

THICK SAND OVER WET SANDY CLAY LOAM

General Description: *Thick bleached sand over a grey or brown mottled sandy clay loam to clay*

Landform: Lower slopes of undulating rises

Substrate: Tertiary clayey sand to sandy clay

Vegetation:



Type Site: Site No.: CH079

1:50,000 sheet:	6627-4 (Noarlunga)	Hundred:	Willunga
Annual rainfall:	575 mm	Sampling date:	30/05/95
Landform:	Lower slope (1%) of undulating rise		
Surface:	Soft with no stones		

Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Black soft loamy sand. Clear to:
10-35	Greyish brown soft sand. Diffuse to:
35-100	White and rusty brown mottled sand, with water seeping along contact with underlying layer. Abrupt to:
100-110	Grey, orange and yellow mottled clayey sand with weak coarse prismatic structure, saturated at time of sampling. Clear to:
110-135	Grey brown and orange mottled clayey sand with weak coarse prismatic structure, saturated at time of sampling. Clear to:
135-150	Grey and green mottled sandy clay loam with coarse blocky structure (buried soil), saturated at time of sampling.
150	Water table



Classification: Basic, Regolithic, Bleached-Orthic Tenosol; medium, non-gravelly, sandy / sandy, deep
OR Bleached, Tenosolic, Redoxic Hydrosol; medium, non-gravelly, sandy / sandy, deep

Summary of Properties

Drainage	The soil is poorly drained due to a water table at 150 cm, probably shallower during spring.
Fertility	The low clay content and leached nature of the soil indicate a low level of natural fertility. The nutrient retention capacity of the bleached sand (35-100 cm) is virtually nil. Phosphorus, sulphur and trace element levels are high, but potassium is low. All nutrients (except sulphur) are severely deficient in the bleached layer.
pH	Neutral at the surface, acidic with depth
Rooting depth	150 cm in pit, but there are few roots below 35 cm.
Barriers to root growth	
Physical:	The relatively shallow water table is a major barrier.
Chemical:	Moderate salinity in the upper metre, sufficient to cause a 10-25% reduction in grape yield and a 25-50% reduction in almond yield. Note however that the salt levels (including sulphate) in the pit are higher than in the bulked paddock sample. Boron and exchangeable sodium are below critical toxic levels.
Water holding capacity	Approximately 40 mm in root zone, of which about 15 mm is readily available.
Workability	Good
Erosion Potential	Soft sandy surface is prone to wind and water erosion if unprotected.

Laboratory Data

Depth cm	Particle size analysis				pH	pH	CO ₃	EC1:5	ECe	Org.C	Avail. P	Avail. K	SO ₄ -S	Boron	CEC	Exchangeable Cations				ESP
	Coarse sand	Fine sand	Silt	Clay	H ₂ O	CaCl ₂	%	dS/m	dS/m	%	mg/kg	mg/kg	mg/kg	mg/kg	cmol (+)/kg	cmol(+)/kg				
																Ca	Mg	Na	K	
Paddock	-	-	-	-	7.1	6.8	0	0.10	0.73	3.0	70	100	13	3.4	6.2	7.01	1.93	0.30	0.35	4.8
0-10	34	61	2	3	6.3	5.9	0	0.56	3.77	2.8	32	178	115	3.2	7.6	4.83	1.24	1.30	0.54	17.1
10-35	-	-	-	-	5.9	5.5	0	0.27	2.95	0.4	8	43	46	0.7	0.8	0.78	0.19	0.24	0.58	na
35-100	44	54	1	1	6.1	5.9	0	0.25	2.81	0.1	<4	8	34	0.4	0.3	0.40	0.17	0.19	0.09	na
100-110	-	-	-	-	6.7	6.5	0	0.20	1.97	0.2	<4	47	27	0.5	4.1	1.94	1.79	0.48	0.28	11.7
110-135	-	-	-	-	6.2	5.6	0	0.15	1.36	0.2	<4	248	28	0.5	6.8	2.10	3.27	0.73	0.42	10.7
135-150	30	45	3	22	6.3	5.6	0	0.13	1.06	0.1	<4	144	26	0.5	10.3	2.61	4.62	1.07	0.49	10.4

Note: Paddock sample bulked from 20 cores (0-10 cm) taken from around the pit.

DTPA trace element analyses from paddock sample (mg/kg): Cu = 0.67, Zn = 3.78, Mn = 3.16

CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.