

DEEP BLEACHED SAND

General Description: *Loose grey sand with a strongly bleached subsurface layer, becoming yellow with depth, over Tertiary sediments or a buried sand over clay profile*

Landform: Undulating rises to low hills.

Substrate: Clayey sand to sandy clay sediments of Tertiary age, or buried soil profiles formed on them.

Vegetation:



Type Site: Site No.: CH147
 1:50,000 sheet: 6627-4 (Noarlunga) Hundred: Willunga
 Annual rainfall: 600 mm Sampling date: 17/01/05
 Landform: Midslope of a low hill, 10% slope
 Surface: Loose with no stones

Soil Description:

Depth (cm)	Description
0-20	Dark greyish brown loose single grain light loamy sand. Clear to:
20-60	Pink loose single grain sand. Diffuse to:
60-90	Reddish yellow loose single grain sand. Clear to:
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Buried soil	
90-100	Reddish yellow soft single grain sand with 60% ironstone and quartz gravel (to 20 mm). Abrupt to:
100-135	Red, yellowish brown and light yellowish brown mottled hard sandy medium clay with moderate coarse subangular blocky structure.



Classification: Basic, Arenic, Bleached-Orthic Tenosol; medium, non-gravelly, sandy/sandy, moderate overlying: Ferric, Mottled-Subnatric, Red Sodosol; medium, very gravelly, sandy/clayey, deep?

Summary of Properties

- Drainage:** Rapidly drained. The soil rarely remains wet for more than a few hours at a time.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. Most nutrient retention capacity is attributable to the organic matter fraction of the surface soil. Test results indicate low phosphorus, potassium, manganese, zinc and sulphur concentrations. Regular frequent monitoring and fertilizer applications are needed on these soils.
- pH:** Acidic throughout.
- Rooting depth:** Roots continuing below 135 cm in the sampling pit.
- Barriers to root growth:**
- Physical:** There are no apparent physical barriers in the upper 135 cm.
 - Chemical:** The only chemical barrier is low nutrient status and retention capacity.
- Water holding capacity:** (Estimates for potential root zone of grape vines - 135 cm at this site)
- Total available: 120 mm
 - Readily available: 65 mm
- Seedling emergence:** Satisfactory, except where water repellent.
- Workability:** Loose sandy surface is easily worked, but inadvisable due to erosion risk.
- Erosion Potential**
- Water:** Moderately low.
 - Wind:** Moderate due to low fertility, loose sandy surface.

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	
0-20	6.1	5.1	0	0.034	0.31	0.76	12	58	16	4.2	0.3	4.94	52	6.2	2.88	2.5	1.77	0.55	0.06	0.12	na
20-60	6.2	5.3	0	0.014	0.16	0.11	9	15	6	2.5	0.2	0.43	43	0.38	0.18	0.7	0.52	0.15	0.02	0.03	na
60-90	6.3	5.4	0	0.012	0.10	0.17	9	16	4	1.0	0.2	0.33	68	0.10	0.29	1.9	1.24	0.46	0.14	0.05	na
90-100	6.3	5.3	0	0.010	0.09	0.12	2	15	2	1.0	0.2	0.36	34	0.52	0.40	1.0	0.54	0.27	0.16	0.03	na
100-135	5.6	4.8	0	0.067	0.30	0.21	2	37	27	36.5	0.7	0.21	40	0.34	0.25	9.4	2.82	5.82	0.64	0.14	6.8

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.