

## SAND OVER RED CLAY

**General Description:** *Thick reddish sand over a red clayey subsoil, calcareous with depth*

**Landform:** Very gently undulating plains

**Substrate:** Coarse grained alluvial sediments

**Vegetation:**



**Type Site:** Site No.: CL031

1:50,000 sheet: 6628-4 (Gawler)  
 Annual rainfall: 425 mm  
 Landform: Flat plain, 0% slope  
 Surface: Loose with no stones

Hundred: Munno Para  
 Sampling date: 27/04/99

### Soil Description:

Depth (cm)	Description
0-12	Red loose sand (drift). Abrupt to:
12-23	Dark reddish brown soft loamy sand. Abrupt to:
23-44	Reddish brown soft loamy sand. Abrupt to:
44-61	Dark reddish brown firm light medium clay with strong coarse subangular blocky structure. Abrupt to:
61-100	Yellowish red firm highly calcareous light clay with weak subangular blocky structure and more than 20% calcareous nodules (Class IIIB carbonate). Diffuse to:
100-160	Yellowish red and brown soft sandy loam.



**Classification:** Supracalcic, Mesonatric, Red Sodosol; thick, non-gravelly, sandy / clayey, moderate

## Summary of Properties

**Drainage:** Well drained. The subsoil clay is likely to perch water after very heavy rain and/or irrigation, but no part of the profile is likely to remain wet for more than a day or so.

**Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. The sandy surface has limited nutrient retention capacity, and this is reflected in low calcium, magnesium, zinc and copper levels. Phosphorus levels are satisfactory, and there is evidence of leaching to at least 60 cm.

**pH:** Neutral at the surface grading to alkaline with depth.

**Rooting depth:** Strong root growth to 70 cm and a few roots continuing to 150 cm.

### Barriers to root growth

**Physical:** None.

**Chemical:** High pH, high carbonate content and slightly elevated salinity below 60 cm will affect root growth of sensitive crops, but vines are not affected.

**Water holding capacity:** Approximate values of total and readily available water are: 180 mm and 90 mm for hardy crops (eg vines), with a potential root depth of 150 cm 110 mm and 50 mm for more sensitive crops (eg almonds) with a potential root depth of 90 cm.

**Seedling emergence:** No restriction.

**Workability:** No restriction.

### Erosion Potential

**Water:** Low.

**Wind:** Moderate (sandy surface).

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Row	6.9	6.6	0	0.66	-	0.59	52	294	378	1.7	-	-	-	-	3.6	3.89	0.24	0.29	0.58	na
0-12	7.5	7.3	0	0.35	304	0.26	47	243	39	1.3	3.6	51	68	4.5	3.7	1.90	0.50	0.53	0.41	na
12-23	8.0	7.3	0	0.28	229	2.05	51	331	30	1.8	1.7	41	118	1.7	5.2	2.31	1.34	0.73	0.68	na
23-44	8.1	7.3	0	0.23	186	0.26	66	376	26	1.7	1.8	32	96	1.3	5.7	2.08	1.70	0.84	0.74	na
44-61	8.4	7.2	0	0.26	-	0.47	42	465	48	3.2	-	-	-	-	10.8	4.83	3.35	1.79	1.08	16.6
61-100	9.1	8.0	10.0	0.46	-	0.23	3	247	90	2.1	-	-	-	-	8.2	4.53	2.34	2.23	0.50	27.2
100-160	9.1	8.0	3.3	0.47	-	0.13	2	268	65	2.5	-	-	-	-	6.6	2.43	2.62	1.85	0.47	28.0

**Note:** Row sample bulked from cores (0-15 cm) taken along row adjacent 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.