

## WET THICK SAND OVER SANDY CLAY

**General Description:** *Thick grey sand with a bleached subsurface layer overlying a very coarsely columnar grey and brown mottled sandy clay loam to sandy clay – subject to seasonal watertable saturation*

**Landform:** Flat corridor plains between ancient beach ridges.

**Substrate:** Lagoonal clays and sands of the Padthaway Formation.

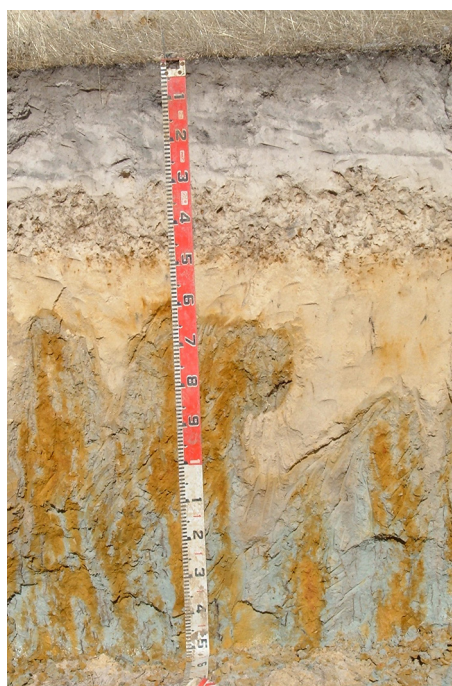
**Vegetation:** -

|                   |                |           |                    |                    |
|-------------------|----------------|-----------|--------------------|--------------------|
| <b>Type Site:</b> | Site No.:      | SE137     | 1:50,000 mapsheet: | 6924-1 (Marcollat) |
|                   | Hundred:       | Marcollat | Easting:           | 439710             |
|                   | Section:       | 32        | Northing:          | 5940300            |
|                   | Sampling date: | 15/02/06  | Annual rainfall:   | 570 mm average     |

Level plain. Soft surface with no stones

### Soil Description:

| Depth (cm) | Description   |
|------------|---|
| 0-5        | Dark grey loose weakly granular loamy coarse sand. Clear to:  |
| 5-10       | Dark brownish grey soft single grain loamy sand. Abrupt to:   |
| 10-20      | Light greyish brown soft single grain sand. Clear to:   |
| 20-30      | White soft single grain sand. Clear to:   |
| 30-50      | Very pale brown soft single grain sand with 10-20% nodular and soft ironstone segregations. Clear to:             |
| 50-63      | Light yellowish brown soft single grain sand. Clear to:   |
| 63-66      | Strong brown soft massive coarse sandy loam. Gradual to:  |
| 66-110     | Strong brown and grey mottled firm coarse sandy clay loam with strong very coarse columnar structure. Diffuse to: |
| 110-150    | Light grey and strong brown mottled firm light medium clay with strong very coarse columnar structure.            |



**Classification:** Sodosolic, Salic Hydrosol; medium, non-gravelly, sandy / clayey, very deep



## Summary of Properties

- Drainage:** Poorly drained due to seasonal inundation and shallow seasonal watertable. The profile is likely to be saturated for several months in most years. The soil itself is highly permeable to 66 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 potassium and copper. This is a high leaching soil which requires surface spread clay for long term improvement in fertility status.
- pH:** Neutral at the surface, varying from slightly acidic to slightly alkaline with depth.
- 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 deeper root penetration.
  - Chemical:** Low nutrient availability is the most significant limitation. High chloride levels in the subsoil affect sensitive species.
- Waterholding capacity:** Approximately 35 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.

## Laboratory Data

| Depth<br>cm | pH<br>H <sub>2</sub> O | pH<br>CaCl <sub>2</sub> | CO <sub>3</sub><br>% | EC1:5<br>dS/m | ECe<br>dS/m | Cl<br>mg/kg | Org.C<br>% | Avail.<br>P<br>mg/kg | Avail.<br>K<br>mg/kg | SO <sub>4</sub> -S<br>mg/kg | Boron<br>mg/kg | React<br>Fe<br>mg/kg | Trace Elements mg/kg<br>(DTPA) |    |      |      | Sum<br>cations<br>cmol<br>(+)/kg | Exchangeable Cations<br>cmol(+)/kg |      |      |      | Est.<br>ESP |
|-------------|------------------------|-------------------------|----------------------|---------------|-------------|-------------|------------|----------------------|----------------------|-----------------------------|----------------|----------------------|--------------------------------|----|------|------|----------------------------------|------------------------------------|------|------|------|-------------|
|             |                        |                         |                      |               |             |             |            |                      |                      |                             |                |                      | Cu                             | Fe | Mn   | Zn   |                                  | Ca                                 | Mg   | Na   | K    |             |
| 0-5         | 7.1                    | 6.4                     | -                    | 0.13          | -           | 97          | 1.81       | 26                   | 64                   | 5.9                         | 1.2            | 325                  | 0.26                           | 44 | 1.13 | 1.36 | 4.3                              | 2.83                               | 1.33 | 0.04 | 0.08 | 1.0         |
| 5-10        | 7.3                    | 6.6                     | -                    | 0.08          | -           | 50          | 0.57       | 40                   | 26                   | 4.2                         | 0.7            | 330                  | 0.16                           | 40 | 0.09 | 0.15 | 2.2                              | 1.35                               | 0.68 | 0.07 | 0.08 | 3.3         |
| 10-20       | 7.6                    | 6.7                     | -                    | 0.04          | -           | 12          | 0.21       | 7                    | 24                   | 1.6                         | 0.4            | 115                  | 0.21                           | 16 | 0.02 | 0.06 | 1.3                              | 0.84                               | 0.31 | 0.07 | 0.07 | 5.3         |
| 20-30       | 8.4                    | 7.2                     | -                    | 0.05          | -           | 22          | 0.05       | 3                    | 17                   | 3.4                         | 0.4            | 53                   | 0.11                           | 5  | 0.02 | 0.05 | 0.9                              | 0.62                               | 0.19 | 0.07 | 0.06 | 7.6         |
| 30-50       | 7.9                    | 7.2                     | -                    | 0.11          | -           | 85          | 0.13       | 4                    | 51                   | 14.5                        | 1.2            | 419                  | 0.18                           | 5  | 0.02 | 0.05 | 2.1                              | 1.16                               | 0.67 | 0.16 | 0.10 | 7.5         |
| 50-63       | 6.7                    | 5.9                     | -                    | 0.24          | -           | 290         | 0.05       | 2                    | 21                   | 13.1                        | 0.4            | 1184                 | 0.11                           | 4  | 0.03 | 0.03 | 1.0                              | 0.62                               | 0.23 | 0.06 | 0.07 | 6.3         |
| 63-66       | 8.8                    | 7.6                     | -                    | 0.31          | -           | 369         | 0.13       | 2                    | 71                   | 21.6                        | 1.5            | 425                  | 0.12                           | 4  | 0.01 | 0.01 | 1.8                              | 0.74                               | 0.81 | 0.11 | 0.10 | 6.3         |
| 66-110      | 7.8                    | 7.1                     | -                    | 0.64          | -           | 804         | 0.05       | 2                    | 160                  | 61.8                        | 2.6            | 272                  | 0.12                           | 2  | 0.01 | 0.01 | 4.6                              | 1.47                               | 2.23 | 0.68 | 0.24 | 14.6        |
| 110-150     | 7.6                    | 7.0                     | -                    | 0.72          | -           | 1134        | 0.08       | 2                    | 143                  | 74.8                        | 2.2            | 444                  | 0.06                           | 4  | 0.01 | 0.02 | 6.4                              | 2.13                               | 3.35 | 0.62 | 0.29 | 9.8         |

**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](#)

