

THICK SAND OVER SANDY CLAY LOAM

General Description: *Very thick red loamy sand over a red sandy clay loam grading to coarse grained alluvium below 100 cm*

Landform: Very gently undulating dune field superimposed on alluvial plain

Substrate: Coarse grained alluvium, near surface in dunefield swales

Vegetation: Mallee



Type Site: Site No.: CH143

1:50,000 sheet:	6627-3 (Alexandrina)	Hundred:	Freeling
Annual rainfall:	390 mm	Sampling date:	18/10/05
Landform:	Slope of gently undulating dune, 2% slope		
Surface:	Soft with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark reddish brown soft single grain loamy sand. Diffuse to:
15-40	Yellowish red soft single grain loamy sand. Diffuse to:
40-65	Red soft single grain loamy sand. Abrupt to:
65-108	Dark reddish brown firm fine sandy clay loam with weak subangular blocky structure. Abrupt to:
108-120	Red soft single grain sand (windblown deposit). Abrupt to:
120-140	Reddish brown friable massive sandy loam (alluvial deposit). Clear to:
140-180	Strong brown soft single grain loamy sand (alluvial deposit).



Classification: Eutrophic, Subnatric, Red Sodosol; very thick, non-gravelly, sandy / clay loamy, deep

Summary of Properties

- Drainage:** Rapidly drained. The soil never remains wet for more than an hour or so following heavy or prolonged rainfall. Deep drainage is good.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data and low clay content. At sampling site, concentrations of sulphur and copper are low.
- pH:** Alkaline throughout.
- Rooting depth:** Good root growth to 65 cm, with a few roots extending to the base of the sampling pit (180 cm).
- Barriers to root growth:**
- Physical:** There are no significant physical barriers.
 - Chemical:** Low nutrient availability is the only likely chemical barrier.
- Water holding capacity:** (Estimates for potential root zone of irrigated crops – approx. 200 cm in this profile)
- Total available: 150 mm
Readily available: 85 mm
- Seedling emergence:** Satisfactory unless surface is water repellent.
- Workability:** The soil is easily worked over a wide range of moisture conditions. However, excessive cultivation of sandy surface will lead to wind erosion.

Erosion Potential

- Water:** Low.
- Wind:** Moderate.

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	
0-15	7.9	7.6	0	0.04	0.38	0.64	54	240	9	2.9	0.7	2.59	65	57.5	10.0	7.1	5.76	2.00	0.08	0.65	1.1
15-40	7.7	7.1	0	0.03	0.28	0.28	8	164	5	1.6	0.5	0.98	30	53.3	0.37	3.9	2.58	0.80	0.07	0.46	1.8
40-65	7.7	7.1	0	0.03	0.25	0.23	2	158	3	1.2	0.4	0.8	16	33.8	0.30	3.1	1.83	0.77	0.09	0.42	2.9
65-108	8.0	7.1	0	0.16	1.84	0.32	2	259	98	47.5	1.9	2.75	21	32.5	0.68	15.4	5.3	7.81	1.59	0.73	10.3
108-120	8.0	7.1	0	0.10	1.23	0.10	2	113	73	19.1	0.5	0.74	11	21.3	0.18	3.4	1.51	1.05	0.57	0.28	16.7
120-140	7.7	7.1	0	0.11	1.32	0.19	2	193	74	25.2	1.1	1.25	17	38.5	0.40	10.4	2.93	5.91	1.06	0.49	10.2
140-180	8.6	7.8	0	0.26	4.15	0.14	2	180	164	94.8	0.9	0.97	10	38.2	1.44	11.1	3.74	5.53	1.34	0.47	12.1

- 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.