

SANDY LOAM OVER POORLY STRUCTURED DARK CLAY

General Description: *Greyish sandy loam surface soil, paler coloured with depth, overlying a dark coloured, sometimes mottled clayey subsoil which is calcareous with depth*

Landform: Alluvial flats and terraces

Substrate Alluvial sandy clays to clays

Vegetation: Red gum woodland



Type Site:	Site No.:	CU016	1:50,000 mapsheet:	6531-1 (Laura)
	Hundred:	Booyoolie	Easting:	247300
	Section:	453	Northing:	6326750
	Sampling date:	31/08/1992	Annual rainfall:	470 mm average

Alluvial flat of the Rocky River, 0% slope. Hard setting surface with no stone.

Soil Description:

Depth (cm)	Description
0-10	Dark brown weakly granular sandy loam. Clear to:
10-30	Pale grey massive light sandy clay loam. Clear to:
30-85	Very dark grey medium clay with strong blocky structure. Gradual to:
85-130	Very dark grey medium clay with strong prismatic structure and minor soft carbonate segregations and gypsum crystals.



Classification: Hypocalcic, Subnatric, Black Sodosol; thick, non-gravelly, loamy / clayey, deep



Summary of Properties

- Drainage:** Moderately well to imperfect, due to low permeability subsoil clay (sodic) and seasonally high ground watertable. Soil may remain wet for several weeks.
- Fertility:** Natural fertility is moderate to high, as indicated by the high CEC of the subsoil. The surface soil has low clay and organic matter content (resulting in a low CEC), and therefore has a low nutrient retention capacity and has low nitrogen reserves.
- pH:** Acidic at the surface grading to slightly alkaline in the subsoil.
- Rooting depth:** 130 cm in the pit, but there is little growth below 85 cm.
- Barriers to root growth:**
- Physical:** The strength of the subsoil clay, caused by its high exchangeable sodium, may restrict root proliferation, as will the hard dense surface soil.
 - Chemical:** Moderate salinity and high sodicity below 85 cm may affect root growth.
- Waterholding capacity:** 155 mm in rootzone (high), but a third of this may be unavailable to roots due to their sparse distribution.
- Seedling emergence:** Good to fair, as surface soil may seal over due to poor structure caused by low organic matter content and sodic clay.
- Workability:** Fair due to narrow moisture range for effective working due to poor structure.
- Erosion Potential:**
- Water:** Low due to flatness of land.
 - Wind:** Low.

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	6.0	5.5	0	0.07	0.32	1.1	47	387	-	1.4	0.4	116	12	1.3	5.6	3.6	0.6	0.23	0.59	4.1
0-10	5.8	5.3	0	0.06	0.21	1.1	50	640	-	0.9	0.6	137	13	1.4	4.9	3.2	0.5	0.21	0.71	4.3
10-30	6.2	5.8	0	0.05	0.20	0.4	21	913	-	0.7	0.9	57	8.5	0.2	5.8	4.2	0.9	0.19	0.32	3.3
30-85	7.7	6.9	0	0.12	0.50	0.7	<5	348	-	3.3	1.7	34	11	0.1	26.7	11.9	8.9	3.71	0.72	14
85-130	7.9	7.8	0.4	1.9	6.02	0.7	22	424	-	6.6	1.3	18	2.0	0.2	33.1	15.1	10.9	7.17	1.00	22

- Note:** Paddock sample bulked from 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](#)

