

Project Name: SOIL STRUCTURE & MANAGEMENT
Project Code: SSM **Site ID:** SSM32 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

Site Information

Desc. By:	B. Murphy	Locality:	
Date Desc.:	27/03/91	Elevation:	440 metres
Map Ref.:	Sheet No. : 8628 1:50000	Rainfall:	No Data
Northing/Long.:	6178600 AMG zone: 55	Runoff:	Rapid
Easting/Lat.:	640300 Datum: AGD66	Drainage:	Moderately well drained

Geology

ExposureType:	Undisturbed soil core	Conf. Sub. is Parent. Mat.:	No Data
Geol. Ref.:	Dgy	Substrate Material:	No Data

Land Form

Rel/Slope Class:	No Data	Pattern Type:	Low hills
Morph. Type:	Crest	Relief:	No Data
Elem. Type:	Hillcrest	Slope Category:	No Data
Slope:	5 %	Aspect:	270 degrees

Surface Soil Condition (dry): Hardsetting

Erosion: Not apparent (wind); No scalding (scald) Not
apparent (sheet) No wave erosion (wave) No rill
erosion (rill) No mass movement (mass) No gully
erosion (gully) No stream bank erosion (stbank)
No tunnel erosion (tunnel)

Soil Classification

Australian Soil Classification:	Mapping Unit:	N/A
Eutrophic Red Chromosol	Principal Profile Form:	Dr2.42
ASC Confidence:	Great Soil Group:	Non-calcic brown soil
Confidence level not specified		

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments: 2-10%, fine gravelly, 2-6mm, subangular, Quartz; No surface coarse fragments; No surface coarse fragments

Profile Morphology

A1	0 - 0.05 m	Reddish brown (5YR5/4-Moist); Pink (7.5YR7/4-Dry); ; Coarse sandy loam; Weak grade of structure, <2 mm, Granular; Earthy fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Medium (2-5mm) macropores, Dry; Very weak consistence; Non-plastic; Normal plasticity; Non-sticky; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Abrupt change to -
A2	0.05 - 0.22 m	Yellowish red (5YR5/6-Moist); Pink (7.5YR8/4-Dry); ; Coarse sandy loam; Weak grade of structure, 2-5 mm, Platy; Earthy fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Firm consistence; Non-plastic; Normal plasticity; Non-sticky; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Cultivation pan; Common, very fine (0-1mm) roots; Clear change to -
B21	0.22 - 0.32 m	Yellowish red (5YR4/6-Moist); ; Medium sandy clay loam; Weak grade of structure, 20-50 mm, Subangular blocky; 50-100 mm, Columnar; Earthy fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Few (<1 per 100mm2) Medium (2-5mm) macropores, Few (<1 per 100mm2) Coarse (>5mm) macropores, Dry; Weak consistence; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Common, very fine (0-1mm) roots; Gradual change to -
B22	0.32 - 0.5 m	Red (2.5YR4/6-Moist); ; Medium sandy light medium clay; Moderate grade of structure, 50-100 mm, Prismatic; 50-100 mm, Subangular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Few (<1 per 100mm2) Medium (2-5mm) macropores, Dry; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct; Common, very fine (0-1mm) roots; Gradual change to -

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B31	0.5 - 0.7 m	Yellowish brown (10YR5/6-Moist); Substrate influence, 5YR4/6, 2-10% , Faint; Medium heavy clay; Moderate grade of structure, 50-100 mm, Prismatic; 50-100 mm, Subangular blocky; Rough-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots; Gradual change to -
B32	0.7 - 0.9 m	Yellowish brown (10YR5/6-Moist); Substrate influence, 10YR5/3; Medium heavy clay; Moderate grade of structure, 50-100 mm, Prismatic; 50-100 mm, Subangular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Very plastic; Normal plasticity; Moderately sticky; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots;

Morphological Notes

B21 Very large earthworm channel and casts

B32 50-100mm peds in shape of pyramid - see diagram on card.
Roots expd down grey cutans

Observation Notes

Site Notes

HUME CALENZO EMU Paddock

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity		%
						Cmol (+)/kg			
0 - 0.02	4.7B	0.146A	0.98J	0.56	0.58	0.03		2.43I	1.23
0.01 - 0.085									
0.02 - 0.05	4.3B	0.105A	0.83J	0.43	0.41			2.85I	
0.05 - 0.1	4.1B	0.075A	0.91J	0.43	0.31	0.01		2.19I	0.46
0.19 - 0.265									
0.22 - 0.32	4.64B	0.031A	2.97J	1.48	0.52	0.03		6.6I	0.45
0.32 - 0.42	4.91B	0.046A	3.47J	2.71	0.48	0.04		6.42I	0.62
0.7 - 0.8	5.97B	0.035A	7.6J	8.73	0.56	0.33		15.53I	2.12

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Laboratory Analyses Completed for this profile

13A1_AL	Oxalate-extractable aluminium
13A1_FE	Oxalate-extractable iron
13A1_MN	Oxalate-extractable manganese
13A1_SI	Oxalate-extractable silicon
13C1_AL	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
13C1_FE	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
13C1_MN	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
13C1_SI	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
14H1_CA	Soluble bases/SE (Ca,Mg,K,Na)
14H1_K	Soluble bases/SE (Ca,Mg,K,Na)
14H1_MG	Soluble bases/SE (Ca,Mg,K,Na)
14H1_NA	Soluble bases/SE (Ca,Mg,K,Na)
15F1_CA	Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts
15F1_K	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_MG	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_NA	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F3	CEC by 0.01M silver-thiourea (AgTU)+
15N1	Exchangeable sodium percentage (ESP)
3A1	EC of 1:5 soil/water extract
4B1	pH of 1:5 soil/0.01M calcium chloride extract - direct
6B3	Total organic carbon - high frequency induction furnace, infrared
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P3A1	Bulk density - g/cm3
P3B3VLc001	0.01 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc003	0.03 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc005	0.05 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc01	0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc03	0.3 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLcSAT	Saturated Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLd06	0.6 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd1	1 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd15	15 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd3	3 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd5	5 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P6_LP	Dispersion Index (Loveday and Pyle, 1973)
PWS1-2mm	1000-2000 micron fraction (%) - Wet Sieving after chemical dispersion
PWS20-63	20-63 micron fraction (%) - Wet Sieving after chemical dispersion
PWS212-425	212-425 micron fraction (%) - Wet Sieving after chemical dispersion
PWS425-1mm	425-1000 micron fraction (%) - Wet Sieving after chemical dispersion
PWS63-212	63-212 micron fraction (%) - Wet Sieving after chemical dispersion