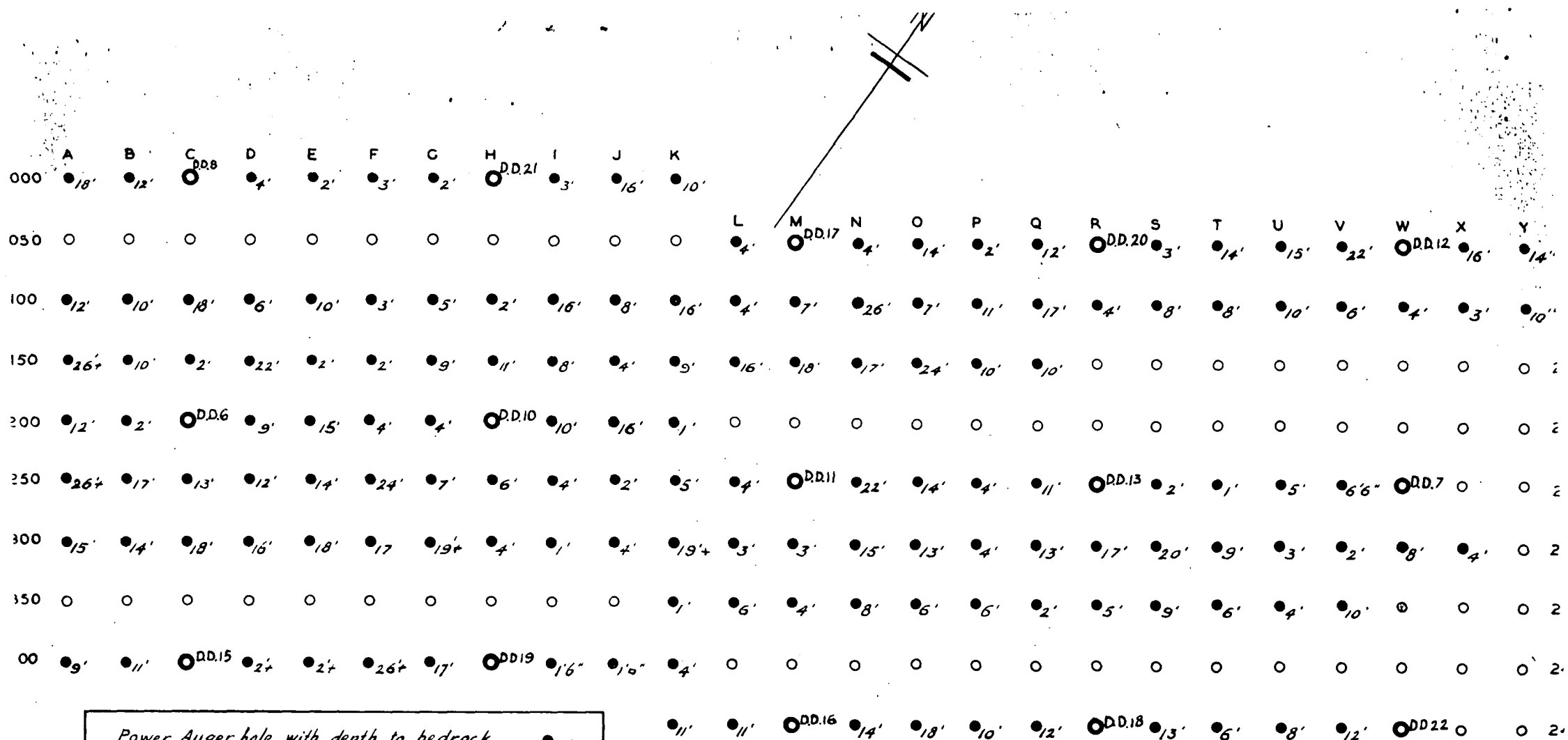
LOG

0 - 10' Red brown clay and fine rock fragments.
 10' - 15' Slight colour change - brownish clayey sludge with visible biotite.
 15' - 40' Similar sludge but colour lighter
 40' - 48' Core samples - slightly weathered quartz biotite gneiss.

END OF HOLE

Bedrock possibly between 10 & 15'.

<u>End of Bore at</u>	48'	<u>Casing</u>	Pulled
<u>Water Cut</u>	<u>Water Level</u>	<u>Supply</u>	<u>Analysis</u>
Ft. below surface	Ft. below surface	g.p.h. How tested	grs./gall. No.
Nil	-	-	-



To accompany report by M.N. Hiern.

S.A. DEPARTMENT OF MINES

Vide Topographic plan No 59-372		YANKALILLA PUMPED STORAGE SCHEME POWER AUGER DRILLING OF OVERBURDEN AT PROPOSED ROCK QUARRY		Approved	Passed	Drn. Tcd. J.E. Ckd. R.R. Exd.	Scale: 100ft to S 2361 Hc 7 Date: 5-2-19
Amendment	Exd.			Date	Director		

