

## LOAM OVER RED CLAY ON ROCK

**General Description:** *Hard loam grading to a gravelly clay loamy subsurface, over a reddish well structured clay grading to weathering fine grained basement rock*

**Landform:** Moderately steep to steep hillslopes.

**Substrate:** Weathering fine grained basement rock – siltstone of the Saddleworth Formation at this site.

**Vegetation:**

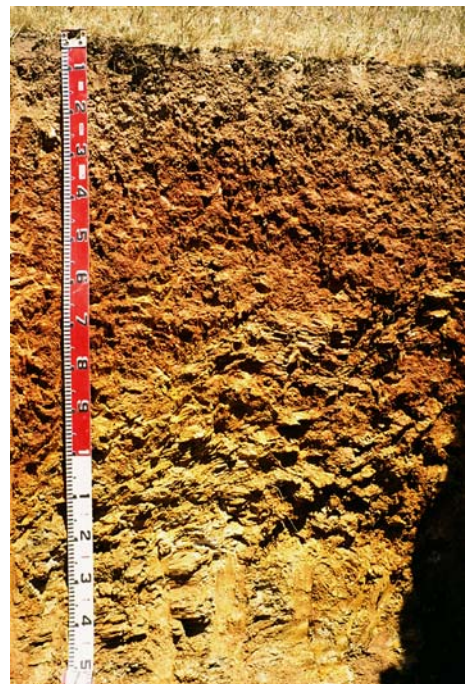


**Type Site:** Site No.: CH155

1:50,000 sheet: 6627-4 (Noarlunga)      Hundred: Willunga  
 Annual rainfall: 725 mm      Sampling date: 23/10/06  
 Landform: Upper slope of rolling low hills, 20% slope.  
 Surface: Hard setting surface with minor quartzite and siltstone fragments.

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown hard loam with weak granular structure and 20-30% siltstone and quartzite gravel to 60 mm. Clear to:
10-25	Yellowish red hard massive light clay loam with 30-50% siltstone fragments to 60 mm. Abrupt to:
25-55	Red hard medium clay with strong medium polyhedral structure and minor siltstone fragments. Diffuse to:
55-90	Red and yellowish red firm medium clay with strong medium polyhedral structure and 20-50% siltstone fragments. Diffuse to:
90-155	Light yellowish brown, brownish yellow, strong brown and light grey firm light clay with strong fine platy structure, forming in cleavages of weathering siltstone. Clear to:
155-	Weathering siltstone.



**Classification:** Haplic, Eutrophic, Red Chromosol; medium, moderately gravelly, loam / clayey, very deep

## Summary of Properties

**Drainage:** Well drained. The soil is unlikely to remain saturated for more than a day or so following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is moderately low to moderate, with adequate subsoil nutrient retention capacity. Data indicate deficiencies of phosphorus and copper, with marginal levels of zinc.

**pH:** Slightly acidic at the surface, neutral with depth.

**Rooting depth:** 155 cm in sampling pit, but few roots below 90 cm.

### Barriers to root growth:

**Physical:** There are no significant physical barriers above the underlying rock.

**Chemical:** There are no apparent chemical barriers.

**Water holding capacity:** Approximately 110 mm in the potential root zone.

**Seedling emergence:** Fair to satisfactory, depending on friability of the surface.

**Workability:** Fair to satisfactory, but slope gradients preclude most cultivation.

### Erosion Potential

**Water:** Moderately high.

**Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	6.1	4.9	0.24	0.07	0.29	2.74	5	219	9.9	0.5	0.88	162	20.4	1.26	6.6	4.24	1.52	0.24	0.55	3.7
10-25	6.4	5.2	0.22	0.03	0.19	0.80	2	134	3.8	0.6	0.64	48	3.19	0.44	5.5	3.02	1.92	0.24	0.31	4.4
25-55	6.6	5.7	0.28	0.04	0.21	0.77	2	211	8.4	1.1	1.19	32	2.03	0.36	12.4	4.55	6.85	0.43	0.57	3.5
55-90	6.7	5.9	0.26	0.05	0.28	0.31	2	146	18.4	0.8	0.86	30	2.08	0.22	10.8	3.45	6.48	0.48	0.37	4.5
90-155	6.9	6.4	0.34	0.09	0.51	0.18	3	103	32.6	0.6	0.74	46	3.63	0.47	13.9	3.97	8.89	0.77	0.26	5.5

**Note:** Paddock sample bulked from cores (0-10 cm) taken around the pit.

Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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.