Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP304** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	18/11/91	**Elevation:**	170 metres
Map Ref.:	Sheet No. : 5932-3 1:50000	**Rainfall:**	No Data
Northing/Long.:	6366700 AMG zone: 53	**Runoff:**	No Data
Easting/Lat.:	514200 Datum: AGD66	**Drainage:**	Well drained

Geology

ExposureType:	Soil pit	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	Soil pit, 1.5 m deep,Porous, Calcarenite

Land Form

Rel/Slope Class:	Undulating low hills 30-90m 3-10%	**Pattern Type:**	Low hills
Morph. Type:	Lower-slope	**Relief:**	50 metres
Elem. Type:	Hillslope	**Slope Category:**	Very gently sloped
Slope:	1 %	**Aspect:**	270 degrees

Surface Soil Condition (dry):

Erosion: Minor or present (wind);

Soil Classification

Australian Soil Classification:
Marly Lithocalcic Calcarosol
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Gc1.22
Great Soil Group: N/A

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); , 0-0% ; Sandy loam; Massive grade of structure; Earthy fabric; Dry; Weak consistence; Soil matrix is Moderately calcareous; Field pH 8 (Raupach); Many, very fine (0-1mm) roots; Clear, Smooth change to -
A12	0.1 - 0.17 m	Dark brown (7.5YR3/2-Moist); Light brown (7.5YR6/4-Dry); , 0-0% ; Loam; Massive grade of structure; Earthy fabric; Dry; Weak consistence; Soil matrix is Moderately calcareous; Field pH 8.5 (Raupach); Many, very fine (0-1mm) roots; Sharp, Smooth change to -
B21	0.17 - 0.35 m	Dark reddish brown (5YR3/4-Moist); , 0-0% ; Loam; Weak grade of structure, 100-200 mm, Polyhedral; Rough-ped fabric; Dry; Firm consistence; Soil matrix is Highly calcareous; Field pH 8.5 (Raupach); Many, very fine (0-1mm) roots; Clear, Smooth change to -
B22k	0.35 - 0.47 m	Yellowish red (5YR4/6-Moist); , 0-0% ; Loam; Massive grade of structure; Rough-ped fabric; Dry; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Soil matrix is Very highly calcareous; Field pH 9 (Raupach); Many, very fine (0-1mm) roots; Gradual, Smooth change to -
B3k	0.47 - 0.7 m	Reddish yellow (7.5YR6/6-Moist); , 0-0% ; Clay loam; Massive grade of structure; Rough-ped fabric; Dry; Firm consistence; Very many (50 - 100 %), Calcareous, Coarse (6 - 20 mm), Nodules; Soil matrix is Very highly calcareous; Field pH 9 (Raupach); Many, very fine (0-1mm) roots; Gradual, Smooth change to -
BC	0.7 - 0.85 m	Reddish yellow (7.5YR6/6-Moist); , 0-0% ; Clay loam; Massive grade of structure; Rough-ped fabric; Dry; Firm consistence; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Nodules; Soil matrix is Very highly calcareous; Field pH 9.5 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Irregular change to -
C	0.85 - 1.3 m	Pink (7.5YR8/4-Moist); , 0-0% ; Light clay; Massive grade of structure; Rough-ped fabric; Dry; Firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Soil matrix is Very highly calcareous; Field pH 9.5 (Raupach);

Morphological Notes

Observation Notes

Site Notes

Minnipa, Ag Research Centre (Morph 3)

Project Name: Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16
Project Code: Morphology **Site ID:** CP304 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP304** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m				Cmol (+)/kg				%
0 - 0.1	8.64A	0.24A	7.9B	1.3	2.7	0.3		9.8A		3.06
0 - 0.17										
0 - 0.17										
0.1 - 0.17	8.66A	0.17A	9.5B	1.6	2.1	0.36		13.1A		2.75
0.17 - 0.35	8.63A	0.16A	10.9B	2.7	1.8	0.22		13.3A		1.65
0.17 - 0.35	8.63A	0.16A	10.9B	2.7	1.8	0.22		13.3A		1.65
0.17 - 0.35	8.63A	0.16A	10.9B	2.7	1.8	0.22		13.3A		1.65
0.35 - 0.47	8.85A	0.14A	10.6B	3.8	0.92	0.42		12.9A		3.26
0.47 - 0.7	9.32A	0.32A	6.2B	3.9	0.57	1.9		10.4A		18.27
0.7 - 0.85	9.35A	0.79A	3.3B	4	0.74	3.1		9.5A		32.63
0.85 - 1.3	9.72A	1.26A	1.2B	3.4	0.99	5.2		6.7A		77.61

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis				
								GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.1	1.16B	0.93B						0				
0 - 0.17							1.54					
							1.54					
							1.56					
							1.58					
0 - 0.17							1.54					
							1.54					
							1.56					
							1.58					
0.1 - 0.17	0.9B	1.1B					1.58	0				
0.17 - 0.35	0.61B	0.42B					1.56	0				
							1.43					
							1.44					
							1.54					
							1.51					
0.17 - 0.35	0.61B	0.42B					1.56	0				
							1.43					
							1.44					
							1.54					
							1.51					
0.17 - 0.35	0.61B	0.42B					1.56	0				
							1.43					
							1.44					
							1.54					
							1.51					
0.35 - 0.47	4.66B	0.29B						0				
0.47 - 0.7	26.5B	0.01B						0				
0.7 - 0.85	27.9B	0.27B						14				
0.85 - 1.3	42.9B	0.01B						16				

Depth	COLE	Gravimetric/Volumetric Water Contents							K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar		
m				g/g -	m3/m3				mm/h	mm/h
0 - 0.1										

Project Name: Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16
Project Code: Morphology **Site ID:** CP304 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

0 - 0.17		0.37E	0.31E	0.24E	0.18D	0.12F	0.09F	135.6D	33.4A
		0.38E	0.32E	0.23E	0.17D	0.11F	0.08F		
		0.36E	0.32E	0.22E	0.21D				
		0.37E	0.34E	0.22E	0.21D				
0 - 0.17		0.37E	0.31E	0.24E	0.18D	0.12F	0.09F	135.6D	33.4A
		0.38E	0.32E	0.23E	0.17D	0.11F	0.08F		
		0.36E	0.32E	0.22E	0.21D				
		0.37E	0.34E	0.22E	0.21D				
0.1 - 0.17	0.008B								
0.17 - 0.35	0.008B	0.41E	0.35E	0.28E	0.27D	0.17F	0.14F	116D	36.9A
		0.41E	0.35E	0.29E	0.28D	0.12F	0.11F		
		0.35E	0.3E	0.25E	0.19D				
		0.37E	0.32E	0.26E	0.19D				
0.17 - 0.35	0.008B	0.41E	0.35E	0.28E	0.27D	0.17F	0.14F	116D	36.9A
		0.41E	0.35E	0.29E	0.28D	0.12F	0.11F		
		0.35E	0.3E	0.25E	0.19D				
		0.37E	0.32E	0.26E	0.19D				
0.17 - 0.35	0.008B	0.41E	0.35E	0.28E	0.27D	0.17F	0.14F	116D	36.9A
		0.41E	0.35E	0.29E	0.28D	0.12F	0.11F		
		0.35E	0.3E	0.25E	0.19D				
		0.37E	0.32E	0.26E	0.19D				
0.35 - 0.47									
0.47 - 0.7									
0.7 - 0.85									
0.85 - 1.3									

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP304** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_CEC	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A1	Chloride - 1:5 soil/water extract, potentiometric titration
6B2	Total organic carbon - high frequency induction furnace, volumetric
P10_GRAV	Gravel (%)
P10_S_0.20	0.20 micron (cumulative %) - Sedigraph
P10_S_0.48	0.48 micron (cumulative %) - Sedigraph
P10_S_1	1 micron (cumulative %) - Sedigraph
P10_S_1000	1000 micron (cumulative %) - Sedigraph
P10_S_125	125 micron (cumulative %) - Sedigraph
P10_S_15.6	15.6 micron (cumulative %) - Sedigraph
P10_S_2	2 micron (cumulative %) - Sedigraph
P10_S_20	20 micron (cumulative %) - Sedigraph
P10_S_2000	2000 micron (cumulative %) - Sedigraph
P10_S_250	250 micron (cumlative %) - Sedigraph
P10_S_3.9	3.9 micron (cumulative %) - Sedigraph
P10_S_31.2	31.2 micron (cumulative %) - Sedigraph
P10_S_500	500 micron (cumulative %) - Sedigraph
P10_S_53	53 micron (cumulative %) - Sedigraph
P10_S_63	63 micron (cumulative %) - Sedigraph
P10_S_7.8	7.8 micron (cumulative %) - Sedigraph
P3A1	Bulk density - g/cm3
P3B2VL_15	15 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B2VL_5	5 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B3VLb001	0.01 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb003	0.03 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb005	0.05 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb01	0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb05	0.5 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLbSAT	Saturated Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P4_50_McK	Unsaturated Hydraulic Conductivity - 50mm potential (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P4_sat_McK	Saturated Hydraulic Conductivity (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P5_LS_MOD	Modified linear shrinkage (McKenzie, Jacquier and Ringrose-Voase, AJSR, 1994, 32, 931-8)