

**Project Name:** Soils of the Lower Macquarie Valley, New South Wales  
**Project Code:** Macquarie **Site ID:** 534 **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>	6480733 AMG zone: 55	<b>Runoff:</b>	Slow
<b>Easting/Lat.:</b>	581200 Datum: AGD66	<b>Drainage:</b>	Moderately well 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:**

**Soil Classification**

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

<b>ASC Confidence:</b>		<b>Principal Profile Form:</b>	Gn3.12
Confidence level not specified		<b>Great Soil Group:</b>	N/A

**Site Disturbance:** Complete clearing. Pasture, native or improved, cultivated at some stage

**Vegetation:**

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

**Surface Coarse Fragments:**

**Profile Morphology**

A1	0 - 0.18 m	Dark brown (7.5YR3/4-Moist); ; Medium clay; Weak 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, Common (1-5 per 0.01m <sup>2</sup> ) Medium (2-5mm) macropores, Moist; Weak consistence; Field pH 7 (Raupach); Many, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Many, medium (2-5mm) roots; Clear, Smooth change to -
B21	0.18 - 0.65 m	Yellowish red (5YR3/6-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-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, Common (1-5 per 0.01m <sup>2</sup> ) Medium (2-5mm) macropores, Moist; Weak consistence; Many cutans, >50% of ped faces or walls coated; Field pH 7 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Clear, Smooth
B22	0.65 - 1.1 m	Yellowish red (5YR5/5-Moist); ; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; 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, Common (1-5 per 0.01m <sup>2</sup> ) Medium (2-5mm) macropores, Moderately moist; Weak consistence; Common cutans, 10-50% of ped faces or walls coated; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Diffuse, Smooth change to -
B23	1.1 - 1.4 m	Brown (7.5YR5/4-Moist); ; Silty clay; Moderate grade of structure, 10-20 mm, Polyhedral; 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, Common (1-5 per 0.01m <sup>2</sup> ) Medium (2-5mm) macropores, Wet; Weak consistence; Common cutans, 10-50% of ped faces or walls coated; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8 (Raupach); Few, very fine (0-1mm) roots;

**Morphological Notes**

A1 Many large infilled root channels in the B22

**Observation Notes**

Byron Soil Profile Class

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**Site Notes**

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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	6.2A	0.039A	5.9E	2	0.7	0.1			8.7D	
0.3 - 0.35	7.4A	0.04A								
0.7 - 0.75	8.6A	0.153A	12.1E	6.5	0.4	0.3			19.3D	
1.3 - 1.35	8.8A	0.148A								

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							1.48		4.4A	23.6	38.2	33.9
0.3 - 0.35							1.54					
0.7 - 0.75							1.47		0.4A	28.8	38	32.9
1.3 - 1.35							1.29					

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	0.032A			0.2G				0.12D	
0.3 - 0.35	0.053A			0.23G				0.17D	
0.7 - 0.75	0.053A			0.22G				0.13D	
1.3 - 1.35	0.031A			0.3G				0.14D	

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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)
XRD_C_II	Illite - X-Ray Diffraction
XRD_C_Kt	Kaolinite - X-Ray Diffraction
XRD_C_St	Smectite - X-Ray Diffraction