

## GRADATIONAL BROWN SANDY CLAY LOAM

**General Description:** *Sandy loam to light sandy clay loam grading to a coarsely structured brown or red more clayey subsoil, highly calcareous from shallow depth*

**Landform:** Very gently undulating plain.

**Substrate:** Very highly calcareous sandy clay loam to light clay with variable rubble (Woorinen Formation).

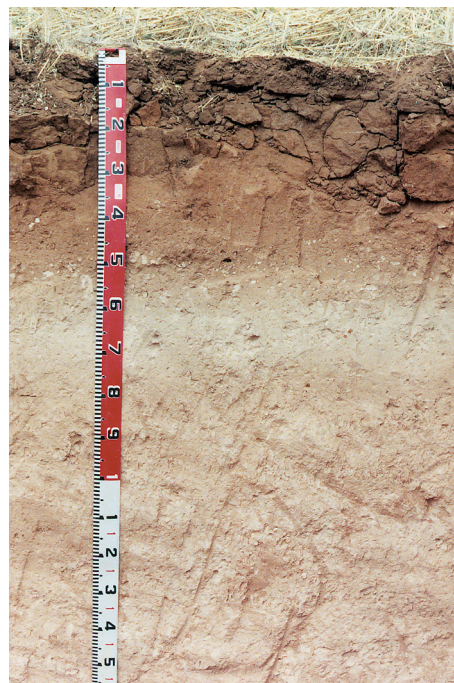
**Vegetation:** Mallee.

<b>Type Site:</b>	Site No.:	EC056	1:50,000 mapsheet:	5932-3 (Minnipa)
	Hundred:	Minnipa	Easting:	515400
	Section:	26	Northing:	6364750
	Sampling date:	17/2/1992	Annual rainfall:	330 mm average

Very gentle slope. Firm surface with no stones.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark reddish brown friable light sandy clay loam with weak granular structure. Abrupt to:
10-25	Dark reddish brown very hard fine sandy clay loam with coarse columnar structure. Clear to:
25-35	Dark brown firm highly calcareous fine sandy clay loam with coarse columnar structure. Clear to:
35-45	Brown friable massive very highly calcareous sandy clay loam with 20-50% carbonate nodules. Clear to:
45-60	Yellowish brown firm massive very highly calcareous clay loam with more than 50% fine carbonate segregations. Gradual to:
60-80	Yellowish brown firm massive very highly calcareous clay loam with 2-10% carbonate nodules. Diffuse to:
80-180	As above, with light clay texture.



**Classification:** Sodic, Supracalcic, Brown Kandosol; medium, non-gravelly, loamy / clay loamy, deep



## Summary of Properties

- Drainage:** Moderately well drained. Soil never remains wet for more than a week.
- Fertility:** Inherent fertility is moderate as indicated by the exchangeable cation data. Organic carbon levels are sub optimal, but other tested nutrient concentrations are satisfactory.
- pH:** Slightly alkaline at the surface, strongly alkaline with depth
- Rooting depth:** Not recorded. Estimate 45 cm in pit.
- Barriers to root growth:**
- Physical:** The dense coarsely structured subsoil prevents uniform root distribution.
  - Chemical:** High pH, sodicity and boron concentrations, and marginally high salinity from 45 cm prevent deeper root growth.
- Waterholding capacity:** Approximately 65 mm in the rootzone.
- Seedling emergence:** Usually satisfactory. Surface may seal and set hard if over-worked / over-grazed.
- Workability:** Firm surface is easily worked.
- Erosion Potential:**
- Water:** Low.
  - Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> 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	7.6	7.4	1	0.1	1.0	1.12	22	-	-	3	0.34	2.1	5.1	0.56	12.3	9.13	1.24	0.08	1.46	1
10-25	7.8	7.6	2	0.1	0.4	0.48	3.3	-	-	2	0.40	3.7	1.8	0.18	14.3	12.54	2.10	0.16	1.57	1
25-35	8.3	7.8	11	0.1	0.9	0.43	3.5	-	-	2	0.49	2.0	1.1	0.17	14.5	10.97	3.21	0.69	0.74	5
35-45	9.0	8.1	32	0.5	4.2	0.60	3.8	-	-	9	0.40	1.0	0.78	0.14	12.3	6.96	4.36	2.74	0.28	22
45-60	9.4	8.4	39	0.9	7.5	0.54	2.9	-	-	24	0.23	1.1	0.51	0.13	11.1	3.23	5.76	5.04	0.33	45
60-80	9.4	8.5	35	1.2	9.4	0.29	2.8	-	-	33	0.19	1.3	0.45	0.10	12.4	2.38	5.89	5.63	0.77	45
80-100	9.4	8.5	36	1.3	10.7	0.29	2.1	-	-	34	0.24	1.3	0.35	0.10	11.3	2.25	5.54	5.35	0.82	47
100-140	9.3	8.4	42	1.2	11.1	0.32	4.0	-	-	29	0.31	1.5	0.33	0.13	10.2	2.07	5.03	4.73	0.74	46
140-180	9.3	8.4	36	1.2	9.6	0.22	2.1	-	-	34	0.30	1.5	0.37	0.13	10.7	1.90	5.36	5.59	0.89	52

**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](#)

