

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.

No landscape image available

Type Site: Site No.: EC056

1:50,000 sheet: 5932-3 (Minnipa)

Hundred: Minnipa

Annual rainfall: 350 mm

Sampling date: 17/02/92

Landform: Very gentle slope

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
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.
Water holding capacity	Approximately 65 mm in the root zone.
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 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 -S 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.