

**Project Name:** SOIL STRUCTURE & MANAGEMENT  
**Project Code:** SSM **Site ID:** SSM14 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (ACT)

#### Site Information

<b>Desc. By:</b>	B. Murphy	<b>Locality:</b>	
<b>Date Desc.:</b>	13/02/91	<b>Elevation:</b>	350 metres
<b>Map Ref.:</b>	Sheet No. : 8532 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6349200 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	615200 Datum: AGD66	<b>Drainage:</b>	Moderately well drained

#### Geology

<b>ExposureType:</b>	Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b>	No Data
<b>Geol. Ref.:</b>	QrOs	<b>Substrate Material:</b>	No Data

#### Land Form

<b>Rel/Slope Class:</b>	No Data	<b>Pattern Type:</b>	Rises
<b>Morph. Type:</b>	Lower-slope	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	Hillslope	<b>Slope Category:</b>	No Data
<b>Slope:</b>	1 %	<b>Aspect:</b>	225 degrees

**Surface Soil Condition (dry):** Hardsetting

**Erosion:** Partial, Minor or present (wind); No scalding  
 (scald) Partial, Minor (sheet) No rill erosion (rill)  
 No mass movement (mass) No gully erosion  
 (gully) No stream bank erosion (stbank) No  
 tunnel erosion (tunnel)

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b>	N/A
Eutrophic Red Dermosol	<b>Principal Profile Form:</b>	Dr2.21
<b>ASC Confidence:</b>	<b>Great Soil Group:</b>	Red podzolic soil
Confidence level not specified		

**Site Disturbance:** Extensive clearing, for example poisoning, ringbarking, Cultivation. Rainfed,

#### Vegetation:

**Surface Coarse Fragments:** 0-2%, fine gravelly, 2-6mm, subrounded, ; No surface coarse fragments; No surface coarse fragments

#### Profile Morphology

A11	0 - 0.02 m	Yellowish red (5YR4/6-Moist); ; Clay loam, sandy; Weak grade of structure, 20-50 mm, Angular blocky; Earthy fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Common (1-5 per 100mm2) Medium (2-5mm) macropores, Dry; Weak consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; Common, very fine (0-1mm) roots;
A12	0.02 - 0.09 m	Yellowish red (5YR4/6-Moist); ; Clay loam, sandy; Weak grade of structure, 20-50 mm, Angular blocky; Earthy fabric; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Medium (2-5mm) macropores, Common (1-5 per 100mm2) Fine (1-2mm) macropores, Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Weak consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Clear change to -
A2	0.09 - 0.2 m	Yellowish red (5YR4/8-Moist); ; Clay loam; Massive 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; Few (<1 per 100mm2) Coarse (>5mm) macropores, Common (1-5 per 100mm2) Medium (2-5mm) macropores, Common (1-5 per 100mm2) Fine (1-2mm) macropores, Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Very firm consistence; Cultivation pan; Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Clear change to -
B21	0.2 - 0.5 m	Red (2.5YR4/8-Moist); Substrate influence, 2-10% , Distinct; Light clay; Moderate grade of structure, 50-100 mm, Prismatic; 2-5 mm, Angular blocky; Rough-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Firm consistence; Common cutans, 10-50% of ped faces or walls coated; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations; Few, very fine (0-1mm) roots; Gradual change to -

**Project Name:** SOIL STRUCTURE & MANAGEMENT  
**Project Code:** SSM                      **Site ID:** SSM14                      **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (ACT)

B21	0.5 - 0.7 m	Red (2.5YR4/8-Moist); Substrate influence, 2-10% , Distinct; Light clay; Moderate grade of structure, 50-100 mm, Prismatic; 2-5 mm, Angular blocky; Rough-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Very firm consistence; Many cutans, >50% of ped faces or walls coated; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations; Few, very fine (0-1mm) roots; Gradual change to -
B22	0.7 - 0.9 m	Red (2.5YR4/6-Moist); Substrate influence, 2-10% , Distinct; Light clay; Strong grade of structure, 50-100 mm, Prismatic; 2-5 mm, Angular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Dry; Weak consistence; Many cutans, >50% of ped faces or walls coated; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations; Few, very fine (0-

**Morphological Notes**

A12                      Many subclover seeds.

B21	Ped coatings also mangan	Some peds smaller (2-5 mm) also polyhed-ral peds.
B21	Ped coatings also mangan.	Some peds smaller (2-5) also polyhedral peds.
B22	Ped coatings also mangan. peds.	Some peds smaller (2-5 mm) also polyhedral

**Observation Notes**

Heavier cracking clay soils in paddock also                      transitional RBE?

\*\*\*Site  
process also alluvial

**Site Notes**

JELBART PINES CROPPING

**Observation ID: 1**

**Laboratory Test Results:**

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na Cmol (+)/kg	Acidity		%
0 - 0.02	5.37B	0.304A	4.45J	1.83	1.46	0.05		7.94I	0.63
0.01 - 0.085									
0.02 - 0.05	4.91B	0.511A	4.28J	1.6	1.04	0.06		7.37I	0.81
0.05 - 0.1	4.52B	0.118A	2.95J	1.14	0.68	0.02		6.1I	0.33
0.1 - 0.2	5.38B	0.031A	4.09J	1.72	0.45	0.06		5.11I	1.17
0.2 - 0.3	5.36B	0.042A	4.04J	2.21	0.33	0.04		5.19I	0.77
0.21 - 0.285									
0.7 - 0.8	4.69B	0.028A	4.42J	9.06	0.23	0.33		12.5I	2.64

[illegible][illegible]

**Project Name:** SOIL STRUCTURE & MANAGEMENT  
**Project Code:** SSM **Site ID:** SSM14 **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
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
MIN_EC	Exchange Capacity - Minerology
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P3A1	Bulk density - g/cm <sup>3</sup>
P3B3VLc001	0.01 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc003	0.03 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc005	0.05 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc01	0.1 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLc03	0.3 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLcSAT	Saturated Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 98mm diameter core on suction plate
P3B3VLd06	0.6 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd15	15 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd3	3 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate
P3B3VLd5	5 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - 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
XRD_C_An	Anatase - X-Ray Diffraction
XRD_C_Hm	Hematite - X-Ray Diffraction
XRD_C_Il	Illite - X-Ray Diffraction
XRD_C_Is	Interstratified clay minerals - X-Ray Diffraction
XRD_C_Ka	Kaolin - X-Ray Diffraction
XRD_C_Qz	Quartz - X-Ray Diffraction