

THICK SAND OVER CLAY

(Heggaton soil)

General Description: *Thick bleached sand over a sandy clay to clay subsoil, often calcareous with depth*

Landform: Gently undulating plain with sandhills.

Substrate: Tertiary clay.

Vegetation: Mallee - broombush (Euc. incrassata / Mel. uncinata).

Type Site:	Site No.:	EE136	1:50,000 mapsheet:	6131-3 (Darke)
	Hundred:	Darke	Easting:	600870
	Section:	26	Northing:	6303110
	Sampling date:	16/08/1995	Annual rainfall:	360 mm average

Upper slope on rise between sandhills, 6% slope. Loose surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown soft loamy sand. Clear to:
10-38	Light brown soft sand. Abrupt to:
38-40	Light grey (bleached) soft sand. Abrupt to:
40-70	Light yellowish brown friable highly calcareous sandy clay with weak fine angular blocky structure and 10-20% fine carbonate segregations. Diffuse to:
70-150	Very pale brown friable highly calcareous medium clay with 20-50% carbonate concretions (60-200 mm).



Classification: Supracalcic, Subnatric, Yellow Sodosol; thick, non-gravelly, sandy / clayey, deep



Summary of Properties

Drainage:	Moderately well drained. Water may perch on the clayey subsoil for up to a week following heavy or prolonged rainfall.
Fertility:	Inherent fertility is low, as indicated by the exchangeable cation data. Low clay and organic matter contents at the surface restrict the capacity of the topsoil to retain nutrients. Regular applications of phosphorus are needed - concentrations at the sampling site are adequate. Zinc, copper and manganese deficiencies may also occur - levels are marginal. Nitrogen concentrations depend on legume component of pastures and cropping history.
pH:	Neutral at the surface, strongly alkaline with depth.
Rooting depth:	120 cm in pit.
Barriers to root growth:	
Physical:	The clayey subsoil reduces root densities to some extent.
Chemical:	High pH from 70 cm causes root growth to diminish.
Waterholding capacity:	Approximately 120 mm in the rootzone.
Seedling emergence:	Satisfactory except in seasons when water repellence is a problem.
Workability:	Loose surface is easily worked.
Erosion Potential:	
Water:	Moderate.
Wind:	Moderate.

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	
0-10	7.2	7.0	<1	0.06	0.39	0.6	25	110	7	0.5	0.2	15	2.0	0.6	2.9	2.47	0.57	0.10	0.11	3.4
10-38	8.1	7.3	<1	0.04	0.29	<0.1	4	115	4	0.4	0.4	4	0.3	0.3	1.9	1.66	0.40	0.10	0.10	5.3
38-40	8.4	7.5	<1	0.05	0.43	<0.1	<4	79	6	0.4	0.6	3	0.4	0.2	1.4	1.02	0.36	0.13	0.06	9.3
40-70	9.2	8.4	7	0.18	0.64	0.1	<4	377	8	4.6	0.5	8	0.7	0.3	8.8	5.81	4.30	0.56	0.88	6.4
70-150	9.7	8.6	13	0.33	1.09	0.2	<4	557	9	9.5	0.5	6	0.5	0.3	7.7	2.87	4.93	1.73	1.08	6.1

Note: 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](#)

