

SAND OVER ACIDIC CLAY

General Description: *Thick greyish sand with a bleached A2 horizon, overlying a yellow and red sandy clay loam to light clay subsoil forming in soft sandstone*

Landform: Slopes of undulating rises and low hills

Substrate: Tertiary sandstone

Vegetation: Pink gum scrub

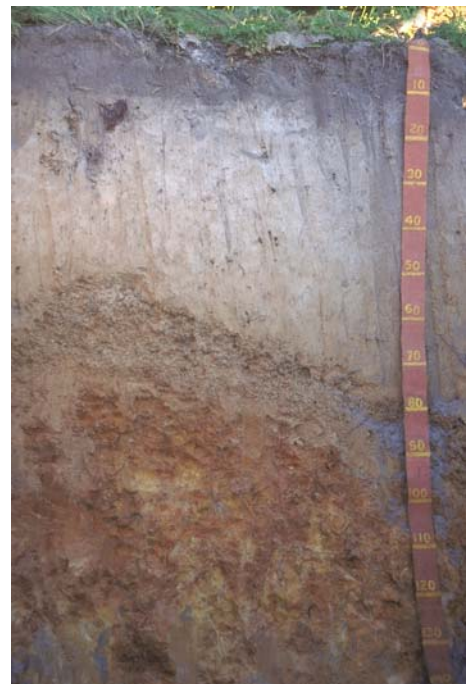


Type Site: Site No.: CH082

1:50,000 sheet:	6627-4 (Noarlunga)	Hundred:	Willunga
Annual rainfall:	600 mm	Sampling date:	30/05/95
Landform:	Upper slope of a low hill, 8% slope		
Surface:	Loose with no stones		

Soil Description:

Depth (cm)	Description
0-10	Dark grey loose sand. Clear to:
10-50	White loose sand. Gradual to:
50-75	Very pale brown loose sand. Clear to:
75-90	Very pale brown loose sand with 20-50% ironstone, sandstone and quartz gravel. Abrupt to:
90-120	Orange and brown sandy light clay with blocky structure. Gradual to:
120-150	Yellow and brown sandy light clay forming in soft sandstone.



Classification: Bleached-Ferric, Mesotrophic, Red Chromosol; very thick, non-gravelly, sandy/clayey, deep

Summary of Properties

Drainage	The soil is well drained and is not likely to remain wet for more than a few hours. However, seepage can occur in the gravel layer on the top of the subsoil clay, creating a subsoil waterlogging problem.
Fertility	Natural fertility is low due to the low clay content. Only the organic matter provides a nutrient store in the upper 90 cm. Phosphorus levels are high (note the leaching below the surface layer). Potassium is deficient, but calcium, magnesium, sulphur and trace elements are adequate.
pH	Slightly acidic at the surface, highly acidic with depth.
Rooting depth	150 cm in pit, but few roots below 120 cm.
Barriers to root growth	
Physical:	There are no significant barriers, although the subsoil clay if not fully wet up may impede root growth because of its high strength. Water repellence may affect at least near surface root growth because of uneven wetting.
Chemical:	Low nutrient retention capacity is the main barrier. There are no toxic compounds in the soil.
Water holding capacity	Approximately 100 mm in the root zone (i.e. 120 cm), of which about 60 mm is readily available.
Workability	Good.
Erosion Potential	Moderate wind erosion potential if left bare, due to the light sandy surface.

Laboratory Data

Depth cm	Particle size analysis				pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
	Coarse sand	Fine sand	Silt	Clay												Ca	Mg	Na	K	
Row	-	-	-	-	6.3	6.2	0	0.09	0.61	3.0	80	81	14	1.0	7.0	6.94	1.64	0.11	0.19	1.5
0-10	13	83	1	3	6.5	6.4	0	0.07	0.47	2.7	77	65	14	1.0	6.4	8.01	1.62	0.11	0.17	1.8
10-50	-	-	-	-	6.5	6.4	0	0.02	0.21	0.2	20	7	10	0.3	0.4	0.64	0.19	0.11	0.06	na
50-75	-	-	-	-	6.5	6.3	0	0.02	0.19	0.1	37	38	8	0.3	0.4	0.64	0.20	0.10	0.20	na
75-90	-	-	-	-	6.3	6.0	0	0.03	0.24	0.3	26	60	9	0.4	1.3	0.91	0.38	0.12	0.14	na
90-120	3	51	1	45	5.3	5.2	0	0.08	0.52	0.3	<4	165	47	1.4	6.7	2.37	2.87	0.30	0.44	4.5
120-150	-	-	-	-	4.9	4.4	0	0.80	0.38	0.2	<4	80	45	1.1	5.5	1.12	2.37	0.35	0.19	6.3

Note: Row sample bulked from 20 cores (0-10 cm) taken from the tree/vine lines around the pit.

DTPA trace element analyses from row sample (mg/kg): Cu = 5.6, Zn = 11.3, Mn = 7.4.

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.