

**Project Name:** Soils of the Lower Macquarie Valley, New South Wales  
**Project Code:** Macquarie **Site ID:** 517 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (ACT)

#### Site Information

<b>Desc. By:</b>	N.J. McKenzie	<b>Locality:</b>	
<b>Date Desc.:</b>	03/12/85	<b>Elevation:</b>	No Data
<b>Map Ref.:</b>	Sheet No. : 8434 1:10000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6475800 AMG zone: 55	<b>Runoff:</b>	Slow
<b>Easting/Lat.:</b>	578700 Datum: AGD66	<b>Drainage:</b>	Imperfectly drained

#### Geology

<b>ExposureType:</b>	Soil pit	<b>Conf. Sub. is Parent. Mat.:</b>	No Data
<b>Geol. Ref.:</b>	No Data	<b>Substrate Material:</b>	No Data

#### Land Form

<b>Rel/Slope Class:</b>	No Data	<b>Pattern Type:</b>	No Data
<b>Morph. Type:</b>	Mid-slope	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	No Data	<b>Slope Category:</b>	No Data
<b>Slope:</b>	%	<b>Aspect:</b>	No Data

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>		<b>Mapping Unit:</b>	INFILLED CHANNELS
N/A		<b>Principal Profile Form:</b>	Ug5.24
		<b>Great Soil Group:</b>	N/A

#### **ASC Confidence:**

Confidence level not specified

**Site Disturbance:** Limited clearing, for example selective logging

#### Vegetation:

Tall Strata - Tree, 12.01-20m, Sparse. \*Species includes - None Recorded

#### Surface Coarse Fragments:

#### Profile Morphology

A1	0 - 0.06 m	Brown (7.5YR5/2-Moist); ; Medium clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Rough-ped fabric; Common (1-5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Common (1-5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Moist; Weak consistence; Field pH 7.5 (Raupach); Many, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Many, medium (2-5mm) roots; Many, coarse (>5mm) roots; Clear, Smooth change to -
B1	0.06 - 0.3 m	Dark greyish brown (10YR4/2-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Common (1-5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Moist; Firm consistence; Many cutans, >50% of ped faces or walls coated; Field pH 7 (Raupach); Many, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Many, coarse (>5mm) roots; Clear, Smooth change to -
B21	0.3 - 0.65 m	Reddish brown (2.5YR5/3-Moist); ; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Many cutans, >50% of ped faces or walls coated; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Nodules; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 7.5 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Diffuse, Smooth change to -
B22	0.65 - 1.35 m	Reddish brown (2.5YR5/3-Moist); ; Medium heavy clay; Weak grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Many cutans, >50% of ped faces or walls coated; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Nodules; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 8.5 (Raupach); Few, very fine (0-1mm) roots;

#### Morphological Notes

A1 Very prominent A B structure = text book. B1 has some of B21's colour intermixed. Big yellow clay!

#### Observation Notes

Mullah Soil Profile Class, Grey Phase, Gilgai about 50m away is strong - vi 1.8m, hi 30m.

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Ca	Exchangeable Mg	Cations K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0.1 - 0.15	6.8A	0.06A	8.4E	3	1.7	0.2			13.3D	
0.3 - 0.35	8.3A	0.106A								
0.7 - 0.75	8.5A	0.114A	13.8E	7.9	1.7	0.3			23.7D	
1.3 - 1.35	8.6A	0.145A								

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0.1 - 0.15							1.44		18A	24.4	12	45.6
0.3 - 0.35							1.51					
0.7 - 0.75							1.57		9.6A	17.2	12.1	61.2
1.3 - 1.35							1.54					

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
m		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
				g/g	m3/m3				mm/h
0.1 - 0.15	0.067A			0.28G				0.14D	
0.3 - 0.35	0.059A			0.25G				0.18D	
0.7 - 0.75	0.058A			0.24G				0.19D	
1.3 - 1.35	0.066A			0.25G				0.19D	

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**Laboratory Analyses Completed for this profile**

15C1_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_K	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_MG	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_NA	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15J_BASES	Sum of Bases
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P3A1	Bulk density - g/cm <sup>3</sup>
P3B1GV_15	15 BAR Moisture g/g - Gravimetric of ground sample (<2mm) using pressure plate
P3B4GV_01	0.1 BAR Moisture g/g - Gravimetric of soil clods (Soil Survey Staff,1967)
P5_COLE	Coefficient of Linear Extensibility (Grossman et al. 1968)