

SANDY LOAM OVER POORLY STRUCTURED RED CLAY

General Description: *Sandy loam to loamy sand over a coarsely structured dispersive red sandy clay grading to a red or brown clay with ironstone gravel, calcareous with depth*

Landform: Low rises on very gently undulating plains and dunefields

Substrate: Tertiary clayey sand.

Vegetation: Mallee



Type Site:	Site No.:	MM003	1:50,000 mapsheet:	6928-3 (Halidon)
	Hundred:	McPherson	Easting:	430950
	Section:	38	Northing:	6138050
	Sampling date:	04/09/1991	Annual rainfall:	305 mm average

Low rise with a firm surface and 10-20% ironstone fragments.

Soil Description:

Depth (cm)	Description
0-8	Dark reddish brown firm sandy loam. Abrupt to:
8-11	Reddish brown firm sandy loam. Sharp to:
11-23	Red hard sandy clay with coarse columnar structure. Clear to:
23-30	Red and orange medium clay with weak prismatic structure and 20-50% ironstone gravel. Gradual to:
30-50	Red very highly calcareous medium clay with weak subangular blocky structure and 10-20% ironstone gravel. Gradual to:
50-80	Orange and pale brown massive sandy clay with minor calcareous segregations. Diffuse to:
80-120	Brown massive sandy clay loam. Diffuse to:
120-200	Brown massive clayey sand.



Classification: Calcic, Mesonatric, Red Sodosol; medium, gravelly, loamy / clayey, deep



Summary of Properties

- Drainage:** Moderately well drained. Water will perch on the subsoil clay, but the profile rarely remains saturated for more than a few days.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data. Nutrient retention capacity of surface soil is poor, due to low clay and organic matter levels. At the sampling site, phosphorus, copper and zinc are deficient.
- pH:** Neutral at surface, strongly alkaline in subsoil, and strongly acidic in sandy substrate.
- Rooting depth:** 50 cm in the pit.
- Barriers to root growth:**
- Physical:** Coarsely structured dispersive clay subsoil prevents uniform root distribution.
 - Chemical:** High pH and sodicity from 30 cm affect root growth.
- Waterholding capacity:** Approximately 60 mm in rootzone.
- Seedling emergence:** Good.
- Workability:** Good.
- 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	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	6.8	5.9	<1	0.08	0.73	0.6	8	190	0.50	0.10	10	4.8	0.20	3.1	2.39	1.12	0.25	0.38	8.1
0-8	6.8	5.8	<1	0.05	0.35	0.5	12	180	0.50	0.10	15	7.6	0.42	3.5	2.65	1.11	0.22	0.35	6.3
8-11	7.0	5.8	<1	0.04	0.23	0.4	7	140	0.51	0.10	11	7.5	0.25	3.5	2.14	1.25	0.34	0.26	9.7
11-23	8.5	7.1	<1	0.10	0.04	0.3	3	220	2.5	0.26	10	2.4	0.13	14.7	4.57	6.68	2.24	0.62	15.2
23-30	9.4	8.3	2	0.44	1.73	0.3	4	240	9.0	0.41	13	1.1	0.22	22.4	6.75	10.98	4.92	0.70	21.9
30-50	9.6	8.6	7	0.81	5.06	0.2	3	190	14	0.52	7.3	1.2	0.14	15.5	5.73	8.24	4.62	0.54	29.8
50-80	9.5	8.4	2	0.83	6.73	<0.1	<2	160	11	0.43	5.2	0.53	0.17	10.6	3.46	5.76	3.27	0.36	30.8
80-120	5.7	4.8	<1	0.54	4.93	<0.1	<2	130	2.9	0.41	12	0.06	0.17	8.8	1.19	4.35	2.48	0.28	28.2
120-160	4.8	4.1	1	0.69	6.91	<0.1	<2	140	2.5	0.30	14	0.06	0.57	7.7	0.83	3.71	2.12	0.26	27.5
160-200	4.5	3.9	<1	0.74	6.71	0.1	<2	130	2.5	0.36	26	0.06	0.34	8.1	0.90	3.75	2.38	0.29	29.4

- 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](#)

