

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed046 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	D. McGarry	<b>Locality:</b>	Geoff Barden, Glenwarrie
<b>Date Desc.:</b>	07/07/86	<b>Elevation:</b>	238 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6672500 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	769300 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>	Terrace flat	<b>Slope Category:</b>	Very gently sloped
<b>Slope:</b>	1 %	<b>Aspect:</b>	195 degrees

**Surface Soil Condition (dry):** Self-mulching, Recently cultivated

#### 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>	Ug5.15
		<b>Great Soil Group:</b>	Brown clay

**Site Disturbance:** Cultivation. Rainfed

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark reddish brown (5YR3/2-Moist); , 5YR31, 0-2% , 0-5mm, Distinct; Light medium clay; Moderate grade of structure, 5-10 mm, Angular blocky; Moderate grade of structure, 2-5 mm, Granular; Smooth-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark reddish brown (5YR3/2-Moist); , 5YR31, 0-2% , 0-5mm, Distinct; Light medium clay; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.7 m	Dark reddish brown (5YR3/3-Moist); , 7.5YR84, 2-10% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 10-20 mm, Lenticular; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 9.5 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B21	0.7 - 1 m	Dark reddish brown (5YR3/3-Moist); , 7.5YR84, 2-10% , 5-15mm, Distinct; Medium heavy clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 9.5 (pH meter); Few, very fine (0-1mm) roots;
B22	1 - 1.74 m	Dark reddish brown (5YR3/3-Moist); , 7.5YR32, 2-10% , 0-5mm, Distinct; , 7.5YR56, 2-10% , 0-5mm, Distinct; Light medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 9 (pH meter); Sharp, Smooth change to -
C	1.74 - 2.71 m	Dark brown (7.5YR3/2-Moist); , 7.5YR74, 2-10% , 0-5mm, Distinct; Light clay; Massive grade of structure; Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 9.2 (pH meter);

#### Morphological Notes

A11 The top 1cm of the profile is loose, very fine mulching, crumb. Carbonate in layer O3 is fine earth and fills channels. Profile is moist to 55cm. From 100cm there is obvious fine sand running throughout the clay - in cracks and faunal chann

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A12                      els. From 180cm, there is very evident sedimentary layering to 271cm. There are both sand bands (174-179, 181-188, 193-201, 231-233) and clay bands, the latter with many fine bands of light coloured silt/CaCO<sub>3</sub> throughout. This is not a Ug5.  
A13                      15. Difficult to class it as anything else as it is VC1 above and VC5 below.

**Observation Notes**

Parent Rock: alluvial sediment, mixed texture, with lime, clay first terraced fan

**Site Notes**

Very soft surface. Gently undulating land with patches of reddish-brown soil showing through the more widespread dark brown soil. No surface stones. Sandy layer at 190cm depth.

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**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	8.88A	0.123A	22.96B	7.37	1.07	0.6			
0 - 0.1	8.76A	0.183A	21.35B	11.75	0.73	1.26			
0.1 - 0.2	9.15A	0.207A	19.09B	15.77	0.38	2.42			
0.3 - 0.4	9.41A	0.314A	12.1B	18.03	0.37	5.26			
0.7 - 0.8	9.63A	0.546A	4.98B	21.67	0.47	10.01			
1.2 - 1.3	9.33A	0.943A	5.44B	15.37	0.57	8.03000			
						1			
2.5 - 2.6	9.28A	0.799A	7.87B	14.11	0.41	6.91			

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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