

## SILTY LOAM OVER RED CLAY ON ROCK

**General Description:** *Medium thickness reddish brown sandy loam to sandy clay loam with a paler coloured gravelly A2 horizon, overlying a blocky red clay with ferruginous rock fragments throughout*

**Landform:** Ridges in the eastern Mt. Lofty Ranges

**Substrate:** Ferruginous and pyritic schists of the Tappanappa Formation and associated Nairne Pyrite

**Vegetation:** Blue gum and sheoak

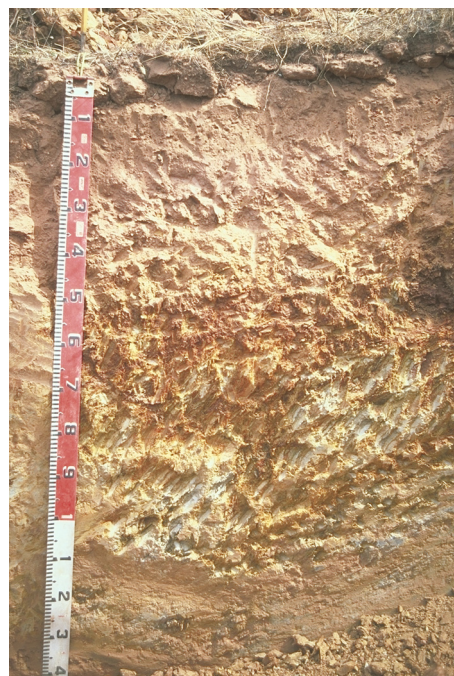


<b>Type Site:</b>	Site No.:	CH089	1:50,000 mapsheet:	6628-2 (Onkaparinga)
	Hundred:	Kanmantoo	Easting:	312200
	Section:	5277	Northing:	6126100
	Sampling date:	19/01/96	Annual rainfall:	730 mm average

Lower slope of steep ridge. Firm surface, 20% slope.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Reddish brown massive silty loam. Clear to:
10-25	Light reddish brown massive silty loam. Gradual to:
25-50	Red heavy silty loam with moderate polyhedral structure and 10-20% schist fragments. Abrupt to:
50-70	Dark reddish brown light clay with strong polyhedral structure and 20-50% schist fragments. Clear to:
70-140	Weathering ferruginous schist.



**Classification:** Haplic, Eutrophic, Red Chromosol; thick, non-gravelly, silty / clayey, moderate



## Summary of Properties

<b>Drainage:</b>	The soil is moderately well drained. It may remain wet for a week or so following rain.
<b>Fertility:</b>	The natural fertility of the soil is moderately high as indicated by the CEC values. Leaching associated with acidification has caused cation losses, and calcium and magnesium are low. However the naturally high potassium levels have caused an imbalance in the cation ratios so that hypomagnesia is a likely problem. All trace elements are very high, reflecting the high degree of mineralization of the parent rock. Phosphate fixation due to extreme iron levels is likely. Organic carbon levels are very high.
<b>pH:</b>	Acidic at the surface, neutral with depth. Dolomitic lime is needed for pH correction.
<b>Rooting depth:</b>	70 cm in pit.
<b>Barriers to root growth:</b>	
<b>Physical:</b>	Nil
<b>Chemical:</b>	Acidity and possible associated aluminium and manganese toxicity.
<b>Waterholding capacity:</b>	Approximately 80 mm in pit.
<b>Seedling emergence:</b>	Good.
<b>Workability:</b>	Good.
<b>Erosion Potential:</b>	
<b>Water:</b>	Moderately high to high due to the slope of the land and the potential for substantial run on from upslope.
<b>Wind:</b>	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 (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.5	4.9	0	0.28	1.53	4.2	43	670	29	1.2	9.1	2300	160	31	11.7	5.19	1.62	0.24	1.48	2.0
0-10	5.3	4.4	0	0.13	0.73	3.0	9	501	16	0.7	-	-	-	-	8.4	2.95	0.71	0.21	0.84	2.5
10-25	5.4	4.4	0	0.03	0.19	1.3	4	308	9	0.5	-	-	-	-	6.4	2.53	0.63	0.13	0.26	2.1
25-50	6.3	5.2	0	0.02	0.16	0.4	<4	253	9	0.3	-	-	-	-	4.5	2.83	0.87	0.15	0.19	3.3
50-70	6.6	5.5	0	0.04	0.16	0.5	<4	532	13	1.5	-	-	-	-	14.2	5.60	6.40	0.39	0.64	2.8
70-140	6.7	5.7	0	0.05	0.24	0.2	<4	462	19	0.8	-	-	-	-	6.6	1.26	3.29	0.36	0.26	5.5

**Note:** Paddock sample bulked from 20 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](#)

