WET BLEACHED SAND OVER DISCONTINUOUS CALCRETE

General Description: *Medium to thick bleached sand containing a discontinuous calcrete pan (induced by fluctuating high watertable), over a buried sand over sandy clay profile.*

Landform: Flat corridor plains between ancient beach ridges.

Substrate: Lagoonal clays and sands of the Padthaway Formation.

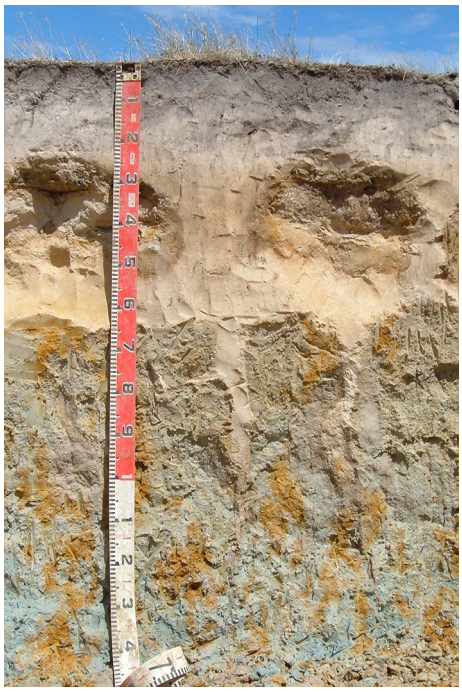
Vegetation: -

Type Site:

Site No.:	SE136	1:50,000 mapsheet:	6924-1 (Marcollat)
Hundred:	Marcollat	Easting:	439110
Section:	32	Northing:	5940400
Sampling date:	15/02/06	Annual rainfall:	570 mm average

Level plain. Soft surface with no stones

Soil Description:



Depth (cm)	*Description*
0-5	Black loose weakly granular loamy coarse sand. Clear to:
5-10	Pale brown soft single grain loamy coarse sand. Clear to:
10-25	Light yellowish brown soft single grain coarse sand. Clear to:
25-31	Pale brown friable massive coarse sandy clay loam. Sharp to:
31-43	Discontinuous pan of very hard laminar calcrete in discrete rounded accumulations capped by 2 cm of extremely hard travertine. Accumulations separated by pale sand. Sharp to:
43-47	Light yellowish brown friable massive calcareous coarse sandy loam. Clear to:
47-63	Very pale brown soft single grain coarse sand. Sharp to:
63-81	Light grey and brownish yellow mottled firm coarse sandy clay loam with strong very coarse columnar structure. Diffuse to:
81-120	Light grey and yellowish brown mottled firm coarse sandy light medium clay with strong very coarse columnar structure. Diffuse to:
120-150	Greenish grey and strong brown mottled hard coarsely structured sandy light medium clay.

Classification: Chromosolic, Salic Hydrosol; medium, non-gravelly, sandy / clay loamy, shallow

Summary of Properties

Drainage: Poorly drained due to seasonal inundation and shallow seasonal watertable. The profile is likely to saturate for several months in most years. The soil itself is highly permeable to 63 cm, and slowly to moderately permeable below.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. This is due to low clay content of the topsoil. Test data indicate deficiencies of sulphur and copper, with marginal levels of phosphorus and potassium.

pH: Neutral at the surface, alkaline in the subsoil.

Rooting depth: There are some roots to 63 cm, but most growth is in the upper 30 cm.

Barriers to root growth:

Physical: The dense subsoil imposes a significant barrier to root penetration below 63 cm.

Chemical: Low nutrient availability is the most significant limitation. High chloride below 25 cm affects sensitive species.

Waterholding capacity: Approximately 25 mm in the rootzone

Seedling emergence: Satisfactory.

Workability: Good. Sandy surface is easily worked over a range of moisture conditions.

Erosion Potential:

Water: Low.

Wind: Moderately low to moderate.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	React Fe mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-5	7.1	6.2	-	0.07	-	44	2.36	16	100	1.0	1.0	131	0.10	12	1.03	1.61	5.9	4.48	1.27	0.04	0.09	0.7
5-10	6.7	6.1	-	0.05	-	28	0.76	8	41	2.4	0.7	112	0.06	23	0.27	0.53	2.7	1.94	0.60	0.05	0.07	1.8
10-25	6.6	6.5	-	0.15	-	179	0.12	14	20	8.6	0.4	81	0.14	10	0.04	0.05	1.4	0.99	0.32	0.04	0.06	2.6
25-31	8.4	7.6	-	0.57	-	680	0.19	34	123	45.7	2.8	275	0.29	30	0.06	0.16	6.4	4.19	1.87	0.12	0.17	1.8
31-43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43-47	9.0	8.0	-	0.44	-	531	0.07	3	125	30.5	2.2	327	0.12	15	0.02	0.03	6.6	5.27	1.09	0.07	0.14	1.0
47-63	8.1	7.4	-	0.22	-	243	0.05	2	34	10.0	0.4	92	0.16	6	0.01	0.03	1.1	0.76	0.19	0.06	0.07	5.6
63-81	8.5	7.6	-	0.46	-	789	<0.05	2	266	51.0	5.2	279	0.14	4	0.02	0.03	7.9	3.58	3.31	0.56	0.47	7.0
81-120	8.4	7.6	-	0.43	-	982	<0.05	2	314	51.1	6.4	368	0.10	2	0.01	0.04	9.7	4.32	4.06	0.75	0.59	7.7
120-150	8.2	7.5	-	0.45	-	787	<0.05	2	616	47.2	5.5	352	0.10	2	0.01	0.09	10.9	4.74	4.71	0.81	0.67	7.4

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