

CALCAREOUS LOAM

General Description: *Calcareous red brown loam becoming more clayey and calcareous with depth (Class I carbonate layer), grading to a coarsely structured red clay*

- Landform:** Flats, gentle slopes and inter-dune swales
- Substrate:** Pleistocene age heavy clay with well developed coarse blocky structure
- Vegetation:** Mallee scrub



- Type Site:**
- | | | | |
|----------------|----------|--------------------|--------------------|
| Site No.: | CM062 | 1:50,000 mapsheet: | 6529-1 (Balaklava) |
| Hundred: | Hall | Easting: | 266550 |
| Section: | 254 | Northing: | 6219150 |
| Sampling date: | 23/08/95 | Annual rainfall: | 380 mm average |

Flat at edge of dunefield. Firm, stone free surface, 1% slope

Soil Description:

Depth (cm)	Description
0-6	Dark reddish brown moderately calcareous loam with strong granular structure and 2-10% quartzite gravel. Abrupt to:
6-12	Dark reddish brown moderately calcareous clay loam with strong polyhedral structure. Abrupt to:
12-30	Reddish brown highly calcareous light clay with moderate polyhedral structure. Clear to:
30-50	Reddish brown very highly calcareous light clay with moderate polyhedral structure, 10-20% soft carbonate segregations and 2-10% nodules. Gradual to:
50-75	Yellowish red very highly calcareous light clay with moderate polyhedral structure and 10-20% soft carbonate segregations. Diffuse to:
75-115	Red highly calcareous medium clay with moderate blocky structure and 10-20% soft carbonate segregations. Clear to:
115-160	Dark reddish brown highly calcareous medium heavy clay with strong coarse blocky structure and 2-10% soft carbonate and manganese segregations.



Classification: Endohypersodic, Pedal, Hypercalcic Calcarosol; thick, slightly gravelly, loamy/clayey, deep



Summary of Properties

Drainage:	Well drained. The soil is never likely to be saturated form more than a day or so.
Fertility:	Natural fertility is high (refer CEC values), and organic carbon levels are adequate, so nutrient retention is not a problem. All major nutrients are well supplied. Tissue testing needed to check trace element levels.
pH:	Neutral at the surface, strongly alkaline with depth.
Rooting depth:	115 cm in pit, but few roots below 75 cm.
Barriers to root growth:	
Physical:	Strong plough pan at 6 cm affects early root extension (could be broken up by a deep working).
Chemical:	High pH from 75 cm, and toxic levels of boron and exchangeable sodium from 115 cm prevent significant root growth below 75 cm.
Waterholding capacity:	Approximately 110 mm in rootzone (high).
Seedling emergence:	Good to fair. Surface will seal and set down hard if organic matter is not maintained.
Workability:	Good to fair (refer above).
Erosion Potential:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ 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	6.5	0	0.07	0.45	1.2	57	676	10	1.3	0.96	-	16.1	1.81	15.0	12.28	2.29	0.19	1.98	1.3
0-6	7.4	7.0	0.1	0.10	0.57	1.8	46	773	8	1.4	-	-	-	-	14.6	11.09	2.23	0.15	2.02	1.0
6-12	7.9	7.5	0.8	0.16	0.44	1.2	50	655	6	1.2	-	-	-	-	17.9	15.23	2.20	0.16	1.87	0.9
12-30	8.6	7.9	12.3	0.12	0.35	0.7	9	386	6	1.2	-	-	-	-	13.7	13.60	1.96	0.17	1.14	1.2
30-50	8.8	7.9	26.6	0.11	0.35	0.4	6	132	9	0.9	-	-	-	-	9.7	9.61	2.45	0.24	0.35	2.5
50-75	9.0	8.0	26.8	0.14	0.52	0.4	4	138	12	1.6	-	-	-	-	9.6	7.39	4.04	0.53	0.38	5.5
75-115	9.6	8.4	20.0	0.33	1.05	0.2	<4	257	27	8.5	-	-	-	-	9.3	3.28	5.94	2.24	0.62	24.1
115-160	9.7	8.7	2.9	0.61	1.23	0.1	<4	576	27	25.0	-	-	-	-	19.8	2.39	10.02	7.87	1.41	39.7

Note: Paddock sample bulked from 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](#)

