

# LOAMY SAND OVER RED SANDY CLAY LOAM

**General Description:** *Thick brown loamy sand over a red and brown sandy clay loam, calcareous with depth, overlying a buried subsoil*

**Landform:** Alluvial plains of the Angas River

**Substrate:** Clayey subsoil of an older soil formed in alluvium

**Vegetation:**

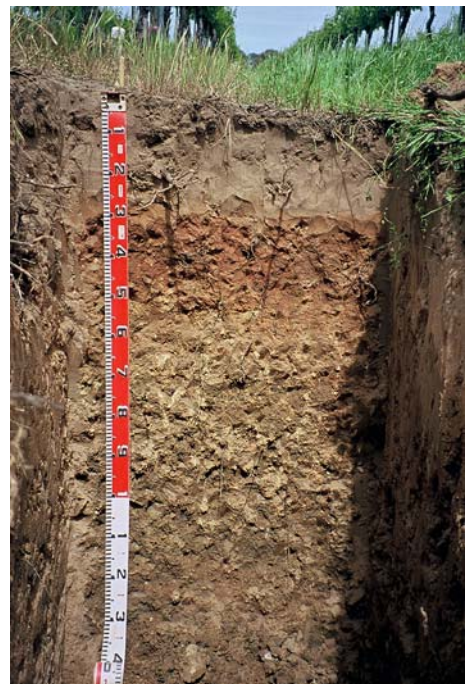


**Type Site:** Site No.: CH141

1:50,000 sheet:	6627-2 (Milang)	Hundred:	Bremer
Annual rainfall:	400 mm	Sampling date:	18/10/05
Landform:	Alluvial plain, 0% slope		
Surface:	Soft with no stones		

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-20	Brown soft single grain loamy sand. Gradual to:
20-32	Light brown (bleached when dry) soft single grain light loamy sand. Abrupt to:
32-45	Yellowish red friable sandy clay loam with weak subangular blocky structure. Clear to:
45-80	Brown friable highly calcareous clay loam with moderate polyhedral structure and 10-20% soft carbonate segregations. Gradual to:
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Subsoil of older buried soil:	
80-115	Dark yellowish brown and dark brown mottled friable slightly calcareous light medium clay with strong polyhedral structure. Diffuse to:
115-150	Brown and dark yellowish brown mottled firm medium clay with strong polyhedral structure and 2-10% carbonate fragments.



**Classification:** Calcic, Subnatric, Red Sodosol; thick, non-gravelly, sandy / clay loamy, moderate

## Summary of Properties

- Drainage:** Well drained. The profile rarely remains wet for more than a day or so.
- Fertility:** Inherent fertility is low due to the low clay content of the surface soil. Test results indicate low phosphorus, potassium and sulphur levels. Organic carbon levels are below typical values for this soil/climate environment.
- pH:** Neutral at the surface, moderately alkaline with depth and strongly alkaline in the buried soil .
- Rooting depth:** Root growth is strong to 45 cm, and moderate to 115 cm. Few roots occur below this depth in the sampling pit.
- Barriers to root growth:**
- Physical:** There are no significant physical barriers.
- Chemical:** Elevated salinity, sodicity and boron concentrations from 80 cm restrict root growth.
- Water holding capacity:** (Estimates for potential root zone of irrigated crops – approx. 115 cm in this profile)
- Total available: 130 mm
- Readily available: 70 mm
- Seedling emergence:** Satisfactory.
- Workability:** Satisfactory.

## Erosion Potential

- Water:** Low, except in severe flood event.
- Wind:** Moderately low due to sandy surface.

## 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	Cl mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-20	7.0	6.5	0	0.04	0.40	0.60	24	127	7	3.2	0.7	4.28	50	34.7	2.74	4.6	3.53	0.47	0.25	0.33	5.5
20-32	7.9	7.0	0	0.04	0.53	0.16	6	51	11	3.9	0.4	0.67	43	11.1	4.30	2.5	1.61	0.49	0.27	0.13	na
32-45	7.8	7.1	0	0.05	0.88	0.24	11	175	23	5.1	1.6	1.34	27	19.7	4.92	14.0	4.48	7.59	1.51	0.46	10.8
45-80	8.8	7.9	6.2	0.21	1.36	0.24	5	391	34	58.9	3.9	0.69	10	2.23	1.61	19.9	9.36	8.49	0.96	1.04	4.8
80-115	8.7	8.0	6.1	0.85	6.18	0.21	2	585	508	318	6.0	0.96	16	6.8	2.26	27.6	7.26	13.1	5.70	1.56	20.7
115-150	9.2	8.3	3.2	0.58	3.82	0.16	2	558	397	91.8	7.8	1.2	26	27.9	3.30	27.7	5.97	12.6	7.57	1.57	27.3

**Note:** 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, in this case estimated by the sum of cations.