

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed192 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	D. McGarry	<b>Locality:</b>	R.M.(Ross) Fordham, Wonga Plains
<b>Date Desc.:</b>	12/06/86	<b>Elevation:</b>	392 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6652900 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	785200 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>	Pediment	<b>Slope Category:</b>	Very gently sloped
<b>Slope:</b>	1 %	<b>Aspect:</b>	170 degrees

**Surface Soil Condition (dry):** Surface crust, 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>	Ug5.13
		<b>Great Soil Group:</b>	Brown clay

**Site Disturbance:** Cultivation. Rainfed

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); ; Light clay; Moderate grade of structure, 20-50 mm, Lenticular; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, cobbly, 60-200mm, subangular, Basalt, coarse fragments; Field pH 7 (pH meter); Common, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark reddish brown (5YR3/2-Moist); ; Light medium clay; Strong grade of structure, 10-20 mm, Lenticular; Strong grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; 0-2%, medium gravelly, 6-20mm, subangular, Basalt, coarse fragments; Field pH 7 (pH meter); Many, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark reddish brown (5YR3/2-Moist); ; Medium clay; Strong grade of structure, 10-20 mm, Lenticular; Strong grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 7.5 (pH meter); Many, very fine (0-1mm) roots; Clear, Smooth change to -
B2	0.55 - 0.66 m	Reddish brown (5YR4/4-Moist); ; 5YR32, 10-20% , 5-15mm, Distinct; Medium clay; Strong grade of structure, 5-10 mm, Lenticular; Strong grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; 2-10%, coarse gravelly, 20-60mm, subangular, Basalt, coarse fragments; Field pH 7.5 (pH meter); Common, very fine (0-1mm) roots; Abrupt, Smooth change to -
C1	0.66 - 1 m	White (10YR8/1-Moist); ; 7.5YR44, 10-20% , 5-15mm, Distinct; Clay loam; Massive grade of structure; Moderately moist; Field pH 7.7 (pH meter); Few, very fine (0-1mm) roots;
C2	1 - 1.6 m	White (10YR8/1-Moist); ; 7.5YR44, 2-10% , 0-5mm, Distinct; Clay loam; Massive grade of structure; Moderately moist; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;

#### Morphological Notes

A11	0-2cm is fine (2mm-4mm) crumb material. Extra layer (55-65cm) is the B2, present at the junction of A and C. Carbonate present in layer .06 as soft segregations: 2kn2. Type of basalt: aa, as there are many vesicles in weathered material. Ba salt below 90cm is very hard. Field texture samples 5 and 6 estimated from lab results.
A12	

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**Site Notes**

Weathered basalt contact 64cm. Rock at 160cm stops drilling. Surface crust very weak, breaks to coarse self mulching. Abundant stones and rocks on surface.

Parent Rock: residual, basalt, Nandewar Volcanics

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
		dS/m	Ca	Mg	K	Na	Acidity			
m							cmol (+)/kg			%
0 - 0.02	6.78A	0.189A	30.71B	7.58	3.89	0.21				
0 - 0.1	6.73A	0.287A	39.06B	6.79	3.41	0.11				
0.1 - 0.2	7.36A	0.13A	56.14B	7.48	0.91	0.36				
0.3 - 0.4	7.21A	0.109A	53.83B	6.61	0.36	0.58				
0.55 - 0.65	7.54A	0.077A	62.42B	8.34	0.33	0.73				
0.7 - 0.8	7.84A	0.049A	61.69B	7.14	0.12	0.93999				
						99				
1.2 - 1.3	8.52A	0.117A	51.67B	4.93	0.44	0.78				

Depth  m	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	mg/kg	%	%	%	Mg/m3	GV	CS	FS %	Silt Clay
0 - 0.02	<0.1B	5.09C									24.7 49
0 - 0.1	<0.1B	3.8C	190.8J								19.6 54.1
0.1 - 0.2	<0.1B	2.4C	81.8J								16.8 60.4
0.3 - 0.4	<0.1B	1.92C	70.8J								14.6 67.3
0.55 - 0.65	<0.1B	1.38C	77.1J								14.5 63.6
0.7 - 0.8	<0.1B	0.33C	66.2J								22.4 42.2
1.2 - 1.3	2.1B	0.1C	7.6J								35.2 22.3

[illegible]

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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