SAND OVER RED SANDY CLAY LOAM

General Description: *Medium to thick sand to light sandy loam over a red weakly structured sandy clay loam to sandy clay, calcareous with depth.*

Landform: Gently undulating rises and outwash fans.

Substrate: Medium to coarse textured alluvium, mantled by fine carbonates.

Vegetation:

Type Site:

Site No.:	MO037	1:50,000 mapsheet:	6727-4 (Monarto)
Hundred:	Mobilong	Easting:	337030
Section:	32	Northing:	6120330
Sampling date:	1976	Annual rainfall:	350 mm average

Gently inclined outwash fan, 2% slope. Soft surface, no stones.

Soil Description:

Depth (cm)	*Description*
0-10	Reddish brown soft massive loamy sand with 2-10% quartz gravel. Sharp to:
10-17	Red soft massive loamy sand with 2-10% quartz gravel. Sharp to:
17-26	Reddish brown firm massive sandy clay loam. Gradual to:
26-36	Red hard massive highly calcareous sandy clay. Clear to:
36-70	Yellowish red hard massive very highly calcareous sandy clay with 20-50% fine carbonate segregations. Gradual to:
70-100	Yellowish red hard massive very highly calcareous sandy loam with more than 50% fine carbonate segregations and minor quartz gravel. Diffuse to:
100-140	Yellowish red hard massive highly calcareous sandy clay loam.

Classification: Hypercalcic, Mesonatric, Red Sodosol; medium, slightly gravelly, sandy/clay loamy, moderate

Summary of Properties

Drainage: Well drained. The soil is unlikely to remain saturated for more than a few days following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low, as indicated by the exchangeable cation data. Low clay content limits nutrient retention capacity which depends largely on surface organic matter. Subsoil reserves of macro nutrients are favourable. Most likely deficiencies are phosphorus, nitrogen, copper, zinc and possibly manganese.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: Not recorded. Estimate 35 cm in pit.

Barriers to root growth:

Physical: The clayey subsoil presents a minor barrier, restricting root distribution to some extent.

Chemical: High pH and sodicity prevent deep root growth.

Waterholding capacity: Approximately 50 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: The soft surface is easily worked.

Erosion Potential:

Water: Moderately low.

Wind: Moderately low to moderate.

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	
0-10	33	56	4	4	8.2	0.2	0.14	<50	10	5.8	1.5	0.19	1.2	1.9
10-17	nd	nd	nd	nd	8.6	nd	0.22	104	nd					
17-26	27	39	6	6	9.0	0.8	0.29	148	15	6.8	3.9	1.6	3.9	10.7
26-36	26	32	4	4	9.7	6.5	0.31	110	19	7.3	5.9	3.7	5.9	19.5
36-70	22	21	4	4	10.0	24	0.85	528	16	4.9	5.2	6.1	5.2	38.2
70-100	nd	nd	nd	nd	10.1	nd	0.64	340	nd					
100-140	50	32	2	2	9.8	14	0.87	900	10	1.9	2.7	3.4	2.7	34.0

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.

Further information: DEWNR Soil and Land Program