

DEEP SILICEOUS SAND

General Description: *Very thick sand with a bleached subsurface layer, grading to a stronger coloured and slightly more clayey subsoil*

Landform: Undulating dunefield.

Substrate: Calcreted calcarenite of the Bridgewater Formation.

Vegetation: Eucalyptus leucoxylon woodland.



Type Site:	Site No.:	SE027	1:50,000 mapsheet:	6924-2 (Lucindale)
	Hundred:	Joyce	Easting:	444640
	Section:		Northing:	5908460
	Sampling date:	15/06/1994	Annual rainfall:	595 mm average

Midslope of sand dune, 5% slope. Soft surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Black soft massive loamy fine sand. Gradual to:
10-50	Bleached (with tongues of light yellowish brown) loose single grain fine sand. Sharp but very uneven to:
50-70	Light yellowish brown loose single grain fine sand. Gradual to:
70-110	Light yellowish brown loose single grain fine sand with minor clayey lamellae. Sharp to:
110-130	Strong brown soft massive clayey fine sand with minor ironstone concretions. Sharp to:
130-160	Calcrete.



Classification: Basic, Petrocalcic, Bleached-Orthic Tenosol; medium, non-gravelly, sandy / sandy, deep



Summary of Properties

- Drainage:** Rapidly drained. The soil never remains wet for more than a few hours.
- Fertility:** Inherent fertility is very low, as indicated by the exchangeable cation data. Most surface soil nutrient retention capacity is attributable to organic matter, levels of which are very high. Concentrations of tested elements are relatively high, but fall substantially in subsurface layers. Regular applications of nitrogen, phosphorus and sulphur are required, whilst deficiencies of trace elements and possibly magnesium can be expected. Note depth of phosphate leaching in sandy soil – this presents a groundwater pollution hazard.
- pH:** Slightly acidic at the surface, slightly alkaline with depth.
- Rooting depth:** 130 cm in pit, but few roots below 10 cm.
- Barriers to root growth:**
- Physical:** There are no physical barriers above the calcrete, but there is little root growth at that depth.
- Chemical:** There are no toxic barriers. Low nutrient status and retention capacity are the main restrictions on root growth.
- Waterholding capacity:** Approximately 85 mm in the potential rootzone.
- Seedling emergence:** Fair to satisfactory, depending on the degree of water repellence.
- Workability:** Soft surface is easily worked.
- Erosion Potential:**
- Water:** Low.
- Wind:** Moderately high.

Laboratory Data

Depth cm	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 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.3	5.4	0	0.10	0.66	4.0	19	211	6.6	4.2	-	-	-	-	11.0	9.25	1.33	0.10	0.61	na
0-10	6.6	6.0	0	0.11	0.88	2.5	32	217	5.8	3.1	-	-	-	-	7.1	5.03	1.05	0.05	0.41	na
10-50	6.2	5.5	0	0.11	0.89	0.4	35	95	2.6	1.0	-	-	-	-	1.9	1.34	0.38	0.02	0.24	na
50-70	7.1	6.5	0	0.06	0.36	0.2	17	74	1.4	0.6	-	-	-	-	1.3	0.93	0.33	0.04	0.21	na
70-110	7.2	6.7	<0.1	0.06	0.30	0.1	13	93	1.7	0.5	-	-	-	-	1.0	0.42	0.20	0.02	0.18	na
110-130	7.6	6.9	<0.1	0.12	0.69	0.2	4	580	5.6	1.1	-	-	-	-	4.6	2.14	0.68	0.17	1.53	na

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

