SANDY LOAM OVER RED CLAY LOAM

General Description: *Medium to thick massive sandy loam over a red clay loam to clay, calcareous with depth, grading to alluvium*

Landform: Alluvial terraces and plains

Substrate: Medium to fine textured alluvium (Pooraka Formation) mantled by fine windblown carbonate.

Vegetation:

Type Site: Site No.: MO044

1:50,000 sheet:	6727-4 (Monarto)	Hundred:	Freeling
Annual rainfall:	400 mm	Sampling date:	1976
Landform:	Alluvial terrace of Bremer River		
Surface:	Hard setting with no stones		

Soil Description:

Depth (cm)	*Description*
0-25	Reddish brown soft massive sandy loam. Clear to:
25-38	Dark reddish brown very hard clay loam with moderate subangular blocky structure. Clear to:
38-55	Dark reddish brown very hard highly calcareous light clay with moderate subangular blocky structure and 10-20% fine carbonate segregations. Diffuse to:
55-100	Dark brown hard moderately calcareous light clay with weak subangular blocky structure and 2-10% fine carbonate segregations.

Classification: Calcic, Subnatric, Red Sodosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Moderately well drained. The soil may remain wet for a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high, as indicated by the exchangeable cation data. Clay content is sufficiently high that there is adequate nutrient retention. Apart from nitrogen and phosphorus, zinc is the most likely deficiency.

pH: Alkaline at the surface (due to road dust – further from road would expect neutral to slightly acidic), alkaline with depth.

Rooting depth: Not recorded. Estimate 55 cm in pit with a few roots extending deeper.

Barriers to root growth:

Physical: The hard consistence of the subsoil layers imposes some restriction on even-ness of root distribution.

Chemical: High sodicity and salinity at depth restricts root growth.

Water holding capacity: Approximately 90 mm in the potential root zone.

Seedling emergence: Fair due to hard setting surface.

Workability: Fair due to hard setting surface. Soil tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H_2O	CO_3 %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-25	17	59	8	10	8.8	0	0.11	58	9	5.9	1.1	0.27	1.2	3
25-38	11	45	12	30	8.3	0	0.56	860	16	9.2	3.1	1.8	1.2	11
38-55	5	30	12	33	8.6	14	0.82	1140	19	11.0	4.5	2.6	1.4	14
55-100	3	33	16	34	9.2	6	0.97	1320	19	5.9	7.2	5.3	2.0	28

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.