

**Project Name:** Soils of the Lower Macquarie Valley, New South Wales  
**Project Code:** Macquarie **Site ID:** 531 **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>	08/12/85	<b>Elevation:</b>	No Data
<b>Map Ref.:</b>	Sheet No. : 8434 1:10000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6479967 AMG zone: 55	<b>Runoff:</b>	Moderately rapid
<b>Easting/Lat.:</b>	580300 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>	Flat	<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):** Hardsetting, Surface crust

**Erosion:** Partial, Minor or present (wind);

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b>	TRANGIE COWAL ALLUVIUM
N/A		

#### **ASC Confidence:**

Confidence level not specified

**Principal Profile Form:** Dr3.13

**Great Soil Group:** N/A

**Site Disturbance:** Cultivation. Rainfed

#### Vegetation:

Tall Strata - Tussock grass, 0.51-1m, Sparse. \*Species includes - None Recorded

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark reddish brown (5YR3/4-Moist); ; Clay loam; Weak grade of structure, 5-10 mm, Platy; Earthy fabric; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Few (<1 per 0.01m <sup>2</sup> ) Medium (2-5mm) macropores, Wet; Weak consistence; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Clear, Smooth change to -
A12	0.1 - 0.25 m	Reddish brown (5YR4/4-Moist); ; Clay loam; Moderate grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Many (>5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Medium (2-5mm) macropores, Wet; Weak consistence; Field pH 7.5 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Common, coarse (>5mm) roots; Gradual, Smooth change to -
B21	0.25 - 0.6 m	Yellowish red (5YR4/7-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Many (>5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Medium (2-5mm) macropores, Wet; Firm consistence; Common cutans, 10-50% of ped faces or walls coated; Field pH 8 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Clear, Smooth change to -
B22	0.6 - 1.35 m	Yellowish red (5YR4/7-Moist); , 7.5YR5/4; Medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Common (1-5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Common cutans, 10-50% of ped faces or walls coated; Field pH 8.5 (Raupach); Few, very fine (0-1mm) roots;

#### Morphological Notes

A11 Pit full to the brim with water! Very hard to describe due to water oozing out. The B22 is fairly impervious.

#### Observation Notes

Mitchell Soil Profile Class, Moderately Drained Phase, Compacted bare surface = high runoff into pit.

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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	6.7A	0.035A	3E	1.4	0.8	0.1			5.3D	
0.3 - 0.35	8.5A	0.086A								
0.7 - 0.75	9.1A	0.412A	5.1E	10.1	0.5	2.8			18.5D	
1.3 - 1.35	9.2A	0.604A								

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							1.56		31.9A	36.3	13.5	18.3
0.3 - 0.35							1.60					
0.7 - 0.75							1.55		25.2A	24	8.7	42
1.3 - 1.35							1.51					

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
m				g/g -		m3/m3			mm/h
0.1 - 0.15	0.035A			0.13G				0.06D	
0.3 - 0.35	0.064A			0.21G				0.16D	
0.7 - 0.75	0.067A			0.21G				0.16D	
1.3 - 1.35	0.08A			0.23G				0.16D	

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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)