

**SAND OVER BROWN OR YELLOW ACIDIC CLAY**

**General Description:** *Medium to thick sand with a bleached subsurface layer, often including a band of ironstone gravel, overlying a yellow to brown acidic sandy light clay grading to weak sandstone*

**Landform:** Rolling low hills

**Substrate:** Massive weakly cemented sandstone of Permian age glacial valleys.

**Vegetation:**

<b>Type Site:</b>	Site No.:	CH177B	1:50,000 mapsheet:	6626-4 (Encounter)
	Hundred:	Encounter Bay	Easting:	276520
	Section:		Northing:	6066200
	Sampling date:	15/01/13	Annual rainfall:	705 mm average

Upper slope to crest of low hill, 4% slope. Soft surface. Site is untreated compared with site CH177A, which has been delved, limed and spaded.

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark greyish brown loose single grain loamy sand. Clear to:
15-25	Pale grey (bleached) loose single grain sand. Abrupt to:
25-50	Yellow hard massive sandy light clay with dark red inclusions of highly weathered ironstone nodules. Clear to:
50-75	Brownish yellow firm massive coarse sandy light clay with abundant dark red inclusions of highly weathered ironstone. Gradual to:
75-100	Yellow and red hard massive clayey coarse sand (decomposing sandstone).

**Classification:** Bleached, Mesotrophic, Yellow Kurosol; medium, non-gravelly, sandy / clayey, moderate



**Summary of Properties**

**Drainage:** Well drained. The soil is unlikely to remain saturated for more than a day or so following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is low due to the low clay content of the surface soil, and low nutrient retention capacity of the clayey subsoil (CEC is less than 10cmol(+)/kg). At the sampling site, data indicate that sulphur, manganese and potassium are marginally low, but phosphorus levels are relatively high (although PBI is low).

**pH:** Strongly acidic throughout.

**Rooting depth:** Most root growth is in the sandy surface layers and upper part of clayey subsoil (i.e. to 50 cm).

**Barriers to root growth:**

**Physical:** The massive sandy clay to clayey sand deep subsoil presents a moderate barrier to roots.

**Chemical:** Aluminium is at toxic levels throughout, due to low pH. Low nutrient status and retention capacity limit root volume.

**Waterholding capacity:** Approximately 60 mm in the potential rootzone.

**Seedling emergence:** Fair to satisfactory, depending on severity of water repellence.

**Workability:** Loose sandy surface is easily worked.

**Erosion Potential:**

**Water:** Moderate low, being near top of slope. However, loose topsoil and relatively shallow depth to clay increase susceptibility.

**Wind:** Moderately low to moderate due to loose sandy surface.

**Laboratory Data**

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	Ext. Al mg/kg	EC 1:5 dS/m	Org.C %	NO <sub>3</sub> mg/kg	Avail. P mg/kg	PBI	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-15	5.5	4.5	2.36	0.072	2.92	22	35	12	92	6.3	0.3	1.92	57	3.56	2.99	4	2.84	0.7	0.23	0.07	2
15-25	5.4	4.4	2.74	0.018	0.54	4	7	3	50	2.8	0.2	0.31	31	0.37	0.31	1	0.64	0.2	0.13	0.02	na
25-50	5.4	4.4	6.41	0.033	0.68	3	51	69	181	4.7	0.5	0.37	68	0.72	0.19	5	2.86	1.9	0.46	0.12	2
50-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Note:** Trace elements in 0-15 cm layer (shaded) analysed using EDTA.

CEC (exchangeable cation capacity) is 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.

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

