DEEP BLEACHED SILICEOUS SAND

General Description: *Bleached sand with an organically darkened surface, grading to brown or yellow sand over calcreted calcarenite at variable depths below a metre*

Landform: Undulating rises (ancient coastal dunes).

Substrate: Calcreted calcarenite of the Bridgewater Formation.

Vegetation: Sand stringybark (Eucalyptus arenacea) and hill gum (E. fasciculosa) woodland.

Type Site:

Site No.:	SE902		
1:50,000 sheet:	6925-4 (Laffer)	Hundred:	Laffer
Annual rainfall:	475 mm	Sampling date:	26/11/03
Landform:	Lower slope of 3% of an undulating rise		
Surface:	Soft to loose with no stones		

Soil Description:

Depth (cm)	*Description*
0-10	Dark grey (10YR4/1) soft single grain sand. Gradual to:
10-25	Dark greyish brown (10YR4/2) soft single grain sand. Gradual to:
25-45	White (10YR8/1) soft single grain sand. Gradual to:
45-90	Yellow (10YR7/6) with very pale brown (10YR8/4) speckles soft single grain sand. Abrupt to:
90-125	Yellow (10YR8/6) soft single grain sand. Sharp to:
125-128	Brownish yellow (10YR6/8), light olive brown (2.5Y5/4) and very dark grey (N3/0) mottled soft massive light clayey sand. Sharp to:
128-	Massive sheet calcrete.

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

Summary of Properties

Drainage: Well drained. The bulk of the soil never remains wet for more than a day or so. However, seepage along the surface of the underlying calcrete can saturate the lower part of the profile for weeks to months depending on seasonal conditions.

Fertility: Inherent fertility is very low, as indicated by the exchangeable cation data. There is little capacity for nutrient supply or retention due to the low clay content and degree of leaching. At sampling site, potassium and copper levels are low, but phosphorus concentration is satisfactory. Regular phosphorus and nitrogen applications are essential, with strategic trace element applications. Tissue testing for calcium and magnesium levels is also warranted.

pH: Alkaline throughout, although surface values are higher than normal due to proximity to lime-surfaced road. Surface normally slightly acidic.

Rooting depth: 125 cm in the pit.

Barriers to root growth:

Physical: The calcrete is the only physical barrier to root growth.

Chemical: There are no chemical limitations other than very low nutrient levels.

Water holding capacity: Up to 100 mm in the potential root zone (high).

Seedling emergence: Satisfactory, although water repellence in some seasons will cause patchy establishment.

Workability: Sandy soils are easily worked, although compaction is likely if worked too wet.

Erosion Potential

Water: Low (except where water repellent).

Wind: Moderate due to low strength, non-aggregated surface.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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 (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-10	8.4	7.5	1.2#	0.212	1.10	1.19	24	84	100	12.8	0.9	0.12	7.6	4.11	1.6	3.5	3.11	0.33	0.00	0.05	na
10-25	7.7	7.3	0	0.088	1.24	0.59	8	61	66	10.7	0.5	0.09	8.9	1.15	0.82	2.1	1.83	0.19	0.00	0.04	na
25-45	7.6	7.1	0	0.055	0.78	0.15	5	36	37	5.4	0.2	0.08	12	0.42	0.41	0.5	0.38	0.06	0.02	0.03	na
45-90	7.9	7.4	0	0.043	0.51	0.33	7	41	22	3.8	0.2	0.07	16	0.41	0.23	0.5	0.37	0.06	0.01	0.05	na
90-125	7.6	7.7	0	0.397	7.86	0.15	2	58	494	10.2	0.5	0.07	3.3	0.24	0.21	0.6	0.32	0.17	0.02	0.04	na
125-128	8.7	8.3	0.6	1.134	21.2	0.27	2	240	1190	37.8	2.4	0.09	6.4	0.36	0.45	3.3	1.84	1.18	0.03	0.25	0.9

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.

\# Road dust – surface is normally non calcareous and slightly acidic.