

## SHALLOW GRADATIONAL CLAY LOAM

**General Description:** *Friable clay loam grading to a dark red very well structured clay overlying soft carbonate which passes gradually to weathering siltstone*

**Landform:** Hillslopes

**Substrate:** Calcareous fine grained basement rock, or rock mantled by secondary carbonate.

**Vegetation:** Blue gum woodland



**Type Site:** Site No.: CH075

1:50,000 sheet: 6627-1 (Echunga)

Hundred:

Kondoparinga

Annual rainfall: 900 mm

Sampling date:

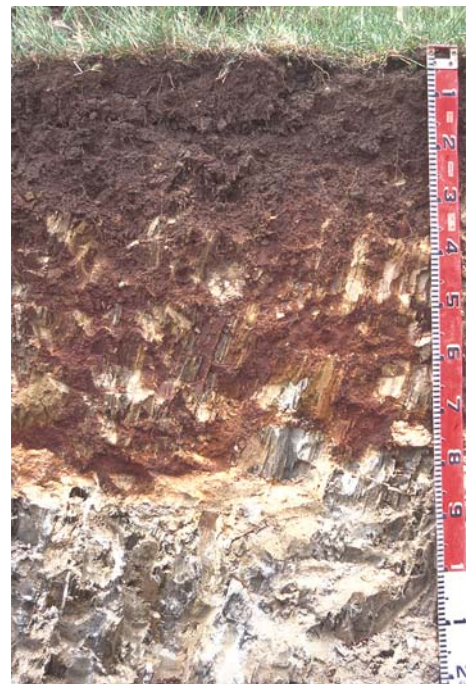
24/11/94

Landform: Mid slope of a rolling low hill, 22% slope.

Surface: Firm.

### Soil Description:

Depth (cm)	Description
0-11	Dark reddish brown clay loam with moderate granular structure. Abrupt to:
11-25	Dark reddish brown light clay with strong polyhedral structure. Clear to:
25-35	Dark reddish brown light medium clay with strong polyhedral structure and 10-20% siltstone fragments. Clear to:
35-70	Dark reddish brown light medium clay with strong polyhedral structure and more than 50% siltstone fragments. Sharp to:
70-80	Very pale brown, very highly calcareous massive light sandy clay loam (mostly fine carbonate) with more than 50% siltstone fragments. Abrupt to:
80-120	Weathering siltstone with 2-10% fine carbonate in cleavages.



**Classification:** Haplic, Hypercalcic, Red Dermosol; medium, non-gravelly, clay loamy/clayey, moderate

## Summary of Properties

<b>Drainage</b>	Well drained. The friable open structure and moderate slope mean that the soil does not remain saturated for more than a few days at a time.
<b>Fertility</b>	The soil is naturally very fertile (high CEC throughout, and very high calcium saturation - more than 75% of CEC). Organic carbon levels are high, indicating low levels of biological activity. Phosphorus and potassium are very high and sulphur is adequate. However, the potassium : magnesium ratio is excessive and hypomagnesia is a likely problem without correction of this imbalance.
<b>pH</b>	Slightly acidic at the surface to alkaline at depth.
<b>Rooting depth</b>	Good root growth to 70 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Shallow depth to rock is the only limitation.
<b>Chemical:</b>	None
<b>Water holding capacity</b>	Approximately 100 mm in root zone.
<b>Seedling emergence</b>	Good
<b>Workability</b>	Good
<b>Erosion Potential</b>	
<b>Water:</b>	High due to the moderate slope. The soil itself is well structured and resistant to erosion.
<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	6.8	6.4	0	0.16	0.93	5.4	94	797	11.9	1.8	2.53	295	231	5.23	29.5	25.55	3.45	0.27	2.15	0.9
0-11	6.3	5.6	0	0.09	0.55	5.9	145	812	12.1	1.8	-	-	-	-	29.6	18.57	3.47	0.27	2.06	0.9
11-25	6.2	5.3	0	0.05	0.25	3.3	41	556	12.0	1.5	-	-	-	-	25.3	15.05	2.97	0.26	1.33	1.0
25-35	5.8	5.3	0	0.04	0.16	1.8	21	261	16.5	1.7	-	-	-	-	21.9	11.46	3.03	0.31	0.79	1.4
35-70	6.4	5.3	0	0.03	0.12	1.1	8	136	13.9	1.1	-	-	-	-	20.9	12.16	3.14	0.52	0.35	2.5
70-80	8.7	7.7	67.5	0.10	0.29	1.2	<4	89	6.3	0.3	-	-	-	-	4.4	6.83	1.95	0.16	0.50	3.6

**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.