Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP331** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	20/10/93	**Elevation:**	No Data
Map Ref.:	1:250000	**Rainfall:**	No Data
Northing/Long.:	147.47	**Runoff:**	Slow
Easting/Lat.:	-35.13	**Drainage:**	Well drained

Geology

ExposureType:	Soil pit	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	Soil pit, No Data

Land Form

Rel/Slope Class:	No Data	**Pattern Type:**	No Data
Morph. Type:	Mid-slope	**Relief:**	No Data
Elem. Type:	No Data	**Slope Category:**	Gently inclined
Slope:	7 %	**Aspect:**	130 degrees

Surface Soil Condition (dry): Firm

Erosion:

Soil Classification

Australian Soil Classification:
Eutrophic Red Kandosol
ASC Confidence:
No analytical data are available but confidence is fair.

Mapping Unit: N/A
Principal Profile Form: Dr2.52
Great Soil Group: N/A

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

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

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.1 m	Brown (7.5YR4/2-Moist); , 0-0% ; Sandy loam; Earthy fabric; Moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Rock outcrop, coarse fragments; Field pH 6 (Raupach); Many, very fine (0-1mm) roots; Gradual, Smooth change to -
A12	0.1 - 0.2 m	Brown (7.5YR4/3-Moist); Brown (7.5YR4/3-Moist); , 0-0% ; Sandy loam; Earthy fabric; Moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Rock outcrop, coarse fragments; Field pH 5.5 (Raupach); Many, very fine (0-1mm) roots; Diffuse, Smooth change to -
A13	0.2 - 0.4 m	Reddish brown (5YR4/4-Moist); , 0-0% ; Sandy loam; Earthy fabric; Moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Rock outcrop, coarse fragments; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to -
B1	0.4 - 0.65 m	Red (2.5YR4/6-Moist); , 0-0% ; Sandy clay loam; Earthy fabric; Moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Rock outcrop, coarse fragments; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to -
B2	0.65 - 1.1 m	Dark red (2.5YR3/6-Moist); , 0-0% ; Light medium clay; Earthy fabric; Moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Rock outcrop, coarse fragments; Field pH 7.5 (Raupach); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
2A1	1.1 - 1.35 m	Yellowish red (5YR4/6-Moist); , 0-0% ; Loamy sand; Earthy fabric; Moist; Weak consistence; Field pH 8 (Raupach); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
2B2	1.35 - 1.6 m	Reddish brown (2.5YR4/4-Moist); , 0-0% ; Light medium clay; Earthy fabric; Moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Rock outcrop, coarse fragments; Field pH 8.5 (Raupach); Few, very fine (0-1mm) roots;

Morphological Notes

Observation Notes

Mown salvation jane/clover cover. Fan deposits with buried soil derived from upslope granites.

Site Notes

Flushing Meadows, Wagga Wagga, WIP1 (Morph 30)

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations Ca	Mg	K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.1	5.81A	0.08A	2.2B	0.3	0.6	0		4.2A		0.00
0.1 - 0.2	5.83A	0.03A	0.91B	0.18	0.45	0		2.6A		0.00
0.1 - 0.3										
0.1 - 0.3										
0.2 - 0.4	6.07A	0.01A	1.5B	0.33	0.34	0		2.7A		0.00
0.4 - 0.65	6.41A	0.01A	3B	0.81	0.24	0		4.3A		0.00
0.65 - 1.1	7.52A	0.02A	6.4B	2.3	0.99	0.19		9.6A		1.98
0.7 - 0.9										
0.7 - 0.9										
1 - 1.2										
1 - 1.2										
1.1 - 1.35	7.95A	0.02A	2.7B	1.2	0.6	0.22		4.5A		4.89
1.35 - 1.6	8.13A	0.03A	4.8B	2.1	1.5	0.2		8.1A		2.47
1.45 - 1.65										
1.45 - 1.65										

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		1.04B						3				
0.1 - 0.2		0.3B					1.54	3				
0.1 - 0.3							1.56					
							1.56					
							1.55					
							1.56					
0.1 - 0.3							1.56					
							1.56					
							1.55					
							1.56					
0.2 - 0.4		0.17B						10				
0.4 - 0.65		0.12B						12				
0.65 - 1.1		0.1B					1.75	2				
0.7 - 0.9							1.73					
							1.81					
0.7 - 0.9							1.73					
							1.81					
1 - 1.2							1.77					
							1.75					
							1.57					
							1.65					
1 - 1.2							1.77					
							1.75					
							1.57					
							1.65					
1.1 - 1.35	0.02B	0.04B					1.74	3				
1.35 - 1.6	0.08B	0.05B					1.57	5				
1.45 - 1.65							1.65					
							1.70					
							1.72					
							1.82					

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1.45 - 1.65	1.65
	1.70
	1.72
	1.82

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										
0.1 - 0.2	0.004B									
0.1 - 0.3		0.34E	0.25E	0.21E	0.12D		0.06F	0.04F	246.9D	74.9A
		0.36E	0.26E	0.21E	0.11D		0.06F	0.04F		
		0.37E	0.26E	0.2E	0.11D					
		0.35E	0.25E	0.2E	0.11D					
0.1 - 0.3		0.34E	0.25E	0.21E	0.12D		0.06F	0.04F	246.9D	74.9A
		0.36E	0.26E	0.21E	0.11D		0.06F	0.04F		
		0.37E	0.26E	0.2E	0.11D					
		0.35E	0.25E	0.2E	0.11D					
0.2 - 0.4										
0.4 - 0.65										
0.65 - 1.1	0.038B									
0.7 - 0.9		0.34E	0.29E	0.27E	0.24D		0.2F	0.16F	99.6D	11.5A
		0.31E	0.26E	0.25E	0.21D					
0.7 - 0.9		0.34E	0.29E	0.27E	0.24D		0.2F	0.16F	99.6D	11.5A
		0.31E	0.26E	0.25E	0.21D					
1 - 1.2		0.32E	0.19E	0.18E	0.14D		0.11F	0.09F	86.2D	21A
		0.29E	0.21E	0.19E	0.14D		0.11F	0.09F		
		0.38E	0.31E	0.29E	0.24D					
		0.35E	0.31E	0.29E	0.25D					
1 - 1.2		0.32E	0.19E	0.18E	0.14D		0.11F	0.09F	86.2D	21A
		0.29E	0.21E	0.19E	0.14D		0.11F	0.09F		
		0.38E	0.31E	0.29E	0.24D					
		0.35E	0.31E	0.29E	0.25D					
1.1 - 1.35	0.013B									
1.35 - 1.6	0.021B									
1.45 - 1.65		0.33E	0.27E	0.25E	0.22D		0.16F	0.14F	86.8D	17.2A
		0.33E	0.27E	0.25E	0.22D		0.14F	0.12F		
		0.33E	0.23E	0.21E	0.16D					
		0.29E	0.24E	0.23E	0.2D					
1.45 - 1.65		0.33E	0.27E	0.25E	0.22D		0.16F	0.14F	86.8D	17.2A
		0.33E	0.27E	0.25E	0.22D		0.14F	0.12F		
		0.33E	0.23E	0.21E	0.16D					
		0.29E	0.24E	0.23E	0.2D					

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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
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)