

GREY CRACKING CLAY

General Description: *Dark grey seasonally cracking clay with increasing carbonate segregations at depth*

Landform: Flat plains

Substrate: Tertiary age clay.

Vegetation:

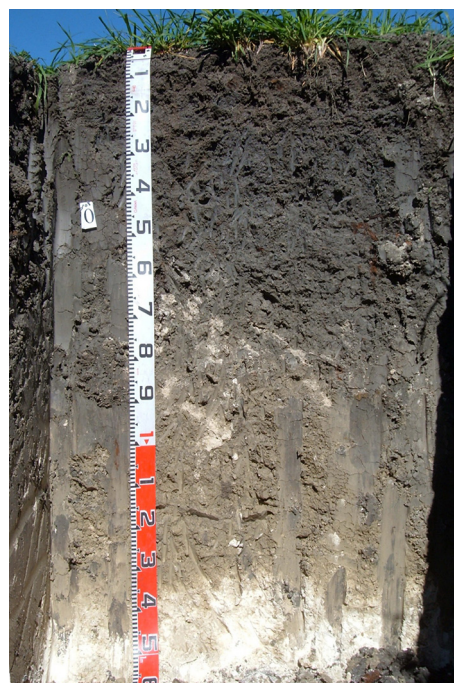


| | | | | |
|-------------------|----------------|-------------------|--------------------|-----------------|
| Type Site: | Site No.: | SE165A | 1:50,000 mapsheet: | 7124-4 (Goroke) |
| | Hundred: | State of Victoria | Easting: | 511110 |
| | Section: | - | Northing: | 5936030 |
| | Sampling date: | 25/08/2007 | Annual rainfall: | 545 mm average |

Flat plain. Seasonally cracking, hard setting surface with no stones. Non irrigated pasture.

Soil Description:

| Depth (cm) | Description |
|------------|--|
| 0-14 | Dark brown friable slightly calcareous light medium clay with weak subangular blocky to granular structure. Clear to: |
| 14-35 | Dark grey friable light clay with moderate fine subangular blocky structure. Gradual to: |
| 35-60 | Grey firm light medium clay with strong coarse lenticular structure, breaking to moderate medium subangular blocky. Diffuse to: |
| 60-100 | Grey hard moderately calcareous light clay with strong very coarse lenticular structure, breaking to weak coarse angular blocky, and with 10-20% soft calcareous segregations. Diffuse to: |
| 100-140 | Light grey hard slightly calcareous light clay with strong very coarse lenticular structure, breaking to weak coarse angular blocky, and with minor soft calcareous segregations. Abrupt to: |
| 140-160 | More than 90% soft carbonate. |



Classification: Epihypersodic-Endocalcareous, Massive, Grey Vertosol; non-gravelly, fine / fine, deep



Summary of Properties

- Drainage:** Imperfectly drained. Profile may remain saturated for several weeks at a time following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is very high, as indicated by the exchangeable cation data. This is due to the high clay content of the surface layers. Laboratory data indicate satisfactory levels of all tested nutrients although phosphorus and nitrogen responses are possible.
- pH:** Alkaline at the surface and strongly alkaline with depth.
- Rooting depth:** 60 cm in sampling pit, with a few deeper roots.
- Barriers to root growth:**
- Physical:** The lenticular structured clay from 35 cm confines most root growth to aggregate surfaces, resulting in reduced efficiency of water and nutrient exploitation.
 - Chemical:** High pH and sodicity from 60 cm severely restrict deeper root growth.
- Waterholding capacity:** Approximately 100 mm in the potential rootzone.
- Seedling emergence:** Satisfactory to fair, depending on degree to which surface seals over.
- Workability:** Fair. Clayey surface becomes sticky when wet.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Low.

Laboratory Data

| Depth cm | pH H ₂ O | pH CaCl ₂ | CO ₃ % | EC1:5 dS/m | ECe dS/m | Cl mg/kg | Org.C % | NO ₃ + NH ₄ mg/kg | Avail. P mg/kg | Avail. K mg/kg | SO ₄ -S mg/kg | React Fe mg/kg | Boron mg/kg | Trace Elements mg/kg (EDTA) | | | | Sum cations cmol (+)/kg | Exchangeable Cations cmol(+)/kg | | | | Est. ESP | |
|-------------|------------------------|-------------------------|----------------------|---------------|-------------|-------------|------------|---|----------------------|----------------------|-----------------------------|----------------------|----------------|--------------------------------|----|------|------|----------------------------------|------------------------------------|------|------|------|-------------|---|
| | | | | | | | | | | | | | | Cu | Fe | Mn | Zn | | Ca | Mg | Na | K | | |
| 0-14 | 8.7 | 7.9 | 1 | 0.12 | 0.42 | 10 | 1.74 | 9 | 39 | 635 | 3.1 | 693 | 2.7 | 1.59 | 55 | 58.1 | 1.81 | 33.1 | 25.5 | 5.19 | 0.72 | 1.69 | 2.2 | |
| 14-35 | 9.2 | 8.1 | 0 | 0.23 | 0.81 | 60 | 0.55 | - | 4 | 363 | 6.9 | 577 | - | - | - | - | - | 37.6 | 20.1 | 12.3 | 3.97 | 1.20 | 10.6 | |
| 35-60 | 9.3 | 8.2 | 0 | 0.30 | 1.41 | 210 | 0.50 | - | 3 | 515 | 26.8 | 585 | - | - | - | - | - | 41.8 | 18.0 | 13.7 | 8.63 | 1.47 | 20.7 | |
| 60-100 | 9.7 | 8.7 | 6 | 0.55 | 2.37 | 353 | 0.26 | - | 2 | 577 | 71.5 | 517 | - | - | - | - | - | 45.3 | 13.5 | 14.7 | 15.5 | 1.60 | 34.2 | |
| 100-140 | 9.6 | 8.8 | 7 | 0.76 | 2.52 | 521 | 0.14 | - | 2 | 560 | 81.2 | 443 | - | - | - | - | - | - | - | - | - | - | - | |
| 140-160 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

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](#)

