

## 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:**



<b>Type Site:</b>	Site No.:	CH079	1:50,000 mapsheet:	6627-4 (Noarlunga)
	Hundred:	Willunga	Easting:	278300
	Section:	30	Northing:	6101700
	Sampling date:	30/05/95	Annual rainfall:	600 mm average

Lower slope (1%) of undulating rise adjacent to worked up land for new plantings.

### Soil Description:

Depth (cm)	Description
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	Watertable



**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.
- Waterholding capacity:** Approximately 40 mm in rootzone, 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 H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> mg/kg	Boron mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
	Coarse sand	Fine sand	Silt	Clay												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.

**Further information:** [DEWNR Soil and Land Program](#)

