

LOAMY SAND OVER RED LIGHT CLAY

General Description: *Thick reddish loamy sand over a red and brown light clay, calcareous with depth grading to medium textured micaceous alluvium. Soil overlain by up to 30 cm recent alluvial wash*

Landform: Alluvial plains

Substrate: Medium textured micaceous alluvium

Vegetation: Red gum (*Euc. camaldulensis*) woodland

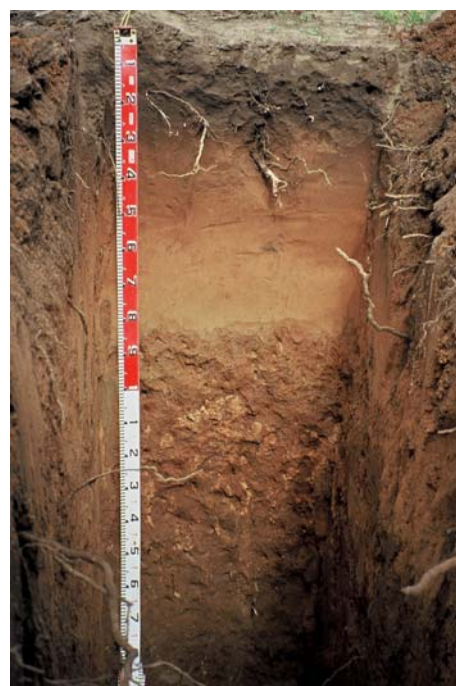


Type Site: Site No.: CH131B

1:50,000 sheet:	6627-3 (Alexandrina)	Hundred:	Bremer
Annual rainfall:	390 mm	Sampling date:	18/10/05
Landform:	Alluvial plain, 0% slope		
Surface:	Firm surface with no stones		

Soil Description:

Depth (cm)	Description
0-25	Dark brown firm fine sandy clay loam with weak subangular blocky structure (recent wash deposit). Clear to:
25-40	Dark reddish brown soft single grain loamy sand. Gradual to:
40-85	Yellowish red soft single grain loamy sand. Abrupt to:
85-110	Yellowish red and strong brown firm fine sandy light clay with weak coarse prismatic structure. Gradual to:
110-160	Reddish brown firm slightly calcareous light clay with moderate subangular blocky structure, 10-20% soft and 2-10% hard carbonate segregations. Gradual to:
160-190	Reddish brown and dark yellowish brown mottled friable massive light silty clay loam.



Classification: Depositional phase (due to surface deposit) of:
Calcic, Subnatric, Red Sodosol; thick, non-gravelly, sandy / clayey, very deep

Summary of Properties

Drainage: Well drained. The profile rarely remains wet for more than a day or so.

Fertility: Inherent fertility of the original soil is low due to the low clay content of its surface. However, the finer textured alluvium overlying the modern soil has significantly higher nutrient status and retention capacity. Test results indicate low phosphorus levels, but concentrations of all other elements are satisfactory.

pH: Slightly alkaline at the surface, moderately alkaline with depth.

Rooting depth: Root growth is strong to 40 cm, diminishes with depth, and picks up again from 160 cm, possibly due to deep subsoil moisture reserves.

Barriers to root growth:

Physical: There are no significant physical barriers.

Chemical: There are no significant chemical barriers.

Water holding capacity: (Estimates for potential root zone of irrigated crops – approx. 200 cm in this profile)

Total available: 230 mm
 Readily available: 125 mm

Seedling emergence: Satisfactory, although surface can seal over if excessively cultivated.

Workability: Some tendency to shatter if worked too dry and puddle if worked too wet.

Erosion Potential

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -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	
0-25	7.8	7.1	0	0.07	0.60	1.22	11	329	27	8.5	1.1	15.7	120	165	17.1	17.6	9.37	6.58	0.77	0.84	4.4
25-40	7.8	6.9	0	0.05	0.48	0.27	2	132	20	4.8	0.4	2.31	31	44.6	1.51	4.9	2.72	1.46	0.38	0.33	7.8
40-85	7.1	6.7	0	0.06	0.76	0.13	2	81	48	8.6	0.3	0.76	13	16.9	0.95	2.7	1.33	0.83	0.31	0.23	na
85-110	7.7	6.8	0	0.07	0.60	0.22	2	244	35	9.7	0.9	1.59	26	36.1	2.84	15.6	5.49	8.33	1.11	0.7	7.1
110-160	8.5	7.7	2.4	0.15	1.01	0.22	2	256	59	25.4	1.0	1.51	9	10.8	0.93	20.3	10.6	7.68	1.28	0.72	6.3
160-190	8.5	7.7	0.7	0.13	0.84	0.24	2	234	43	11.8	0.7	1.92	28	51.7	1.08	15.4	7.52	6.3	0.99	0.61	6.4

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.