

## THICK SAND OVER CLAY

**General Description:** *Grey sand with a thick bleached subsurface layer, over a coarsely structured brownish clay subsoil*

**Landform:** Gently undulating dunefield.

**Substrate:** Tertiary age sandy clay.

**Vegetation:**

<b>Type Site:</b>	Site No.:	SE906	1:50,000 mapsheet:	7024-4 (Keppoch)
	Hundred:	Beamma	Easting:	475250
	Section:	28	Northing:	5947140
	Sampling date:	28/09/06	Annual rainfall:	545 mm average

Swale. Soft surface with no stones. Delved but clay fragments in surface soil only visible sign.

### Soil Description:

Depth (cm)	Description
0-10	Very dark greyish brown friable clayey/loamy sand with 10-20% delved clay fragments. Abundant roots. Clear to:
10-23	Light yellowish brown (bleached) friable sand with spots of organic matter and clay. Roots common. Gradual to:
23-53	Very pale brown (bleached) firm sand with clayey lamellae. Few roots. Sharp to:
53+	Brownish yellow and red hard sandy light clay with coarse structure. Very few roots.



**Classification:** Bleached, Eutrophic\*, Yellow Chromosol; thick, non-gravelly, sandy / clayey, deep  
\* assumes no deep subsoil carbonate



## Summary of Properties

**Drainage:** Moderately well drained. Water is likely to perch on top of the clay subsoil for up to a week following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is low (as indicated by the exchangeable cation data) due to low clay content and thickness of the topsoil layers. Surface fertility may have been slightly improved by delving. Test data for the surface soil indicate that phosphorus, potassium and sulphur levels are marginal. Tissue testing is required to check trace element concentrations, as soil levels are low.

**pH:** Slightly acidic at the surface, neutral in the upper subsoil.

**Rooting depth:** Few roots in subsoil clay (in sampling pit)

### Barriers to root growth:

**Physical:** The hard and poorly structured subsoil clay is a significant barrier. Roots are largely confined to the aggregate surfaces.

**Chemical:** Root growth is restricted by the very low fertility of the bleached subsurface layers. There are no toxicities in the upper subsoil, but there is no data for the lower subsoil.

**Waterholding capacity:** Approximately 40 mm total available water to 60 cm.

**Seedling emergence:** Satisfactory provided that delving has controlled water repellence.

**Workability:** Good. Sandy soils are easily worked.

### Erosion Potential:

**Water:** Low.

**Wind:** Moderate.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	NO <sub>3</sub> + NH <sub>4</sub> mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	React Fe 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	
0-10	6.4	5.8	0.24	0.07	0.62	35	1.96	21	15	110	3.5	318	0.6	0.49	76	4.62	1.11	6.3	4.78	1.04	0.26	0.24	4.1
10-23	6.5	5.9	0.24	0.02	0.25	11	0.33	2	2	15	1.1	153	0.2	0.08	36	0.39	0.44	1.7	1.38	0.19	0.07	0.03	na
23-53	6.6	6.2	0.22	0.02	0.23	10	0.17	7	2	16	2.0	179	0.2	0.19	45	0.29	0.12	0.9	0.71	0.12	0.07	0.03	na
53+	6.8	6.1	0.24	0.06	0.38	28	0.43	2	2	128	6.3	782	1.1	0.23	27	0.27	0.62	9.5	4.14	4.62	0.36	0.37	3.8

**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.

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

