Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP310** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	17/03/92	**Elevation:**	No Data
Map Ref.:	1:250000	**Rainfall:**	No Data
Northing/Long.:	6494800 AMG zone: 55	**Runoff:**	Moderately rapid
Easting/Lat.:	558100 Datum: AGD66	**Drainage:**	Well drained

Geology

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

Land Form

Rel/Slope Class:	No Data	**Pattern Type:**	Rises
Morph. Type:	Upper-slope	**Relief:**	No Data
Elem. Type:	No Data	**Slope Category:**	Very gently sloped
Slope:	2 %	**Aspect:**	No Data

Surface Soil Condition (dry): Hardsetting

Erosion:

Soil Classification

Australian Soil Classification:
Red Dermosol
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Gn4.12
Great Soil Group: N/A

Site Disturbance: Limited clearing, for example selective logging

Vegetation: Low Strata - Tussock grass, 0.26-0.5m, Very sparse. *Species includes - None recorded
Mid Strata - Tree, 3.01-6m, Very sparse. *Species includes - Acacia species
Tall Strata - Tree, 12.01-20m, Sparse. *Species includes - Eucalyptus populnea, Callitris species

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.03 m	Dark reddish brown (5YR3/3-Moist); Yellowish red (5YR4/6-Dry); ; Loam; Weak grade of structure, 10-20 mm, Platy; Earthy fabric; Dry; Very firm consistence; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Sharp, Smooth change to -
A12	0.03 - 0.12 m	Dark reddish brown (5YR3/3-Moist); ; Loam; Massive grade of structure; Earthy fabric; Dry; Very firm consistence; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to -
A13	0.12 - 0.2 m	Dark reddish brown (5YR3/4-Moist); ; Clay loam; Massive grade of structure; Earthy fabric; Dry; Very firm consistence; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to -
B11	0.2 - 0.3 m	Dark reddish brown (2.5YR3/4-Moist); ; Clay loam; Massive grade of structure; Rough-ped fabric; Dry; Very firm consistence; Field pH 6 (Raupach); Common, coarse (>5mm) roots; Diffuse, Smooth change to -
B12	0.3 - 0.4 m	Dark red (2.5YR3/6-Moist); ; Light clay; Massive grade of structure; Rough-ped fabric; Dry; Very firm consistence; Field pH 6 (Raupach); Few, very fine (0-1mm) roots;
B12	0.4 - 0.65 m	Dark red (2.5YR3/6-Moist); ; Light clay; Massive grade of structure; Rough-ped fabric; Dry; Very firm consistence; Field pH 6.5 (Raupach); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B2	0.65 - 0.95 m	Dark red (10R3/6-Moist); , 2.5YR36, 20-50% , 15-30mm, Distinct; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Dry; Strong consistence; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 7 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B31	0.95 - 1.3 m	Dark red (10R3/6-Moist); , 2.5YR36, 20-50% , 5-15mm, Prominent; , 7.5YR66, 20-50% , 5-15mm, Prominent; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Dry; Strong consistence; Many cutans, >50% of ped faces or walls coated, distinct; Field pH 7.5 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -

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B32	1.3 - 1.5 m	Yellowish brown (10YR5/4-Moist); , 10R36, 20-50% , 30-mm, Prominent; Light medium clay; Moderate grade of structure; Rough-ped fabric; Strong consistence; 0-2%, cobbly, 60-200mm, subangular tabular, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Soil matrix is Moderately calcareous; Field pH 8 (Raupach); Few, very fine (0-1mm) roots;

Morphological Notes

B31 Mottling is around fine root channels

Observation Notes

Substarte material mesozoic sediments?

Site Notes

Gin Gin (Morph 9)

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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 - 0.03	6.4A	0.03A	4.1B	1.2	1			7.2A		
0 - 0.2										
0 - 0.2										
0.03 - 0.12	5.79A	0.02A	3.9B	1.1	0.67	0.04		7.9A		0.51
0.12 - 0.2	5.67A	0.02A	3.5B	1.1	0.47	0.04		7.1A		0.56
0.2 - 0.3	6.19A	0.02A	3.8B	1.5	0.31	0.03		6.1A		0.49
0.3 - 0.4	5.99A	0.01A	3.6B	1.5	0.25	0.09		6.2A		1.45
0.4 - 0.65	5.96A	0.02A	3.5B	1.7	0.19	0.11		6.3A		1.75
0.4 - 0.6										
0.4 - 0.6										
0.65 - 0.95	6.39A	0.03A	4.6B	2.1	0.36	0.1		8A		1.25
0.7 - 0.9										
0.7 - 0.9										
0.95 - 1.3	7.53A	0.03A	5.2B	1.9	0.6	0.18		10.5A		1.71
1.3 - 1.5	8.09A	0.07A	5.3B	2.1	0.57	0.25		9.7A		2.58

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 - 0.03		1.37B						0				
0 - 0.2							1.53					
							1.45					
							1.45					
							1.42					
0 - 0.2							1.53					
							1.45					
							1.45					
							1.42					
0.03 - 0.12		0.77B					1.64	1				
0.12 - 0.2		0.41B						1				
0.2 - 0.3		0.28B						2				
0.3 - 0.4		0.23B						3				
0.4 - 0.65		0.19B					1.48	2				
0.4 - 0.6							1.55					
							1.48					
							1.56					
							1.52					
0.4 - 0.6							1.55					
							1.48					
							1.56					
							1.52					
0.65 - 0.95		0.18B					1.76	3				
0.7 - 0.9							1.62					
							1.64					
							1.63					
							1.59					
0.7 - 0.9							1.62					
							1.64					
							1.63					
							1.59					
0.95 - 1.3	0.07B	0.11B						4				

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1.3 - 1.5	0.19B	0.08B						3		

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 - 0.03										
0 - 0.2		0.36E	0.27E	0.24E	0.18D		0.11F	0.1F	288.4D	93.7A
		0.38E	0.28E	0.24E	0.17D		0.11F	0.09F		
		0.38E	0.31E	0.25E	0.17D					
		0.39E	0.31E	0.25E	0.16D					
0 - 0.2		0.36E	0.27E	0.24E	0.18D		0.11F	0.1F	288.4D	93.7A
		0.38E	0.28E	0.24E	0.17D		0.11F	0.09F		
		0.38E	0.31E	0.25E	0.17D					
		0.39E	0.31E	0.25E	0.16D					
0.03 - 0.12	0B									
0.12 - 0.2										
0.2 - 0.3										
0.3 - 0.4										
0.4 - 0.65	0.017B									
0.4 - 0.6		0.36E	0.26E	0.23E	0.17D		0.13F	0.12F	187.9D	38A
		0.4E	0.28E	0.24E	0.17D		0.13F	0.12F		
		0.36E	0.27E	0.24E	0.18D					
		0.35E	0.26E	0.24E	0.18D					
0.4 - 0.6		0.36E	0.26E	0.23E	0.17D		0.13F	0.12F	187.9D	38A
		0.4E	0.28E	0.24E	0.17D		0.13F	0.12F		
		0.36E	0.27E	0.24E	0.18D					
		0.35E	0.26E	0.24E	0.18D					
0.65 - 0.95	0.017B									
0.7 - 0.9		0.36E	0.3E	0.27E	0.23D		0.2F	0.16F	23.4D	8.2A
		0.34E	0.29E	0.27E	0.23D		0.23F	0.2F		
		0.36E	0.3E	0.27E	0.23D					
		0.36E	0.3E	0.27E	0.22D					
0.7 - 0.9		0.36E	0.3E	0.27E	0.23D		0.2F	0.16F	23.4D	8.2A
		0.34E	0.29E	0.27E	0.23D		0.23F	0.2F		
		0.36E	0.3E	0.27E	0.23D					
		0.36E	0.3E	0.27E	0.22D					
0.95 - 1.3										
1.3 - 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_1000	1000 micron (cumulative %) - Sedigraph
P10_S_125	125 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_31.2	31.2 micron (cumulative %) - Sedigraph
P10_S_500	500 micron (cumulative %) - Sedigraph
P10_S_63	63 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)