

THICK LOAMY SAND OVER SANDY CLAY LOAM

General Description: *Grey moderately calcareous sand with a bleached subsurface layer, over a yellow brown sandy clay loam, overlying a buried sand over sandy clay profile*

Landform: Flat corridor plains between ancient beach ridges.

Substrate: Lagoonal clays and sands of the Padthaway Formation.

Vegetation: -

Type Site: Site No.: SE134 1:50,000 mapsheet: 6924-2 (Lucindale)
 Hundred: Woolumbool Easting: 444110
 Section: 73 Northing: 5931730
 Sampling date: 14/02/06 Annual rainfall: 570 mm average
 Level plain. Soft surface with no stones

Soil Description:

Depth (cm)	Description
0-5	Greyish brown loose moderately calcareous single grain loamy sand. Clear to:
5-15	Dark grey soft calcareous single grain loamy sand. Clear to:
15-26	Light grey soft slightly calcareous single grain sand. Clear to:
26-42	Light grey soft highly calcareous single grain loamy sand. Abrupt to:
42-45	Greyish brown friable very highly calcareous massive coarse sandy clay loam with 2-10% silcrete and calcrete fragments. Sharp to:
45-55	Yellowish brown friable highly calcareous massive coarse sandy loam with 2-10% soft and nodular ironstone segregations. Clear to:
55-69	Light yellowish brown soft single grain sand. Sharp to:
69-75	Yellowish brown friable massive coarse sandy loam. Sharp to:
75-97	Light grey and yellowish brown mottled firm coarse sandy clay loam with strong very coarse columnar (>100 cm) structure. Diffuse to:
97-150	Light grey and brownish yellow mottled firm massive coarse sandy light clay.



Classification: Ceteric, Regolithic, Hypocalcic Calcarosol; thick, non-gravelly, sandy / clay loamy, shallow



Summary of Properties

Drainage: Poorly drained prior to installation of Upper South East drainage system. This was due to seasonal inundation and shallow seasonal watertable. Post drain construction, profile is well drained, with saturation unlikely for more than a day or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. This is due to low clay and organic matter contents. Test data indicate deficiencies of phosphorus, potassium, sulphur and zinc. High surface pH and free carbonate further reduce availability of many nutrient elements.

pH: Alkaline at the surface, strongly alkaline in the subsoil.

Rooting depth: There are some roots to 150 cm, but most growth is in the upper 26 cm.

Barriers to root growth:

Physical: There is potential for cementation in the 42-45 cm, and 45-55 cm layers. This will significantly restrict root growth.

Chemical: Low nutrient availability is the most significant limitation. High pH and sodicity are less restrictive in sandier soils than in more clayey types.

Waterholding capacity: Approximately 45 mm in the rootzone

Seedling emergence: Satisfactory.

Workability: Good. Sandy surface is easily worked over a range of moisture conditions.

Erosion Potential:

Water: Low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	React Fe mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-5	8.2	7.5	-	0.07	-	15	0.71	4	49	2.6	1.2	183	0.28	7	1.69	0.18	6.8	5.37	1.31	0.05 6	0.07	0.7
5-15	8.4	7.5	-	0.04	-	5	0.28	2	30	<1	0.7	77	0.21	2	1.00	0.03	4.1	3.31	0.67	0.03	0.05	0.7
15-26	8.2	7.3	-	0.04	-	5	0.06	2	19	<1	0.4	47	0.13	2	0.26	0.02	1.5	1.15	0.26	0.04	0.05	2.7
26-42	9.4	8.3	-	0.05	-	10	<0.05	2	21	<1	0.4	81	0.19	4	0.28	0.02	6.6	5.80	0.74	0.06	0.05	0.9
42-45	8.6	7.7	-	0.08	-	10	0.07	2	87	<1	0.9	267	0.14	6	0.14	0.01	8.9	7.25	1.51	0.05	0.07	0.6
45-55	9.3	8.3	-	0.14	-	15	0.18	2	237	<1	3.5	995	0.21	4	0.12	0.02	8.7	6.21	2.05	0.13	0.27	1.5
55-69	9.4	8.4	-	0.06	-	12	<0.05	2	26	<1	0.5	148	0.21	2	0.1	0.08	1.3	1.04	0.15	0.06	0.06	4.5
69-75	9.4	8.1	-	0.07	-	31	0.07	2	128	<1	2.0	589	0.18	3	0.07	0.07	1.6	0.58	0.81	0.11	0.13	7.0
75-97	9.0	7.8	-	0.11	-	49	<0.05	2	243	1.4	4.9	288	0.18	2	0.04	0.11	0.7	0.26	0.17	0.22	0.08	30.1
97-150	9.3	8.1	-	0.17	-	137	<0.05	2	258	26.2	4.5	509	0.07	2	0.02	0.07	0.9	0.27	0.23	0.36	0.09	37.7

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

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

