

VERY THICK BLEACHED SAND OVER CLAYEY SAND

General Description: *Very thick bleached sand with an organically darkened surface, over a red and yellow massive clayey sand*

Landform: Slopes of undulating rises and low hills.

Substrate: Coarse grained Tertiary sediments.

Vegetation: Native pine



Type Site: Site No.: CL052

1:50,000 sheet: 6628-4 (Gawler)

Hundred: Barossa

Annual rainfall: 550 mm

Sampling date: 09/01/07

Landform: Upper slope of undulating low hills, 6% slope.

Surface: Loose with no stones. Excavated face in sand quarry.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-20	Dark greyish brown loose sand. Gradual to:
20-90	Very pale brown (bleached) loose sand. Sharp to:
90-125	Red, strong brown and yellow hard massive clayey coarse sand. Gradual to:
125-150	Yellowish brown, yellowish red and yellow hard massive coarse sandy loam.



Classification: Basic, Regolithic, Bleached-Orthic Tenosol; medium, non-gravelly, sandy / sandy, deep

Summary of Properties

Drainage: Rapidly drained. The soil is never saturated for more than a couple of hours at a time.

Fertility: Inherent fertility is very low, as indicated by the exchangeable cation data. Very low clay and organic carbon contents provide little nutrient retention capacity. The test data from the cut face at the sand quarry are indicative of natural levels of nutrient elements. With the inexplicable exception of sulphur, levels of all other elements are significantly lower than those required for crops and pastures.

pH: Slightly acidic at the surface, neutral with depth.

Rooting depth: Most roots are in the sand (i.e. 0-90 cm).

Barriers to root growth

Physical: The massive deep subsoil restricts, but does not prevent root growth.

Chemical: Low nutrient status and retention capacity are the main limitations. There are no toxicities.

Water holding capacity: Approximately 70 mm in the potential root zone.

Seedling emergence: Water repellence causes patchy emergence in most seasons.

Workability: The sandy surface is easily worked.

Erosion Potential

Water: Moderately low.

Wind: Moderately high.

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	React Fe 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	
0-20	6.5	5.5	0	0.04	0.49	0.42	2	48	21	15.1	0.3	214	<.05	37	2.30	0.43	3.6	2.96	0.39	0.12	0.16	3.3
20-90	6.7	5.7	0	0.02	0.11	<0.05	2	15	5	2.0	0.2	124	0.10	12	0.24	0.27	0.8	0.58	0.10	0.04	0.05	na
90-125	7.0	5.9	0	0.02	0.24	0.11	2	117	8	1.6	0.5	378	0.08	21	1.00	0.13	4.1	1.91	1.72	0.19	0.29	4.6
125-150	7.8	7.0	0	0.02	0.19	0.10	2	78	8	1.9	0.5	385	0.10	17	0.36	0.11	3.8	1.98	1.44	0.13	0.22	3.4

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.