

*Section*

Rept. Bk. No. 56/137  
G.S. No. 2645  
D.M. 324/63



ENG. GEOLOGY SECTION

**DEPARTMENT OF MINES  
SOUTH AUSTRALIA**

GEOLOGICAL SURVEY  
SOILS GEOLOGY SECTION

REPORT ON SITE INVESTIGATION

for

S.A. CO-OPERATIVE BULK HANDLING LTD.

RAILWAY YARDS - KULKAMI

by

J. B. Firman  
Geologist

20th June, 1963

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RAILWAY YARDS - KULKAMI

INTRODUCTION

This report sets out the results of test boring for silo site foundations at Kulkami, which is in County Chandes, Hundred of Cotton, and in the South-east quadrant of the Marama 1-Mile Sheet (823 in Zone 6 of the Australian National Grid).

A percussion bore hole was put down to 65 feet. Sealed tube samples were taken at depths of about 5, 10, 15, 20, 25, 30 and 35 feet.

A geological log is given for the test bore in Appendix 1. Locality maps, a geological plan, and a geological section showing penetration data are given on the accompanying bore data sheet.

STRATA PENETRATED AND FOUNDATION CHARACTERISTICS

The materials intersected in the bore are fill, a sandy clay soil "B" horizon, and sediments (The Parilla Sand).

Fill: The fill is a sand containing coal and kunkar rubble. The extent and nature of this material cannot be predicted.

Soil: The sandy clay is the soil "B" horizon produced by downwards eluviation of clay originally present near ground surface in the Parilla Sand.

The sandy clay is fairly strong and should occur throughout the site with a similar thickness.

Parilla Sand: The Parilla Sand is a fine-grained quartz sand containing varying amounts of clay. Textural variations are not sharp and colours - mainly light browns and greys - are similar.


Within the site the Parilla Sand should be encountered everywhere at the same depth.

If data for the interval 0 to 10 feet is disregarded, there is good correlation between blows/foot and "density" as shown in the geological log and between "density" and water condition. Because grain size and packing in the sand is much the same from point to point, the "density" variation is probably due mainly to differences in moisture content alone.

Changes in the amount of clay present are not reflected in the records of penetration, "density", or water condition. Perhaps the dominance of a sand texture and the presence of at least a small amount of clay in all samples produces the uniform resistance to penetration of materials with the same moisture condition.

#### GROUNDWATER

The foundation bore was dry. In Bore TA (Town 9) nearby, which was put down to 176 feet, the static level was 166 feet, the supply was in excess of 200 gallons/hour, and the water contained 154 grains/gallon.

  
J. B. Firman  
Geologist  
SOILS GEOLOGY SECTION

JEF:AGK  
20/6/63

**APPENDIX 1**

**GEOLOGICAL LOG**

Department of Mines,  
South Australia.

PERCUSSION DRILL LOG

Bore No.: 1

Project: Sile Site Investigation

Purpose: Foundation Testing

Location: Kulkami

Hundred: Cotton

Section: Railway Yard

Depth: 65 ft. R.L. Core Diameter: 4 ins. Commenced: 29/4/63 Completed: 1/5/63 Bore Serial No. Plant:

Bore Logged by: J.B. Firman Date: 5/6/63 Driller: A. Marrecchi Docket No.: 324/63

Depth (ft.)		Description	Sample Depth(ft.)		Penetration Blows/Ft.	Water Condition	Consistency or Density	Remarks
From	To		From	To				
0	1'	Pale brown fine sand fill with coal and kunkar rubble.	0	1	14	Damp	Loose	
1	3'	Light reddish brown and pale brown mottled very sandy clay.	1	2	18	Damp	Very Stiff	} Pocket Penetrometer > 4.5 tons/sq.ft.
			2	3	25	"	" "	
3	4'	Light brown and pale brown slightly clayey fine sand.	3	4	21	"	Dense	
			4	5				Scaled Tube
5'3"	8'9"	Light reddish brown and light grey clayey fine sand.	5'3"	6'6"	22	"	"	
			6'6"	7'9"	20	"	"	
			7'9"	8'9"	30	"	"	
			9	10				Scaled Tube
10	12'	Light brown and pale yellowish brown silty, clayey fine sand.	10	11	47	"	"	
			11	12	54	"	"	
12	13'	Light yellowish brown clayey fine sand	12	13	63	Damp	Dense	

Depth (ft.)		Description	Sample Depth(ft.)	Penetration	Water Condition	Consistency or Density	Remarks
From	To		From	To	Blows/Ft.		
13	32	Light brown and light yellowish brown slightly clayey fine sand, Clay increasing between 17 and 32 feet and colour changing to light yellow-brown and yellow. Scattered dark reddish brown mottles 17-18 ft. and 20-23 ft.	13	14	65	Damp	Dense
			14	15			Sealed Tube
			15	16	60	"	Moderate-ly Dense
			16	17	61	Slightly Damp	Dense
			17	18	63	" "	"
			18	19	61	" "	"
			19	20			Sealed Tube
			20	21	65	" "	"
			21	22	66	" "	"
			22	23	68	" "	"
			23	24	65	Damp	Moderate-ly Dense
			24	25			Missing
			25	26	64	"	" "
			26	27	68	"	" "
			27	28	70	"	" "
			28	29	72	"	" "
			29	30		"	" "
			30	31	67	"	" "
			31	32	69	"	" "
32	62	Light brownish yellow clayey fine sand.	32	33	66	Very Damp	Loose to Moderately Dense
			33	34	64	Slightly Damp	Dense
			34	35		" "	"
			35	36	60	" "	"
			36	37	58	" "	"
			37	38	60	" "	"

Depth (ft.)		Description	Sample Depth(ft.)	Penetration	Water Condition	Consistency or Density	Remarks
From	To		From	To	Blows/ft.		
32	62 (contd.)		38	39	58	Slightly Damp	Dense
			39	40	60	" "	"
			40	41	59	" "	"
			41	42	62	" "	"
			42	43	63	" "	"
			43	44	70	" "	"
			44	45	63	Moist	Loose
			45	46	60	"	Loose to Moderately Dense.
			46	47	60	"	Loose
			47	48	60	"	Loose to Moderately Dense.
			48	49	61	"	" " "
			49	50	62	"	" " "
			50	51	58	"	" " "
			51	52	58	"	Loose.
			52	53	54	"	"
			53	54	48	Moist	Loose.
			54	55	45	"	"
			55	56	46	"	"
			56	57	44	"	"
			57	58	42	"	"
			58	59	44	Slightly Moist	Loose to Moderately Dense.
			59	60	40	Moist	Loose.
			60	61	42	"	"
			61	62	42	Slightly Moist	Loose to Moderately Dense



Depth (ft.)		Description	Sample Depth (ft.)		Penetration	Water Condition	Consistency or Density	Remarks
From	To		From	To				
62	65	Light reddish brown and light brownish yellow clayey fine sand with some small flakes of white mica.	62	63	40	Moist	Loose to	
			63	64	43	"	Moderately	
							Dense.	
			64	65	42	Moist	Loose.	
			END.					