

BLEACHED SAND OVER CLAY

General Description: *Delved, bleached sand over poorly structured mottled orange clay*

Landform: Gently undulating dunefield.

Substrate: Tertiary age sandy clay.

Vegetation:



Type Site:	Site No.:	SE123	1:50,000 mapsheet:	7025-1 (Senior)
	Hundred:	Senior	Easting:	483130
	Section:	59	Northing:	5991060
	Sampling date:	30/10/06	Annual rainfall:	475 mm average

Swale between gently undulating dunes. Soft surface with no stones. Paddock delved to 30 cm.

Soil Description:

Depth (cm)	Description
0-20	Very dark greyish brown soft single grain loamy sand with (delved) clay fragments. Abundant roots. Clear to:
20-45	Delved zone - mix of upper three horizons (mainly surface sand) along delve line. Many roots:
20-25/50*	Pale brown (bleached) soft single grain sand. Roots common. Sharp to:
25/50*-75	Reddish yellow, red and brownish yellow mottled very hard light clay with strong very coarse columnar, breaking to coarse angular blocky, structure and a thin grey silcrete coating on ped faces. Roots common to few. Gradual to:
75-120	Brownish yellow and yellowish red very hard sandy light clay with coarse moderate angular blocky structure. Few roots.



* Depth to top of clay varies from 25 to 50 cm.

Classification: Eutrophic, Mottled-Mesonatric, Yellow Sodosol; medium, non-gravelly, sandy/clayey, deep



Summary of Properties

- Drainage:** Moderately well to imperfectly drained. Water is likely to perch on top of the poorly structured clay for a week to several weeks.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data, but delving has improved cation status of near surface soil. Levels of tested nutrient elements are adequate for pastures, although trace element concentrations are marginal- tissue testing required for confirmation.
- pH:** Slightly acidic at the surface, alkaline in the subsoil.
- Rooting depth:** 75 cm in sampling pit, with a very few roots to 120 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured clay restricts root growth with low root densities inside the clay columns.
 - Chemical:** High sodicity below 75 cm limits root growth.
- Waterholding capacity:** Approximately 90-110 mm total available water in potential rootzone.
- Seedling emergence:** Good. The clay spread at the surface through the delving process has improved the surface condition and reduced water repellence.
- Workability:** Good.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderate if surface vegetation cover is removed and the surface is allowed to dry out.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	NO ₃ + NH ₄ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	React Fe mg/kg	Ext Al 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	6.0	5.0	0	0.05	0.42	14	1.28	3	22	145	5.2	546	0.7	0.9	0.5	132	4.8	0.9	4.4	2.57	1.31	0.15	0.37	3.4
45-50	6.5	5.2	0	0.02	0.24	7	0.25	2	7	20	2.5	157	0.9	0.4	2.0	77	2.5	0.8	0.7	0.41	0.18	0.10	0.04	13.5
50-75	7.6	6.4	0	0.15	0.90	62	0.64	2	2	143	14.6	878	0	2.8	1.9	89	4.5	0.8	18.5	5.43	9.22	3.41	0.43	18.4
75-120	8.4	7.3	0	0.27	1.54	155	0.16	2	2	188	53.7	294	0	8.5	2.3	37	3.7	0.9	18.6	3.16	9.84	5.14	0.49	27.6
20-45 *	7.5	6.3	0	0.15	1.06	63	0.59	2	3	109	28.5	620	0	3.2	0.2	50	2.3	0.3	18.7	5.81	9.26	3.26	0.34	17.5
20-45 **	6.1	4.8	0	0.06	0.86	19	1.77	5	22	36	11.4	494	3.2	0.7	1.2	157	7.0	2.0	4.2	2.53	0.98	0.57	0.10	13.5

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.

* Clay lumps sampled from within the zone altered by delving.

** Sand sampled from within the zone altered by delving.

Further information: [DEWNR Soil and Land Program](#)

