

## SANDY LOAM OVER SODIC RED CLAY

**General Description:** *Red crusting sandy loam to sandy clay loam with a bleached A2 horizon, overlying a red coarsely structured clayey subsoil becoming calcareous with depth*

**Landform:** Alluvial plains

**Substrate:** Fine textured alluvium with accumulations of fine carbonate

**Vegetation:** Saltbush - bluebush shrubland. Dominant species:  
*Atriplex vesicaria*  
*Maireana astrotricha*  
*Sclerolaena diacantha*



**Type Site:** Site No.: CU033

1: 50,000 sheet: 7033-4  
 Annual rainfall: 200 mm  
 Landform: Flat plain, 0% slope  
 Surface: Crusting, with no stones

Hundred: Out of Hundreds  
 Sampling date: 08/02/94

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-8	Red light sandy clay loam with moderate coarse platy structure. Abrupt to:
8-17	Red massive light sandy loam. Abrupt to:
17-20	Pink massive sandy loam. Sharp to:
20-25	Red medium clay with moderate very coarse prismatic structure. Abrupt to:
25-50	Red, highly dispersive light medium clay with strong polyhedral structure. Clear to:
50-90	Red highly calcareous light medium clay with strong coarse polyhedral structure and 2-10% soft carbonate segregations. Clear to:
90-130	Red highly calcareous light clay with strong very coarse polyhedral structure and minor soft carbonate segregations.



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

## Summary of Properties

<b>Drainage</b>	Dispersive (sodic) clay subsoil impedes free water movement. These soils tend to shed water, thereby reducing amounts available for plants and increasing erosion risk.
<b>Fertility</b>	The exchangeable cation data indicates that the subsoil has very high plant nutrient storage capacity; moderate to low in surface soil, due to low clay and organic matter content. Low carbonate (lime content), although the pH is high. May affect species suitability.
<b>pH</b>	Alkaline at the surface, strongly alkaline with depth.
<b>Rooting depth</b>	Root zone depth is 90 cm. There are very few roots below this depth.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The dispersive clay subsoil may restrict root development to a degree.
<b>Chemical:</b>	There are no chemical barriers, although the high pH and possibly high exchangeable sodium affect species suitability. Salinity is high (by agricultural standards) from 90 cm.
<b>Water holding capacity</b>	Approximately 110 mm in root zone.
<b>Seedling emergence</b>	Fair due to the crusting surface.
<b>Erosion Potential</b>	These soils are highly erodible - loss of topsoil exposes dispersive subsoil leading to scalding.

## 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	
Paddock	8.6	7.4	0	0.05	0.42	0.2	23	142	-	0.6	0.5	3	4.1	0.9	8.3	5.1	1.7	0.41	1.17	4.9
0-8	8.4	7.3	0	0.05	0.36	0.3	27	439	-	0.8	0.8	4	5.5	0.9	12.4	7.7	2.4	0.31	1.25	2.7
8-17	8.2	7.0	0	0.02	0.32	0.1	14	224	-	0.2	0.5	2	4.1	0.5	5.4	3.3	1.0	0.22	0.55	4.3
17-20	8.7	6.9	0	0.03	-	0.1	11	242	-	0.3	0.7	3	5.8	1.0	5.9	3.0	1.4	0.65	0.54	11.6
20-25	9.0	7.1	0	0.04	0.29	0.1	7	277	-	0.6	1.2	4	5.7	0.3	12.7	5.4	3.3	2.03	0.90	17.5
25-50	9.4	8.1	0.2	0.22	0.70	0.2	10	221	-	2.4	1.5	5	2.7	0.3	28.6	11.2	9.5	7.37	1.47	25.0
50-90	9.5	8.5	2.7	0.81	4.50	0.1	13	233	-	8.2	1.3	5	1.5	0.2	27.7	9.3	9.8	9.00	1.23	30.6
90-130	8.6	8.2	2.9	2.18	13.10	0.1	13	75	-	11.2	1.1	6	1.7	0.3	26.3	9.9	10.2	8.35	1.16	28.1

**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.