THICK SAND OVER BROWN CLAY

General Description: Thick sand to loamy sand with a bleached subsurface layer, over a

brown coarsely structured clay

Landform: Very gently undulating

dune-swale systems

Substrate: Tertiary age sandy clay to

clayey sand

Eucalyptus camaldulensis Vegetation:

woodland



Type Site: Site No.: SE157B 1:50,000 mapsheet: 7024-4 (Keppoch)

Hundred: Beamma Easting: 473840 5944950 Section: 99 Northing:

09/11/2007 Annual rainfall: Sampling date: 540 mm average

Very gently undulating swale. Soft surface with no stones. Irrigated lucerne.

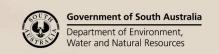
Soil Description:

Depth (cm)	Description
0-22	Very dark greyish brown soft single grain loamy sand. Clear to:
22-65	Light brownish grey soft single grain sand with slightly clayey lamellae. Gradual to:
65-85	Light yellowish brown (bleached when dry) soft single grain sand with slightly clayey lamellae. Sharp to:
85-115	Brownish yellow, yellowish red and pale yellow firm coarse sandy light clay with weak very coarse columnar structure. Diffuse to:
115-140	Brownish yellow, and light yellowish brown firm coarse sandy light clay with weak very coarse prismatic structure. Gradual to:
140-160	Brownish yellow, yellowish red and pale yellow friable clay loam, coarse sandy, with weak very coarse prismatic structure.



Classification: Eutrophic, Mottled-Subnatric, Yellow Sodosol; very thick, non-gravelly, sandy / clayey, very

deep





Summary of Properties

Drainage: Moderately well to imperfectly drained. Water may perch on top of the subsoil clay for a

week or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. This is due to the

low clay and relatively low organic matter contents of the surface layers. The bleached subsurface sand has negligible nutrient retention capacity. Laboratory data indicate that levels of all tested nutrients are satisfactory, although potassium, and trace elements are

marginally low.

pH: Slightly alkaline at the surface (irrigation water effect), acidic below.

Rooting depth: 160 cm in sampling pit, but few roots below 115 cm.

Barriers to root growth:

Physical: The subsoil clay layer imposes a moderate restriction on root growth, mainly by

confining many roots to the faces of coarse aggregates.

Chemical: There are no apparent chemical constraints (apart from low nutrient retention capacity),

but note elevated salinity, chloride and sodicity, compared with non irrigated site

SE157A.

Waterholding capacity: (Estimates for potential rootzone of irrigated crops)

Total available: 115 mm Readily available: 45 mm

Seedling emergence: Satisfactory to fair, depending on degree of water repellence.

Workability: Sandy surface soils are easily worked.

Erosion Potential:

Water: Low.

Wind: Moderate.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	EC1:5 dS/m		Cl mg/kg	%	NH ₄	P	K	mg/kg	Fe	mg/kg	Ext Al mg/kg	Trace Elements mg/kg (EDTA)				Sum cations	Exchangeable Cations cmol(+)/kg				Est. ESP
							mg/kg	mg/kg	mg/kg		mg/kg			Cu	Fe	Mn	Zn	cmol (+)/kg	Ca	Mg	Na	K	
0-22	7.5	7.0	0.09	0.91	29	1.08	18	36	122	8.5	274	1.0	0	1.27	102	10.6	1.91	5.7	3.82	1.37	0.25	0.28	4.4
22-65	6.3	5.3	0.08	0.86	70	0.28	-	4	25	8.4	150	-	0.07	1	-	-	-	0.8	0.38	0.15	0.22	0.05	na
65-85	5.7	4.8	0.03	0.68	43	0.12	-	2	27	7.3	299	-	0	1	1	-	-	0.6	0.26	0.15	0.13	0.04	na
85-115	5.7	4.7	0.14	2.33	191	0.26	-	2	120	49.8	472	-	0.13	-	-	-	-	6.0	2.28	2.51	0.87	0.35	14.5
115-140	4.9	4.4	0.30	2.79	334	0.14	-	2	82	40.2	301	-	0.20	-	-	-	-	6.1	1.61	3.33	0.91	0.24	14.9
140-160	5.2	4.6	0.16	1.72	290	0.11	-	2	74	23.5	305	ı	0.18	-	ı	-	-	4.2	0.99	2.51	0.54	0.19	12.8

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



