

BLACK CLAY OVER RUBBLE

General Description: *Black seasonally cracking clay, highly calcareous at shallow depth over marl*

Landform: Level plain.

Substrate: Highly calcareous clay (marl) of the Padthaway Formation.

Vegetation:



Type Site: Site No.: SE022

1:50,000 sheet:	6923-1 (Conmurra)	Hundred:	Conmurra
Annual rainfall:	650 mm	Sampling date:	11/05/94
Landform:	Flat plain, 0% slope		
Surface:	Hard setting and cracking surface. Annually inundated to a depth of 20 cm.		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Very dark grey firm sandy light medium clay with strong very coarse prismatic structure. Clear to:
5-7	Grey firm fine sandy light clay with strong very coarse prismatic structure. Clear to:
7-17	Very dark grey firm heavy clay with strong coarse prismatic structure and 10-20% carbonate nodules (20-60 mm). Sharp to:
17-55	Very dark grey hard heavy clay with strong coarse polyhedral structure and more than 50% carbonate fragments (60-200 mm). Clear to:
55-155	Olive grey firm massive calcareous medium clay with 10-20% fine carbonate segregations and 10-20% carbonate fragments (20-60 mm). Water table at 155 cm.



Classification: Sodic, Lithocalcic, Black Dermosol; thin, non-gravelly, clayey / clayey, moderate

Summary of Properties

Drainage	Imperfectly drained. The clayey texture and water table at depth maintain saturation for several weeks at a time during winter.
Fertility	Inherent fertility is high, as indicated by the exchangeable cation data. Phosphorus levels are low, but concentrations of other tested nutrient elements, as well as organic carbon, are high.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	55 cm in pit.
Barriers to root growth	
Physical:	The coarsely structured clay restricts root density, thereby reducing water use efficiency.
Chemical:	There are no chemical barriers.
Water holding capacity	Approximately 85 mm in the potential root zone.
Seedling emergence:	Fair. Emergence is reduced if surface dries during establishment.
Workability:	Fair to poor. The clayey surface becomes sticky and intractable when wet, and unworkable once inundated.

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	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	7.2	6.9	0.1	0.24	1.37	3.3	10	355	-	4.5	0.5	23	17.3	1.4	26.1	14.0	10.0	1.24	1.51	4.8
0-5	7.1	6.7	0	0.27	1.69	3.6	13	324	-	4.4	0.7	27	10.0	1.4	24.6	13.3	9.7	1.49	1.29	6.1
5-7	7.4	7.0	0.1	0.23	1.14	3.0	11	319	-	5.0	0.7	24	7.3	1.0	27.0	12.5	10.4	1.88	1.29	7.0
7-17	8.1	7.6	0.3	0.31	1.10	1.3	12	527	-	7.7	0.2	17	2.5	0.4	45.7	18.0	18.1	3.73	2.80	8.2
17-55	8.7	8.1	33.6	0.55	2.50	0.6	8	600	-	3.8	0.2	9	0.7	0.2	30.4	10.5	13.2	3.99	2.78	13.1
55-95	9.2	8.2	53.9	0.50	2.31	0.4	4	442	-	1.3	0.2	8	0.4	0.2	22.1	5.2	10.7	4.11	1.83	18.6
95-135	9.2	8.2	60.0	0.56	2.69	0.5	<4	413	-	1.2	0.1	6	0.1	0.2	20.4	4.6	10.5	4.00	1.55	19.6
135-155	9.3	8.2	61.5	0.57	2.80	0.4	<4	347	-	1.0	0.1	4	0.2	0.2	16.9	4.2	9.2	3.81	1.23	22.5

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