# GRADATIONAL LOAMY SAND

***General Description:*** *Red loamy sand to sandy loam becoming more clayey and highly calcareous with depth*

**Landform:** Undulating rises.

**Substrate:** Very highly calcareous medium textured Woorinen Formation deposits.

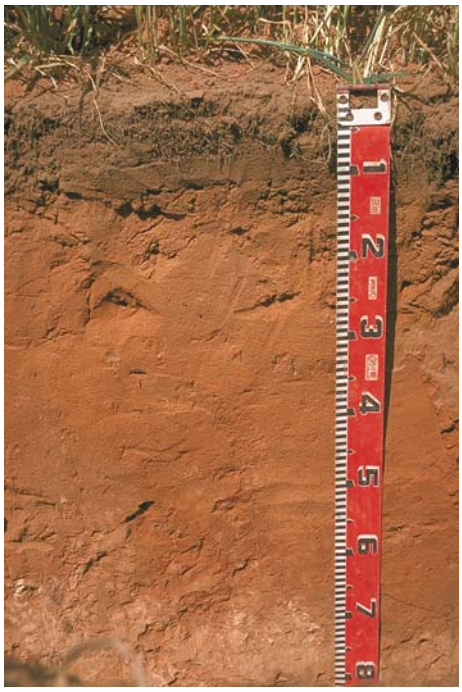
**Vegetation:** Mallee scrub.

**Type Site:** Site No.: MM150

| | | | |
|---|---|---|---|
| 1:50,000 sheet: | 6628-3 (Caurnamont) | Hundred: | Younghusband |
| Annual rainfall: | 300 mm | Sampling date: | 03/10/01 |
| Landform: | Lower slope of an undulating rise, 2% slope | | |
| Surface: | Soft with minor (less than 2%) calcrete stone to 200 mm | | |

**Soil Description:**

| *Depth (cm)* | *Description* |
|---|---|
| 0-10 | Dark reddish brown soft single grain loamy sand. Clear to: |
| 10-28 | Reddish yellow soft massive loamy sand. Clear to: |
| 28-45 | Yellowish red friable massive sandy loam. Diffuse to: |
| 45-65 | Yellowish red firm massive sandy loam. Gradual to: |
| 65-90 | Yellowish red hard massive very highly calcareous light sandy clay loam with 20-50% fine and 2-10% nodular (6-20mm) carbonate segregations. |



**Classification:** Haplic, Calcic, Red Kandosol; medium, non-gravelly, sandy / loamy, deep

## *Summary of Properties*

**Drainage:** Well drained. The soil rarely remains wet for more than a day or so following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is moderately low due to the relatively low clay content of the surface soil. Trace element and sulphur deficiencies are likely. Organic carbon levels are satisfactory for this environment.

**pH:** Slightly alkaline at the surface, alkaline with depth.

**Rooting depth:** 90 cm in the pit, but few roots below 65 cm.

**Barriers to root growth:**

**Physical:** There are no physical barriers.

**Chemical:** There are no chemical barriers.

**Water holding capacity:** Approximately 85 mm in the root zone.

**Seedling emergence:** Satisfactory, although water repellence may be a problem in some seasons.

**Workability:** The soft surface is easily worked.

**Erosion Potential**

**Water:** Low.

**Wind:** Moderately low.

## *Laboratory Data*

| Depth cm | pH $H_2O$ | pH $CaC1_2$ | $CO_3$ % | EC1:5 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 | |
| 0-10 | 8.1 | 7.4 | 0.1 | 0.06 | - | 1.26 | 15 | 207 | 2.5 | 1.0 | - | - | - | - | 5.8 | 4.38 | 0.85 | 0.09 | 0.48 | 1.6 |
| 10-28 | 7.6 | 7.2 | 0.1 | 0.04 | - | 0.24 | 3 | 156 | 1.9 | 0.6 | - | - | - | - | 5.4 | 3.96 | 0.97 | 0.10 | 0.39 | 1.8 |
| 28-45 | 7.6 | 7.2 | 0.1 | 0.03 | - | 0.16 | 2 | 137 | 1.6 | 0.5 | - | - | - | - | 6.7 | 5.00 | 1.21 | 0.12 | 0.35 | 1.8 |
| 45-65 | 8.1 | 7.5 | 0.1 | 0.05 | - | 0.13 | 2 | 105 | 1.5 | 0.6 | - | - | - | - | 7.3 | 5.24 | 1.64 | 0.12 | 0.26 | 1.7 |
| 65-90 | 8.8 | 8.0 | 5.6 | 0.10 | - | 0.19 | 2 | 131 | 1.9 | 0.7 | - | - | - | - | 13.0 | 9.41 | 3.09 | 0.17 | 0.31 | 1.3 |

**Note**: 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.