

DEEP SAND

General Description: *Deep sand overlying calcrete at variable depth*

Landform: Gently undulating plains and moderate slopes (Murray River cliffs)

Substrate: Calcrete capped sand.

Vegetation: Mallee



| | | | | |
|-------------------|----------------|------------|--------------------|---------------------|
| Type Site: | Site No.: | MP010 | 1:50,000 mapsheet: | 6828-3 (Caurnamont) |
| | Hundred: | Ridley | Easting: | 368500 |
| | Section: | 18 | Northing: | 6138900 |
| | Sampling date: | 08/12/1995 | Annual rainfall: | 295 mm average |

Lower slope of river cliff, 3% slope. Loose surface, no stone.

Soil Description:

| Depth (cm) | Description |
|------------|--|
| 0-20 | Dark reddish brown loose loamy sand. Gradual to: |
| 20-45 | Reddish brown loose loamy sand. Clear to: |
| 45-90 | Yellowish red loose calcareous sand. Abrupt to: |
| 90-130 | Calcrete pan. Abrupt to: |
| 130-150 | Reddish yellow soft very highly calcareous loamy sand. Gradual to: |
| 150-200 | Yellowish red soft highly calcareous sand. |



Classification: Calcareous, Petrocalcic, Red-Orthic Tenosol; thick, non-gravelly, sandy / sandy, moderate



Summary of Properties

- Drainage:** Rapidly drained. The soil is unlikely to remain wet for more than a few hours following heavy or prolonged rainfall or irrigation.
- Fertility:** Inherent fertility is low as indicated by the exchangeable cation data and the sandy nature of the profile. Although levels of all measured nutrient elements are satisfactory at the sampling site, nutrient retention capacity is low. Organic carbon levels are also low.
- pH:** Neutral at the surface, alkaline with depth.
- Rooting depth:** 90 cm in pit, but most roots are in the upper 45 cm.
- Barriers to root growth:**
- Physical:** The calcrete imposes a permanent barrier to root growth.
 - Chemical:** High pH and fine carbonate are restrictive to roots of lime sensitive crops such as potatoes.
- Waterholding capacity:** About 90 mm total available and 55 mm readily available waterholding capacity.
- Seedling emergence:** Good.
- Workability:** Good.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately high.

Laboratory Data

| Depth cm | pH H ₂ O | pH CaCl ₂ | CaCO ₃ % | EC 1:5 dS/m | ECe dS/m | Org.C % | Avail. P mg/kg | Avail. K mg/kg | SO ₄ -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 | |
| Paddock | 6.6 | 6.0 | - | 0.12 | 1.52 | 0.5 | 45 | 250 | 11 | 0.7 | 1.6 | 19 | 15 | 3.9 | 4.6 | 2.89 | 1.21 | 0.36 | 0.31 | 7.7 |
| 0-20 | 6.8 | 6.2 | - | 0.16 | 1.89 | 0.6 | 55 | 211 | 14 | 0.8 | 2.2 | 14 | 7.5 | 4.9 | 4.6 | 2.57 | 1.53 | 0.28 | 0.27 | 6.2 |
| 20-45 | 8.1 | 7.0 | <0.1 | 0.09 | 0.76 | 0.2 | 40 | 246 | 10 | 0.5 | 0.22 | 3.2 | 2.9 | 0.21 | 5.0 | 3.05 | 1.08 | 0.56 | 0.41 | 11.2 |
| 45-90 | 9.3 | 8.4 | 2.0 | 0.14 | 0.93 | 0.1 | 16 | 149 | 14 | 0.5 | 0.15 | 1.6 | 0.53 | 0.18 | 4.6 | 3.69 | 1.31 | 0.49 | 0.22 | 10.8 |
| 90-130 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 130-150 | 9.3 | 8.3 | 13.8 | 0.15 | 1.35 | 0.1 | 4 | 100 | 13 | 0.6 | 0.17 | 2.0 | 1.5 | 0.18 | 3.5 | 3.20 | 1.24 | 0.38 | 0.11 | 11.1 |
| 150-200 | 9.3 | 8.4 | 5.9 | 0.14 | 1.05 | <0.1 | <4 | 106 | 11 | 0.7 | 0.13 | 1.8 | 0.8 | 0.38 | 3.4 | 3.13 | 1.15 | 0.29 | 0.13 | 8.4 |

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.
CEC (cation exchange 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](#)

