

THICK LOAMY SAND OVER CLAY

General Description: *Very thick dense loamy sand to sandy loam with a conspicuously bleached A2 layer over a brown coarsely structured heavy clay*

Landform: Level plain.

Substrate: Tertiary clay.

Vegetation:



Type Site:	Site No.:	SE011	1:50,000 mapsheet:	7022-1 (Nangwarry)
	Hundred:	Mingbool	Easting:	495200
	Section:	398	Northing:	5832000
	Sampling date:	10/02/1993	Annual rainfall:	725 mm average

Plain with 0% slope. Firm surface with no stones.

Soil Description:

Depth (cm)	Description
0-12	Dark brown friable loamy fine sand with single grain structure. Diffuse to:
12-40	Brown friable fine sand with single grain structure. Diffuse to:
40-68	Brownish yellow (bleached dry) fine sand with single grain structure and minor ironstone concretions. Diffuse to:
68-75	Light grey soft fine sand with single grain structure and over 50% ironstone concretions (6-20 mm). Sharp to:
75-115	Brown, light yellowish brown and reddish brown mottled heavy clay with coarse prismatic structure.
115-145	Brown, light yellowish brown and reddish brown mottled heavy clay with coarse prismatic structure.



Classification: Bleached-Vertic, Eutrophic, Brown Chromosol; very thick, non-gravelly, sandy/clayey, deep



Summary of Properties

- Drainage:** Imperfectly drained. Water perches on the heavy clay subsoil, saturating part of the profile for several weeks at a time following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data. Low clay content in the topsoil restricts nutrient retention capacity which is largely reliant on organic matter. There is large capacity in the subsoil. There are no apparent nutrient deficiencies at the sampling site.
- pH:** Strongly acidic at the surface, slightly acidic to neutral in the subsoil.
- Rooting depth:** Some roots to 145 cm in pit, but most are confined to the upper 12 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured heavy clay subsoil restricts root growth to the surfaces of aggregates. The bleached subsurface soil can set hard and dense at low water content, limiting root growth.
 - Chemical:** There are no limitations other than low nutrient availability / storage capacity in the bleached A2 layer.
- Waterholding capacity:** Approximately 85 mm in the rootzone.
- Seedling emergence:** Fair to good, depending to the degree of compaction of the surface soil.
- Workability:** Firm surface is easily worked.
- 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	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	5.1	4.5	0	0.09	0.64	1.6	40	130	-	0.5	0.5	270	5.7	1.1	10.1	2.96	0.44	0.06	0.31	0.6
0-12	4.9	4.5	0	0.13	1.51	1.5	42	170	-	0.5	0.3	170	6.6	0.8	8.0	2.37	0.30	0.03	0.31	0.4
12-40	4.7	4.1	0	0.03	0.28	0.33	29	63	-	0.3	0.2	140	0.7	0.1	3.8	0.58	0.11	0.00	0.09	na
40-68	4.7	4.2	0	0.02	0.09	0.09	9.8	39	-	0.2	0.1	70	0.6	0.1	2.6	0.19	0.04	0.02	0.05	na
68-75	5.1	4.3	0	0.02	0.06	0.07	6.7	39	-	0.4	0.2	35	3.6	0.2	3.5	0.69	0.23	0.04	0.08	na
75-115	6.5	6.0	0	0.05	0.11	0.11	<2.0	260	-	2.5	0.1	7	1.1	<0.1	20.2	8.59	5.39	0.36	0.79	1.8
115-145	7.0	6.3	0	0.05	0.13	0.06	<2.0	120	-	3.0	0.2	4	0.1	0.1	20.4	8.31	5.75	0.67	0.34	3.3

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](#)

