

## CALCAREOUS CLAY LOAM OVER MARL

**General Description:** *Calcareous highly organic dark coloured clay loam to clay, becoming more clayey and calcareous at depth with variable rubble, over marl*

**Landform:** Level plain.

**Substrate:** Marl with weak calcrete capping.

**Vegetation:**



**Type Site:** Site No.: SE055

1:50,000 sheet: 6922-1 (Millicent)  
 Annual rainfall: 750 mm  
 Landform: Flat plain, 0% slope  
 Surface: Firm with no stones

Hundred: Mt Muirhead  
 Sampling date: 15/04/96

### Soil Description:

Depth (cm)	Description
0-2	Friable highly organic clay loam. Abrupt to:
2-12	Black friable massive clay loam. Clear to:
12-18	Very dark grey firm massive highly calcareous light clay with 10-20% shell fragments (6-20 mm). Clear to:
18-24	Black hard massive highly calcareous light medium clay with 20-50% shell fragments (2-20 mm). Sharp to:
24-55	Grey friable massive highly calcareous light medium clay with 20-50% shell fragments (2-20 mm). Gradual to:
55-80	Greyish brown firm massive highly calcareous light clay with 20-50% shell fragments (2-20 mm). Gradual to:
80-110	Dark brown and greyish brown firm massive highly calcareous light clay with 20-50% shell fragments (2-20 mm). Abrupt to:
110-123	Weak calcrete pan, light clay texture. Abrupt to:
123-190	Light grey and dark grey firm (wet) massive highly calcareous light clay.
190-200	White clay (marl).
200-	Marl with shell fragments.



**Classification:** Hypervescent, Marly, Hypercalcic Calcarosol; medium, non-gravelly, clay loamy/clayey, deep

## Summary of Properties

**Drainage** Moderately well drained. The soil rarely remains wet for more than a week at a time.

**Fertility** Inherent fertility is very high. The surface soil has very high nutrient retention capacity due to its organic matter and clay content. There are no nutrient deficiencies at the sampling site (nitrogen not tested).

**pH** Neutral at the surface, alkaline with depth.

**Rooting depth** 190 cm in pit, but few roots below 24 cm.

### Barriers to root growth

**Physical:** There are no physical barriers above the weak calcrete pan at 110 cm. This may restrict tree roots, but won't affect crop and pasture plants (except lucerne).

**Chemical:** High carbonate concentrations in a clayey matrix from 24 cm and high sodicity and marginally high salinity from 55 cm impede root growth.

**Water holding capacity** Approximately 150 mm in the root zone.

**Seedling emergence:** Satisfactory.

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

### Erosion Potential

**Water:** Low.

**Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	7.1	6.9	5.3	0.60	1.01	31.1	58	682	82	1.7	9.37	96	7.91	5.74	111.2	109.4	9.43	0.65	1.54	0.6
0-2	6.8	6.7	0.0	1.02	1.53	34.3	136	1227	203	6.0	-	-	-	-	86.4	82.3	10.57	0.85	2.78	1.0
2-12	7.3	7.0	14.3	0.49	1.38	20.7	23	533	67	4.1	-	-	-	-	73.7	63.6	5.11	0.52	1.24	0.7
12-18	7.8	7.6	19.0	0.54	2.00	8.1	6	351	92	2.8	-	-	-	-	38.4	32.2	2.97	0.60	0.56	1.6
18-24	8.1	7.8	22.7	0.88	3.06	4.7	<4	345	245	1.8	-	-	-	-	25.7	23.8	3.08	0.82	0.58	3.2
24-55	8.6	8.3	57.3	1.51	6.87	0.2	<4	172	641	1.7	-	-	-	-	6.5	7.4	3.12	1.31	0.23	20.0
55-80	8.6	8.3	62.6	1.69	7.73	0.2	<4	192	768	1.2	-	-	-	-	5.4	6.2	3.41	1.42	0.33	26.1
80-110	8.3	8.2	55.2	3.53	8.23	0.1	<4	23	3253	1.2	-	-	-	-	8.6	7.9	5.47	2.42	0.35	28.2
110-123	8.7	8.4	65.3	1.83	7.79	0.1	<4	191	1001	0.9	-	-	-	-	5.1	4.8	3.06	1.25	0.24	24.4
123-190	8.5	8.3	69.3	1.92	7.91	0.2	<4	205	988	0.9	-	-	-	-	8.5	4.9	4.13	2.29	0.29	27.0
190-200	8.5	8.2	68.4	2.09	7.25	0.1	<4	166	970	0.8	-	-	-	-	6.9	6.5	3.91	2.07	0.31	29.9
200+	8.6	8.3	73.7	1.30	6.02	<0.1	<4	69	664	0.6	-	-	-	-	2.4	3.8	1.94	0.58	0.07	24.6

**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