Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP329** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	03/04/93	**Elevation:**	1065 metres
Map Ref.:	Sheet No. : 9237-3-S 1:25000	**Rainfall:**	No Data
Northing/Long.:	6627600 AMG zone: 56	**Runoff:**	Moderately rapid
Easting/Lat.:	370300 Datum: AGD66	**Drainage:**	Imperfectly drained

Geology

ExposureType:	Soil pit	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	Soil pit, 0.9 m deep,Porous, Basalt

Land Form

Rel/Slope Class:	Undulating rises 9-30m 3-10%	**Pattern Type:**	Rises
Morph. Type:	Flat	**Relief:**	15 metres
Elem. Type:	Pediment	**Slope Category:**	Level
Slope:	0.5 %	**Aspect:**	No Data

Surface Soil Condition (dry): Firm

Erosion:

Soil Classification

Australian Soil Classification:
Brown Vertosol
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Ug5.24
Great Soil Group: N/A

Site Disturbance: Complete clearing. Pasture, native or improved, cultivated at some stage

Vegetation: Low Strata - Tussock grass, <0.25m, Sparse. *Species includes - None recorded

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.05 m	Very dark greyish brown (10YR3/2-Moist); Dark grey (10YR4/1-Dry); ; Medium clay; Strong grade of structure, 2-5 mm, Granular; Rough-ped fabric; Dry; 0-2%, medium gravelly, 6-20mm, subrounded, dispersed, Basalt, coarse fragments; Field pH 5.5 (Raupach); Many, very fine (0-1mm) roots; Clear, Smooth change to -
A12	0.05 - 0.1 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Strong grade of structure, 5-10 mm, Granular; Rough-ped fabric; Dry; 0-2%, medium gravelly, 6-20mm, subrounded, dispersed, Basalt, coarse fragments; Field pH 5.5 (Raupach); Many, very fine (0-1mm) roots; Clear, Smooth change to -
A13	0.1 - 0.2 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Polyhedral; Moderate grade of structure, 5-10 mm, Granular; Rough-ped fabric; Dry; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Clear, Wavy change to -
B21	0.2 - 0.3 m	Brown (10YR5/3-Moist); ; Heavy clay; Moderate grade of structure, 200-500 mm, Prismatic; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Dry; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots;
B21	0.3 - 0.5 m	Brown (10YR5/3-Moist); ; Heavy clay; Moderate grade of structure, 200-500 mm, Prismatic; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Dry; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Diffuse, Smooth change to -
B22	0.5 - 0.7 m	Brown (10YR5/3-Moist); ; Heavy clay; Moderate grade of structure, 200-500 mm, Prismatic; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Dry; Field pH 6.5 (Raupach); Few, very fine (0-1mm) roots; Gradual, Wavy change to -
B3	0.7 - 0.85 m	Brown (10YR5/3-Moist); ; Heavy clay; Moderate grade of structure, 200-500 mm, Prismatic; Smooth-ped fabric; Dry; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Nodules; Field pH 6.5 (Raupach); Few, very fine (0-1mm) roots; Clear, Wavy change to -
C1	0.85 - 1.05 m	Grey (10YR5/1-Moist); , 10YR83, 20-50% , 15-30mm, Distinct; , 10YR53, 20-50% , 15-30mm, Distinct; Rough-ped fabric; Dry; Field pH 7 (Raupach);
C2	1.05 - 1.5 m	Grey (10YR5/1-Moist); , 10YR83, 20-50% , 15-30mm, Distinct; , 10YR53, 20-50% , 15-30mm, Distinct; Rough-ped fabric; Field pH 7 (Raupach);

Morphological Notes

B21 Larges fissures have coatings of 10YR3/1 due to A hor. falling down.

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B21	Larges fissures have coatings of 10YR3/1 due to A hor. falling down.
B22	Larges fissures have coatings of 10YR3/1 due to A hor. falling down.
B3	Larges fissures have coatings of 10YR3/1 due to A hor. falling down.

Observation Notes

Small elevated plain surrounded by low Tb hills

Site Notes

Laureldale, UNE (Morph 28)

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Laboratory Test Results:

Depth m	pH	1:5 EC dS/m	Exchangeable Cations Ca	 Mg	 K	 Na Cmol (+)/kg	Exchangeable Acidity	CEC	ECEC	ESP %
0 - 0.05	5.63A	0.14A	16.9B	11.5	0.52	0.16		37.3A		0.43
0.05 - 0.1	5.61A	0.06A	16.6B	11.2	0.28	0.24		34.2A		0.70
0 - 0.2										
0 - 0.2										
0.1 - 0.2	6.01A	0.05A	17.8B	12.6	0.31	0.26		36.8A		0.71
0.2 - 0.3	6.23A	0.05A	17.7B	13.9	0.36	0.4		37.6A		1.06
0.3 - 0.5	6.24A	0.05A	16B	14.6	0.35	0.49		37.3A		1.31
0.3 - 0.5	6.24A	0.05A	16B	14.6	0.35	0.49		37.3A		1.31
0.3 - 0.5	6.24A	0.05A	16B	14.6	0.35	0.49		37.3A		1.31
0.5 - 0.7	6.36A	0.05A	14B	18.4	0.32	0.68		37.7A		1.80
0.5 - 0.7	6.36A	0.05A	14B	18.4	0.32	0.68		37.7A		1.80
0.5 - 0.7	6.36A	0.05A	14B	18.4	0.32	0.68		37.7A		1.80
0.7 - 0.85	6.78A	0.05A	14.3B	20.1	0.28	0.96		38.7A		2.48
0.85 - 1.05	7.63A	0.1A	13.2B	18.2	0.04	2.1		36.2A		5.80
1.05 - 1.5										

Depth m	CaCO3 %	Organic C %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle Size Analysis GV	 CS	 FS %	 Silt	 Clay
0 - 0.05		3.04B						0				
0.05 - 0.1		2.74B						0				
0 - 0.2							1.18					
							1.19					
							1.23					
							1.21					
0 - 0.2							1.18					
							1.19					
							1.23					
							1.21					
0.1 - 0.2		1.9B					1.16	0				
0.2 - 0.3		1.25B						0				
0.3 - 0.5		0.75B					1.39	0				
							1.17					
							1.14					
							1.36					
							1.52					
0.3 - 0.5		0.75B					1.39	0				
							1.17					
							1.14					
							1.36					
							1.52					
0.3 - 0.5		0.75B					1.39	0				
							1.17					
							1.14					
							1.36					
							1.52					
0.5 - 0.7		0.64B					1.48	0				
							1.21					
							1.17					
							1.17					
							1.13					

0.5 - 0.7		0.64B	1.48	0
			1.21	
			1.17	
			1.17	
			1.13	
0.5 - 0.7		0.64B	1.48	0
			1.21	
			1.17	
			1.17	
			1.13	
0.7 - 0.85		0.4B		0
0.85 - 1.05	0.05B	0.09B		0
1.05 - 1.5				

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 - 0.05										
0.05 - 0.1										
0 - 0.2		0.5E	0.44E	0.43E	0.4D		0.31F	0.29F	194.2D	50.1A
		0.51E	0.44E	0.43E	0.41D		0.33F	0.3F		
		0.46E	0.44E	0.42E	0.41D					
		0.45E	0.41E	0.4E	0.38D					
0 - 0.2		0.5E	0.44E	0.43E	0.4D		0.31F	0.29F	194.2D	50.1A
		0.51E	0.44E	0.43E	0.41D		0.33F	0.3F		
		0.46E	0.44E	0.42E	0.41D					
		0.45E	0.41E	0.4E	0.38D					
0.1 - 0.2	0.117B									
0.2 - 0.3										
0.3 - 0.5	0.146B	0.54E	0.53E	0.52E	0.49D		0.42F	0.37F	73.5D	7.6A
		0.55E	0.53E	0.51E	0.49D		0.37F	0.32F		
		0.48E	0.46E	0.45E	0.42D					
		0.42E	0.39E	0.37E	0.35D					
0.3 - 0.5	0.146B	0.54E	0.53E	0.52E	0.49D		0.42F	0.37F	73.5D	7.6A
		0.55E	0.53E	0.51E	0.49D		0.37F	0.32F		
		0.48E	0.46E	0.45E	0.42D					
		0.42E	0.39E	0.37E	0.35D					
0.3 - 0.5	0.146B	0.54E	0.53E	0.52E	0.49D		0.42F	0.37F	73.5D	7.6A
		0.55E	0.53E	0.51E	0.49D		0.37F	0.32F		
		0.48E	0.46E	0.45E	0.42D					
		0.42E	0.39E	0.37E	0.35D					
0.5 - 0.7	0.133B	0.54E	0.53E	0.52E	0.5D		0.39F	0.38F	2.8D	0.1A
		0.55E	0.53E	0.51E	0.48D		0.39F	0.36F		
		0.55E	0.54E	0.53E	0.5D					
		0.57E	0.55E	0.53E	0.5D					
0.5 - 0.7	0.133B	0.54E	0.53E	0.52E	0.5D		0.39F	0.38F	2.8D	0.1A
		0.55E	0.53E	0.51E	0.48D		0.39F	0.36F		
		0.55E	0.54E	0.53E	0.5D					
		0.57E	0.55E	0.53E	0.5D					
0.5 - 0.7	0.133B	0.54E	0.53E	0.52E	0.5D		0.39F	0.38F	2.8D	0.1A
		0.55E	0.53E	0.51E	0.48D		0.39F	0.36F		
		0.55E	0.54E	0.53E	0.5D					
		0.57E	0.55E	0.53E	0.5D					
0.7 - 0.85										
0.85 - 1.05										
1.05 - 1.5										

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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)