

GRADATIONAL CLAY LOAM

General Description: *Thick dark brown clay loam grading to a brown or red well structured clay, becoming yellower or greyer and sometimes weakly calcareous with depth*

Landform: Alluvial flats of the lower reaches of the Bremer River

Substrate: Variable sandy and silty alluvial sediments

Vegetation: Red gum and blue gum woodland



Type Site:	Site No.:	CH052	1:50,000 mapsheet:	6727-3 (Alexandrina)
	Hundred:	Freeling	Easting:	322750
	Section:	3611	Northing:	6086700
	Sampling date:	18/08/93	Annual rainfall:	400 mm average

Alluvial flat; 0% slope; firm surface.

Soil Description:

Depth (cm)	Description
0-25	Black clay loam with strong granular structure. Clear to:
25-40	Very dark grey massive silty clay loam. Clear to:
40-60	Yellowish red and dark brown light medium clay with moderate coarse angular blocky structure. Gradual to:
60-85	Yellowish red and brown fine sandy light clay with weak coarse blocky structure. Gradual to:
85-180	Brown and yellowish red soft interbedded river sediments ranging from clayey fine sand to fine sandy loam.



Classification: Melanic-Sodic, Eutrophic, Red Dermosol; thick, non-gravelly, clay loamy / clayey, moderate



Summary of Properties

Drainage:	The soil is moderately well drained and is unlikely to remain wet for more than a week or so.
Fertility:	The soil has moderately high natural fertility. Organic carbon and phosphorus levels are high.
pH:	Neutral throughout.
Rooting depth:	180 cm in the pit.
Barriers to root growth:	
Physical:	There are no apparent physical barriers.
Chemical:	There are no apparent chemical barriers, although sodicity is developing in the subsoil.
Waterholding capacity:	Over 200 mm (very high), but not all is available due to uneven root distribution. Readily available water capacity for irrigated crops is about 120 mm.
Seedling emergence:	Good.
Workability:	Good, provided that organic carbon levels are maintained to preserve structure.
Erosion Potential:	
Water:	Low.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Row	6.8	6.4	0	0.19	1.53	2.0	49	494	-	2.3	8.2	113	28.0	16.6	16.5	13.29	5.43	1.05	1.19	6.4
0-25	7.2	6.6	0	0.16	1.07	1.9	18	490	-	2.2	6.3	57	24.3	11.3	20.4	14.11	6.39	1.65	1.17	8.1
25-40	7.3	6.5	<0.1	0.11	0.86	0.7	6	299	-	1.4	3.0	28	15.2	0.3	10.3	5.21	3.18	1.15	0.60	11.2
40-60	7.3	6.5	<0.1	0.11	0.82	0.4	<4	306	-	1.7	1.9	22	13.0	0.1	11.7	5.59	3.89	1.27	0.70	10.9
60-85	7.3	6.5	<0.1	0.10	0.74	0.2	<4	273	-	1.5	1.2	14	4.6	0.1	9.5	4.27	3.44	1.00	0.56	10.5
85-180	7.1	6.4	0	0.08	0.75	0.1	<4	218	-	0.9	0.9	9	4.8	0.1	5.1	2.23	2.46	0.65	0.39	12.7

Note: Row sample bulked from 20 cores (0-10 cm) taken from along the rows 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](#)

