

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed354 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> W.T. Ward	<b>Locality:</b> stock route, at Twelve Mile Hill
<b>Date Desc.:</b> 24/07/87	<b>Elevation:</b> 361 metres
<b>Map Ref.:</b> Sheet No. : 8837_N 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6653700 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 780900 Datum: AGD66	<b>Drainage:</b> No Data

#### Geology

<b>ExposureType:</b> Undisturbed soil core	<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> No Data	<b>Relief:</b> No Data
<b>Elem. Type:</b> Hillcrest	<b>Slope Category:</b> Gently inclined
<b>Slope:</b> 3 %	<b>Aspect:</b> 360 degrees

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b> N/A	<b>Mapping Unit:</b> N/A
<b>ASC Confidence:</b> Confidence level not specified	<b>Principal Profile Form:</b> Dr2.32
	<b>Great Soil Group:</b> Red podzolic soil

#### Site Disturbance:

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A1	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Brown (10YR4/3-Dry); ; Sandy loam; Weak grade of structure, 5-10 mm, Subangular blocky; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, Sandstone, coarse fragments; Field pH 5.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A2	0.1 - 0.22 m	Light brown (7.5YR6/4-Moist); , 7.5YR84, 2-10% , 15-30mm, Distinct; Fine sandy loam; Massive grade of structure; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, Sandstone, coarse fragments; Field pH 5.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Wavy change to -
B21	0.22 - 0.3 m	Yellowish red (5YR4/6-Moist); , 7.5YR84, 0-2% , 5-15mm, Distinct; , 5YR32, 0-2% , 0-5mm, Faint; Light medium clay; Strong grade of structure, 5-10 mm, Subangular 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; 50-90%, coarse gravelly, 20-60mm, angular tabular, Sandstone, coarse fragments; Field pH 5.8 (pH meter); Few, fine (1-2mm) roots;
B22	0.3 - 0.55 m	Dark reddish brown (2.5YR3/4-Moist); , 5YR53, 0-2% , 0-5mm, Distinct; Light clay; Strong grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; 90-100%, coarse gravelly, 20-60mm, angular tabular, Sandstone, coarse fragments; Field pH 5.8 (pH meter); Common, coarse (>5mm) roots; Diffuse, Smooth change to -
C1	0.55 - 1 m	Reddish brown (5YR5/4-Moist); , 2.5Y82, 20-50% , 30-mm, Prominent; Light clay; Massive grade of structure; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 90-100%, coarse gravelly, 20-60mm, angular platy, Sandstone, coarse fragments; Field pH 8 (pH meter); Few, fine (1-2mm) roots;
C2	1 - 1.52 m	Reddish yellow (7.5YR6/6-Moist); , 2.5Y84, 0-2% , 30-mm, Prominent; Light clay; Massive grade of structure; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Rigid consistence; 90-100%, coarse gravelly, 20-60mm, angular platy, Sandstone, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;

#### Morphological Notes

A1 Lower part of A1 is quite massive. The mottles at 30-40 might be due to reduction during temporary waterlogging in fissures. They occur beside root channels. At 70-80 gley colours occur in fissures. Shallow red podzolic soil on sandstone. T

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A2                                      he textures determined for 4, 5, 6 are medium clay, medium clay, light clay.

**Observation Notes**

Parent Rock: residual, sandstone, Pilliga Sandstone

**Site Notes**

Abundant tabular iron-stained rock plates and fragments on surface. Groundsurface slightly rill eroded. This site is 285 paces S of 338.

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Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na Cmol (+)/kg	Acidity		%
0 - 0.1	5.01A	0.043A	0.74B	<0.1	0.62	0.07			
0.1 - 0.2	4.98A	0.03A	<0.1B	1.17	0.43	0.01			
0.2 - 0.3	5.25A	0.043A	0.21B	3.82	0.57	0.4			
0.3 - 0.4	5.38A	0.061A	<0.1B	5.74	0.59	0.71			
0.7 - 0.8	8.01A	0.279A	<0.1B	10.84	0.68	2.61			
1.2 - 1.3	8.76A	0.371A	<0.1B	6.86	0.55	2.36			

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**Laboratory Analyses Completed for this profile**

15A2_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6B3	Total organic carbon - high frequency induction furnace, infrared
7B1	Water soluble nitrate - automated colour
9B1	Bicarbonate-extractable phosphorus - manual colour
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method