Project Name: SOIL STRUCTURE & MANAGEMENT

Project Code: SSM Site ID: SSM26 Observation ID: 1

Agency Name: CSIRO Division of Soils (ACT)

Site Information

Desc. By: B. Murphy Locality:

 Date Desc.:
 13/03/91
 Elevation:
 250 metres

 Map Ref.:
 Sheet No.: 8229
 1:100000
 Rainfall:
 No Data

 Northing/Long.:
 6217100 AMG zone: 55
 Runoff:
 Slow

Easting/Lat.: 497300 Datum: AGD66 Drainage: Moderately well drained

<u>Geology</u>

ExposureType: Undisturbed soil core Conf. Sub. is Parent. Mat.: Probable Geol. Ref.: Ou Substrate Material: Sandstone

**Land Form** 

Rel/Slope Class:No DataPattern Type:RisesMorph. Type:Lower-slopeRelief:No DataElem. Type:HillslopeSlope Category:No DataSlope:2 %Aspect:45 degrees

Surface Soil Condition (dry): Hardsetting

**Erosion:** Not apparent (wind); No scalding (scald) Partial,

Severe (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/ASubnatric Red SodosolPrincipal Profile Form:Dr2.13

ASC Confidence:

Confidence level not specified

Site Disturbance: Cultivation. Rainfed

Vegetation:

**Surface Coarse Fragments:** 

**Profile Morphology** 

A11 0 - 0.05 m Dark reddish brown (5YR3/3-Moist); ; Fine sandy loam; Weak grade of structure, 10-20 mm,

Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Common (1-5 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; Very weak consistence; Non-plastic; Normal plasticity; Non-sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Sandstone, coarse fragments; Many,

**Great Soil Group:** 

Red-brown earth

very fine (0-1mm) roots; Few, fine (1-2mm) roots; Gradual change to -

A12 0.05 - 0.15 m Dark reddish brown (2.5YR3/3-Moist); Biological mixing, 0-2%, Faint; Loam; Weak grade of

structure, 5-10 mm, Platy; Earthy fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Medium (2-5mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Strong consistence; Slightly plastic; Normal plasticity; Non-sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Sandstone, coarse fragments; Cultivation pan;

Common, very fine (0-1mm) roots; Clear change to -

B21 0.15 - 0.25 m Dark reddish brown (5YR3/4-Moist); ; Medium clay; Strong grade of structure, 100-200 mm,

Columnar; 20-50 mm, Angular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Strong consistence; Very plastic; Normal plasticity; Very sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Sandstone, coarse fragments; 0-2%, 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 -

B22 0.25 - 0.4 m Yellowish red (5YR3/6-Moist); ; Medium clay; Strong grade of structure, 100-200 mm, Columnar;

20-50 mm, Angular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Strong consistence; Very plastic; Normal plasticity; Very sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Sandstone, coarse fragments; 0-2%, 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; Diffuse

change to -

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B23k 0.4 - 0.7 m

Yellowish red (5YR3/6-Moist); ; Medium clay; Strong grade of structure, 100-200 mm, Prismatic; 20-50 mm, Angular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Strong consistence; Very plastic; Normal plasticity; Moderately sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Sandstone, coarse fragments; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations, weak, segregations; Soil matrix is Slightly calcareous; Few, very fine (0-1mm) roots; Diffuse change to -

B31k 0.7 - 0.9 m

Yellowish red (5YR3/6-Moist); Substrate influence, 0-2%, Distinct; Medium clay; Strong grade of structure, 100-200 mm, Prismatic; 20-50 mm, Angular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Firm consistence; Very plastic; Normal plasticity; Moderately sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Sandstone, coarse fragments; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Soft segregations, weak, segregations; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations, weak, segregations; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules, weak, segregations; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules, weak, segregations; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Nodules, weak, segregations; Few, very fine (0-1mm) roots;

## **Morphological Notes**

### **Observation Notes**

atlas map area is My9 but soils seem to fit Qc3 better

#### **Site Notes**

WEST WYALONG FOSTER CROP

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# **Laboratory Test Results:**

Laboratory	rest Re	<u>suits:</u>										
Depth	рН	1:5 EC		hangeable			xchangeabl	le CEC		ECEC		ESP
m		dS/m	Ca I	Mg	К	Na Cmol (+)	Acidity /kg					%
0 - 0.02 0.01 - 0.085	5.07B	0.235A	3.47J	3.18	1.66	0.33		7.83	31		4	4.21
0.02 - 0.05	4.8B	0.17A	3.02J	3.03	0.85	0.35		6.93	31			5.05
0.05 - 0.1	4.71B	0.105A		3.45	0.63	0.47		7.11	1		(	6.61
0.15 - 0.24	6.27B	0.134A	5.09J	12.23	0.74	2.09		14.2	91		1	4.63
0.16 - 0.235												
0.7 - 0.8	7.81B	0.82A	7.52J	16.72	0.91	4.93		23.3	41		2	1.12
Depth	CaCO3	Organic	Avail.	Total	Total	Total	Bulk	P	article	Size	Analysis	S
•		Č	Р	Р	N	K	Density	y GV	cs	FS		Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		-
0 - 0.02 0.01 - 0.085		2.23C					1.36				13	16
0.02 - 0.05 0.05 - 0.1 0.15 - 0.24		1.77C 1.36C 0.63C									13 13 8	18 19 51
0.16 - 0.235		0.000					1.64				Ŭ	٠.
0.7 - 0.8		0.84C									9	50
Depth	COLE		Grav	rimetric/Vo	olumetric V	Vater Cont	ents		Ks	at	K unsa	t
m		Sat.	0.05 Bar	0.1 Bar a/	0.5 Bar /g - m3/m	1 Bar 3	5 Bar	15 Bar	mm	ı/h	mm/h	
					<b>J</b>							
0 - 0.02 0.01 - 0.085 0.02 - 0.05 0.05 - 0.1						0.22F	0.16D	0.14G				
0.15 - 0.24 0.16 - 0.235 0.7 - 0.8		0.34F	0.32F	0.31								

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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\_CASoluble bases/SE (Ca,Mg,K,Na)14H1\_KSoluble bases/SE (Ca,Mg,K,Na)14H1\_MGSoluble bases/SE (Ca,Mg,K,Na)14H1\_NASoluble 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 Silt (%) - Coventry and Fett pipette method

P3A1 Bulk density - g/cm3

P3B3VLc001
P3B3VLc003
P3B3VLc005
P3B3VLc01
P3B3VLc01
P3B3VLc01
P3B3VLc03
P3B3VLc03
P3B3VLc03
P3B3VLc03
P3B3VLc03
P3B3VLc03
P3B3VLc04
P3B3VLc04
P3B3VLc05
P3B3VLc05
P3B3VLc05
P3B3VLc05
P3B3VLc06
P3B3VLc07
P3B3VLc07
P3B3VLc08
P3B3VLc08
P3B3VLc08
P3B3VLc09
P3B

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
PWS20-63
PWS212-425
PWS425-1mm
PWS63-212

1000-2000 micron fraction (%) - Wet Sieving after chemical dispersion
20-63 micron fraction (%) - Wet Sieving after chemical dispersion
425-1000 micron fraction (%) - Wet Sieving after chemical dispersion
425-1000 micron fraction (%) - Wet Sieving after chemical dispersion
63-212 micron fraction (%) - Wet Sieving after chemical dispersion