DEEP GRADATIONAL RED LOAM
(scalded and non scalded)

General Description: *Thin weakly structured loam grading to a well structured red clay, calcareous from shallow depth grading to clayey alluvium*

Landform: Level alluvial plain

Substrate: Strongly structured red clay with soft carbonate segregations

Vegetation: Acacia victoriae / Atriplex shrubland with Stipa grass cover

Type Site: Site No.: CU045

1:50,000 sheet:	6633-3 (Carrieton)	Hundred:	Yanyarrie
Annual rainfall:	300 mm	Sampling date:	02/11/94
Landform:	Very gently inclined plain, 1% slope		
Surface:	Sporadic scalding, with lichen crust (non scalded) and minor quartzite stone CU045A is not scalded, CU045B is scalded		

Summary of Properties

Drainage Well drained. The soil is unlikely to remain wet for more than a day or so after prolonged rain. The scalded area will shed water and is less likely to become wet.

Fertility Natural fertility is high as indicated by the exchangeable cation data.

pH Alkaline throughout.

Rooting depth Strong root growth to 40 cm, and some roots to 70 cm, in natural soil; no roots in the scalded soil.

Barriers to root growth

- **Physical:** There are no physical barriers to root growth.
- **Chemical:** High salinity is the main chemical barrier (to salt sensitive plants). Note that in the natural soil, surface salinity is low, levels increasing with depth. In the scalded soil, salt levels are highest near the surface due to evaporative accumulation.

Water holding capacity This soil has a potentially very high water holding capacity, but in practice this would rarely be filled. The capacity in the root zone is about 100 mm.

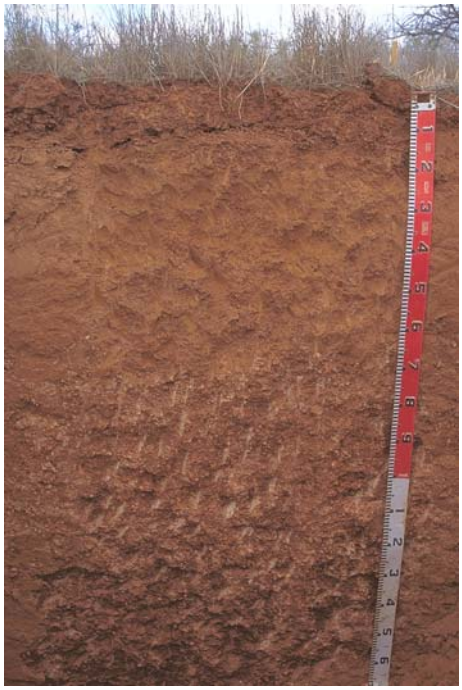
Seedling emergence Good, except on scalded areas where sealing surfaces, rapid runoff and high salinity prevent any establishment.

Erosion Potential

- **Water:** Moderately low due to run on from higher ground.
- **Wind:** Moderately low - livestock can pulverize the surface causing it to blow. The scalded surface is at high risk of both types of erosion.

Soil Description: **CU045A (non scalded site)**

Depth (cm)	*Description*
0-6	Red loam with weak coarse structure. Abrupt to:
6-18	Dark reddish brown light clay with moderate polyhedral structure. Clear to:
18-40	Red highly calcareous weakly structured clay loam. Gradual to:
40-70	Red highly calcareous weakly structured clay loam with up to 10% carbonate nodules. Gradual to:
70-120	Red highly calcareous light medium clay with strong polyhedral structure, 10-20% soft carbonate and 10-20% carbonate nodules. Diffuse to:
120-170	Red moderately calcareous medium clay with strong polyhedral structure, 10-20% soft carbonate and 10-20% carbonate nodules.



Classification: Sodic, Calcic, Red Dermosol; thin, non gravelly, loamy / clayey, very deep.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)			CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	SAR	Cl mg/kg
											Cu	Mn	Zn		Ca	Mg	Na	K			
0-6	8.0	7.6	-	0.38	2.15	0.6	-	-	<1	1.5	-	-	-	18.8	8.2	5.1	0.7	1.8	3.9	3.7	179
6-18	8.5	8.3	-	2.36	10.65	0.4	-	-	13	3.9	-	-	-	21.8	8.1	7.5	3.6	1.3	16.3	13.2	1437
18-40	8.4	8.3	-	2.80	27.1	0.3	-	-	225	5.7	-	-	-	19.9	10.2	9.6	2.0	0.9	10.0	11.9	4082
40-70	8.4	8.2	-	2.83	25.6	0.2	-	-	488	2.9	-	-	-	18.2	8.9	9.0	1.7	0.9	9.6	8.8	3436
70-120	8.3	8.1	-	3.78	33.8	0.1	-	-	467	2.9	-	-	-	18.5	9.0	9.6	1.0	1.1	5.3	7.7	5057
120-170	8.2	8.1	-	3.79	36.8	<0.1	-	-	412	3.0	-	-	-	22.4	9.5	12.7	1.3	1.3	5.9	8.0	6540

Note: 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. SAR is sodium adsorption ratio measured on the saturation extract.

Soil Description: **CU045B (scalded site)**

Depth (cm)	*Description*
0-5	Red friable light clay with strong polyhedral structure. Abrupt to:
5-15	Red firm light clay with moderate polyhedral structure. Clear to:
15-40	Yellowish red highly calcareous weakly structured clay loam with 2-10% soft carbonate segregations. Diffuse to:
40-80	Yellowish red highly calcareous weakly structured clay loam with 2-10% soft carbonate segregations. Gradual to:
80-125	Red highly calcareous light medium clay with strong polyhedral structure, 20-50% soft carbonate and 2-10% carbonate nodules. Diffuse to:
125-170	Red moderately calcareous medium clay with strong polyhedral structure, 10-20% soft carbonate and 2-10% carbonate nodules.

Classification: Sodic, Hypercalcic, Red Dermosol; thin, non gravelly, clayey / clayey, very deep.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)			CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	SAR	Cl mg/kg
											Cu	Mn	Zn		Ca	Mg	Na	K			
0-5	7.8	7.8	-	2.84	38.9	0.4	-	-	93	6.0	-	-	-	25.0	9.4	8.6	5.9	1.6	23.7	13.2	6336
5-15	7.9	8.0	-	5.06	55.7	0.4	-	-	604	4.8	-	-	-	24.2	9.6	9.1	3.5	1.2	14.2	11.0	10310
15-40	8.2	8.1	-	3.81	42.8	0.3	-	-	251	3.2	-	-	-	19.6	8.7	9.8	2.3	1.2	11.4	8.5	6792
40-80	8.2	8.2	-	3.69	32.9	0.2	-	-	234	2.7	-	-	-	18.0	8.3	9.6	1.5	1.2	8.1	8.4	4827
80-125	8.3	8.2	-	3.21	33.7	0.2	-	-	160	3.2	-	-	-	16.6	7.3	9.6	1.2	1.2	7.1	8.0	5050
125-170	8.2	8.1	-	3.56	29.3	<0.1	-	-	167	3.2	-	-	-	20.7	7.8	12.3	1.7	1.3	8.2	8.2	5019

Note: 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. SAR is sodium adsorption ratio measured on the saturation extract.