Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP303** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	15/11/91	**Elevation:**	No Data
Map Ref.:	1:250000	**Rainfall:**	No Data
Northing/Long.:	135.692	**Runoff:**	No Data
Easting/Lat.:	-34.575	**Drainage:**	Imperfectly drained

Geology

ExposureType:	Soil pit	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	Soil pit, 1 m deep,Porous, No Data

Land Form

Rel/Slope Class:	No Data	**Pattern Type:**	No Data
Morph. Type:	Simple-slope	**Relief:**	No Data
Elem. Type:	No Data	**Slope Category:**	Gently inclined
Slope:	3 %	**Aspect:**	225 degrees

Surface Soil Condition (dry): Hardsetting

Erosion:

Soil Classification

Australian Soil Classification:
Bleached Eutrophic Red Chromosol Thick Gravelly Loamy Clayey Moderately deep

Mapping Unit: N/A
Principal Profile Form: Dr3.42

ASC Confidence:
All necessary analytical data are available.

Great Soil Group: N/A

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.1 m	Very dark grey (5YR3/1-Moist); ; Sandy loam; Weak grade of structure, 10-20 mm, Subangular blocky; Weak grade of structure, 20-50 mm, Platy; Rough-ped fabric; Dry; Weak consistence; 2-10%, fine gravelly, 2-6mm, rounded, coarse fragments; Very few (0 - 2 %), Ferruginous, Medium (2 -6 mm), Concretions; Field pH 6 (Raupach); Many, very fine (0-1mm) roots; Abrupt, Smooth change to -
A21	0.1 - 0.2 m	Brown (10YR5/3-Moist); Pale brown (10YR6/3-Dry); ; Sandy loam; Massive grade of structure; Rough-ped fabric; Dry; Weak consistence; 20-50%, medium gravelly, 6-20mm, rounded, coarse fragments; Many (20 - 50 %), Ferruginous, Coarse (6 - 20 mm), Concretions; Field pH 5.5 (Raupach); Common, very fine (0-1mm) roots; Clear, Smooth change to -
A22	0.2 - 0.35 m	Brown (10YR5/3-Moist); Pale brown (10YR6/3-Dry); Mechanical, 7.5YR54, 20-50% , 15-30mm, Distinct; Loam; Massive grade of structure; Rough-ped fabric; Dry; Weak consistence; 50-90%, medium gravelly, 6-20mm, rounded, coarse fragments; Very many (50 - 100 %), Ferruginous, Coarse (6 - 20 mm), Concretions; Field pH 7 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to -
B21	0.35 - 0.55 m	Red (2.5YR4/6-Moist); , 10YR56, 20-50% , 5-15mm, Prominent; Medium clay; Moderate grade of structure, 5-10 mm, Polyhedral; Rough-ped fabric; Dry; Strong consistence; 0-2%, fine gravelly, 2-6mm, rounded, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, faint; Very few (0 - 2 %), Ferruginous, Medium (2 -6 mm), Concretions; Field pH 7 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B22	0.55 - 0.75 m	Red (2.5YR4/6-Moist); , 10YR56, 20-50% , 5-15mm, Prominent; Medium clay; Moderate grade of structure, 5-10 mm, Polyhedral; Rough-ped fabric; Dry; Strong consistence; 0-2%, fine gravelly, 2-6mm, rounded, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, faint; Very few (0 - 2 %), Ferruginous, Medium (2 -6 mm), Concretions; Field pH 7.5 (Raupach); Few, very fine (0-1mm) roots; Gradual, Wavy change to -
B3	0.75 - 1 m	Yellowish red (5YR5/6-Moist); , 10YR68, 20-50% , 5-15mm, Prominent; , 10YR74, 20-50% , 5-15mm, Prominent; Massive grade of structure; Rough-ped fabric; Dry; 2-10%, fine gravelly, 2-6mm, rounded, coarse fragments; Very few (0 - 2 %), Ferruginous, Medium (2 -6 mm), Concretions; Field pH 7.5 (Raupach); Few, very fine (0-1mm) roots;

Morphological Notes

A11	Hydrophobic
B3	Appears to be a separate stratigraphic layer; with banding.

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP303** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Observation Notes

Barley Field - recently cut. Substrate material is Fe stone colluvium; strongly weathered. Coarse fragments appear to be pedogenic and transportational in nature - Concentric rings.

Site Notes

Wanilla, S.A. (Morph 2)

Project Name: Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16
Project Code: Morphology **Site ID:** CP303 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m	Cmol (+)/kg							%
0 - 0.1	5.94A	0.16A	3.7B	0.78	0.76	0.14		7A		2.00
0 - 0.17										
0 - 0.17										
0.1 - 0.2	5.94A	0.03A	2.6B	0.49	0.41	0.13		4.6A		2.83
0.2 - 0.35	6.75A	0.06A	3.7B	0.71	0.44	0.16		4.9A		3.27
0.35 - 0.55	6.83A	0.06A	6.5B	5	0.92	0.39		14.3A		2.73
0.35 - 0.51										
0.35 - 0.51										
0.55 - 0.75	7.21A	0.1A	6.7B	6.3	1.1	0.52		14.5A		3.59
0.75 - 1	7.24A	0.1A	5.6B	5.6	0.87	0.59		13.1A		4.50

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		2.43B						18				
0 - 0.17							1.54					
							1.56					
							1.70					
							1.75					
0 - 0.17							1.54					
							1.56					
							1.70					
							1.75					
0.1 - 0.2		0.7B					1.72	51				
0.2 - 0.35		0.51B						80				
0.35 - 0.55		0.43B					2.18	17				
0.35 - 0.51							1.60					
							1.54					
							1.61					
							1.65					
0.35 - 0.51							1.60					
							1.54					
							1.61					
							1.65					
0.55 - 0.75		0.11B						18				
0.75 - 1		0.06B						35				

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 - 0.17		0.34E	0.27E	0.23E	0.16D		0.08F	0.07F	198D	106A
		0.35E	0.28E	0.24E	0.16D					
		0.36E	0.26E	0.22E	0.15D					
		0.33E	0.25E	0.21E	0.13D					
0 - 0.17		0.34E	0.27E	0.23E	0.16D		0.08F	0.07F	198D	106A
		0.35E	0.28E	0.24E	0.16D					
		0.36E	0.26E	0.22E	0.15D					
		0.33E	0.25E	0.21E	0.13D					
0.1 - 0.2	0B									

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP303** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

0.2 - 0.35									
0.35 - 0.55	0.021B								
0.35 - 0.51		0.39E	0.37E	0.36E	0.34D	0.32F	0.31F	6.9D	0.1A
		0.39E	0.37E	0.35E	0.33D	0.3F	0.3F		
		0.38E	0.36E	0.35E	0.33D				
		0.35E	0.34E	0.32E	0.29D				
0.35 - 0.51		0.39E	0.37E	0.36E	0.34D	0.32F	0.31F	6.9D	0.1A
		0.39E	0.37E	0.35E	0.33D	0.3F	0.3F		
		0.38E	0.36E	0.35E	0.33D				
		0.35E	0.34E	0.32E	0.29D				
0.55 - 0.75									
0.75 - 1									

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP303** **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
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)