Project Name: SOIL STRUCTURE & MANAGEMENT

Project Code: SSM Site ID: SSM5 Observation ID: 1

Agency Name: CSIRO Division of Soils (ACT)

Site Information

Desc. By: B. Murphy Locality:

Date Desc.: Elevation: 30/01/90 380 metres Sheet No.: 8632 1:50000 Map Ref.: Rainfall: No Data Northing/Long.: 6401500 AMG zone: 55 Runoff: Moderately rapid 685250 Datum: AGD66 Easting/Lat.: Drainage: Well drained

**Geology** 

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

Land Form

Rel/Slope Class:No DataPattern Type:Low hillsMorph. Type:Lower-slopeRelief:No DataElem. Type:HillslopeSlope Category:No DataSlope:3 %Aspect:90 degrees

Surface Soil Condition (dry): Soft

**Erosion:** No wind erosion (wind); Stable, Minor (sheet) No

rill erosion (rill) No gully erosion (gully)

**Soil Classification** 

Australian Soil Classification:Mapping Unit:N/AHypercalcic Red DermosolPrincipal Profile Form:Gn3.13ASC Confidence:Great Soil Group:Euchrozem

Confidence level not specified

Site Disturbance: Limited clearing, for example selective logging

Vegetation:

**Surface Coarse Fragments:** 

**Profile Morphology** 

O1 0 - 0.01 m Organic Layer; ;

A1 0.01 - 0.11 m Dark reddish brown (5YR3/4-Moist); ; Clay loam; Moderate grade of structure, 10-20 mm,

Subangular blocky; 50-100 mm, Prismatic; 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, Common (1-5 per 100mm2) Medium (2-5mm) macropores, Moderately moist; Weak consistence; Slightly plastic; Normal plasticity; Slightly sticky; 0-2%, fine gravelly, 2-6mm, angular, dispersed, coarse fragments; Few cutans, <10% of ped faces or walls coated, distinct; Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Clear,

Smooth change to -

B21 0.11 - 0.21 m Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Strong grade of structure, 20-50 mm,

Subangular blocky; 100-200 mm, Columnar; Smooth-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, Dry; Very firm consistence; Moderately plastic; Normal plasticity; Slightly sticky; 0-2%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct; Few, medium (2-5mm) roots; Few, fine (1-2mm) roots; Few, very fine (0-1mm) roots; Gradual, Smooth change to

B22 0.21 - 0.41 m Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Strong grade of structure, 50-100 mm,

Subangular blocky; 100-200 mm, Columnar; Smooth-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Very firm consistence; Moderately plastic; Normal plasticity; Slightly sticky; 0-2%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm)

roots; Gradual, Smooth change to -

B2 0.41 - 0.62 m Dark red (2.5YR3/6-Moist); ; Light clay; Strong grade of structure, 50-100 mm, Subangular

blocky; 100-200 mm, Columnar; Smooth-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Very firm consistence; Moderately plastic; Normal plasticity; Slightly sticky; 0-2%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Soil matrix is Slightly calcareous; Few, very fine (0-1mm) roots; Few, fine (1-2mm)

roots; Few, medium (2-5mm) roots; Gradual, Smooth change to -

**Project Name: SOIL STRUCTURE & MANAGEMENT** 

**Project Code:** SSM Site ID: SSM5 Observation ID: 1

**CSIRO** Division of Soils (ACT) Agency Name:

Dark red (2.5YR3/6-Moist); ; Light clay; Strong grade of structure, 50-100 mm, Subangular B22 0.62 - 0.73 m

blocky; 100-200 mm, Columnar; Smooth-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Very firm consistence; Moderately plastic; Normal plasticity; Slightly sticky; 2-10%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Soil matrix is Slightly calcareous; Few, very fine (0-1mm) roots; Few, fine (1-2mm)

roots; Few, medium (2-5mm) roots; Clear, Smooth change to -

ВЗ 0.73 - 0.95 m

Red (2.5YR4/6-Moist); Substrate influence, 2-10%; Mottles, 2-10%; Light clay; Strong grade of structure, 50-100 mm, Subangular blocky; 100-200 mm, Columnar; Smooth-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Very firm consistence; Moderately plastic; Normal plasticity; Slightly sticky; 2-10%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots; Few, fine (1-

2mm) roots; Few, medium (2-5mm) roots;

## **Morphological Notes Observation Notes**

**Site Notes** 

WELLINGTON SCS DRIVEWAY

Project Name: Project Code: Agency Name: **SOIL STRUCTURE & MANAGEMENT** 

SSM Site ID: SSM5 CSIRO Division of Soils (ACT) Observation ID: 1

## **Laboratory Test Results:**

Laboratory	rest Re	suits:										
Depth	рН	1:5 EC		hangeable			Exchangeabl	e CEC		ECEC		ESP
m		dS/m	Ca I	Mg	K	Na Cmol (+)	Acidity )/kg					%
0.01 - 0.03 0.02 - 0.095	5.46B	0.269A	7.29J	4.69	0.99	0.11		13.9	41		(	0.79
0.03 - 0.06	5.22B	0.083A	7.6J	4.27	0.95	0.08		131			(	0.62
0.06 - 0.1	5.19B	0.085A	7.21J	3.91	1.03	0.09		13.2				0.68
0.1 - 0.16	5.35B	0.048A	7.04J	4.02	0.71	0.1		12.0				0.83
0.16 - 0.21 0.17 - 0.245	5.38B	0.044A	9.67J	4.89	1.03	0.14		14.9	21		(	0.94
0.71 - 0.81	7.36B	0.295A	9.77J	5.8	8.0	0.19		15.9	31			1.19
Depth	CaCO3	Organic	Avail.	Total	Total	Total			article		Analysi	
<b>m</b>	%	C %	P mg/kg	P %	N %	K %	Density Mg/m3		cs	FS %	Silt	Clay
m	70	70	ilig/kg	70	70	70	wy/ms			70		
0.01 - 0.03 0.02 - 0.095		6.78C					1.40				24	38
0.03 - 0.06		3.22C									22	42
0.06 - 0.1		2.38C									20	46
0.1 - 0.16		1.53C									15	61
0.16 - 0.21		1.43C									16	61
0.17 - 0.245							1.42					
0.71 - 0.81		1.46C									12	68
Donath	COLE		Craw	·!··· • 4 •! • /\ / •	olumetric V	Natar Cant			Ks	-4	K unsa	
Depth	COLE	Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	r, s	aı	K ulisa	
m		out.	0.00 Bai		g - m3/m		o Bai	10 Dai	mm	/h	mm/h	
0.01 - 0.03												
0.02 - 0.095		0.4F	0.36F	0.311		0.26F	0.23D	0.22G				
0.03 - 0.06												
0.06 - 0.1												
0.1 - 0.16												
0.16 - 0.21		0.425	0.205	0.251								
0.17 - 0.245 0.71 - 0.81		0.43F	0.38F	0.351								
0.71 - 0.01												

**SOIL STRUCTURE & MANAGEMENT Project Name:** 

**Project Code: SSM** Site ID: SSM5 Observation ID: 1

**Agency Name: CSIRO Division of Soils (ACT)** 

## **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

Soluble bases/SE (Ca,Mg,K,Na) 14H1\_CA 14H1\_K Soluble bases/SE (Ca,Mg,K,Na) Soluble bases/SE (Ca,Mg,K,Na) Soluble bases/SE (Ca,Mg,K,Na) 14H1 MG 14H1\_NA

Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts 15F1\_CA

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)+ Exchangeable sodium percentage (ESP) 15N1

EC of 1:5 soil/water extract 3A1

pH of 1:5 soil/0.01M calcium chloride extract - direct 4B1

6B3 Total organic carbon - high frequency induction furnace, infrared

MIN EC

Exchange Capacity - Minerology
Clay (%) - Coventry and Fett pipette method P10\_CF\_C 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 0.03 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate P3B3VLc003 P3B3VLc005 0.05 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate 0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate P3B3VLc01 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

Dispersion Index (Loveday and Pyle, 1973) P6\_LP

1000-2000 micron fraction (%) - Wet Sieving after chemical dispersion PWS1-2mm PWS20-63 20-63 micron fraction (%) - Wet Sieving after chemical dispersion 212-425 micron fraction (%) - Wet Sieving after chemical dispersion PWS212-425 PWS425-1mm 425-1000 micron fraction (%) - Wet Sieving after chemical dispersion PWS63-212 63-212 micron fraction (%) - Wet Sieving after chemical dispersion

XRD\_C\_An Anatase - X-Ray Diffraction XRD\_C\_Hm XRD\_C\_II Hematite - X-Ray Diffraction Illite - X-Ray Diffraction

XRD\_C\_Is Interstratified clay minerals - X-Ray Diffraction

XRD\_C\_Ka XRD\_C\_Qz Kaolin - X-Ray Diffraction Quartz - X-Ray Diffraction