

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed055 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> W.T. Ward	<b>Locality:</b> Auscott(Togo), Togo
<b>Date Desc.:</b> 12/12/86	<b>Elevation:</b> 192 metres
<b>Map Ref.:</b> Sheet No. : 8837_N 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6670700 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 745800 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 plain	<b>Slope Category:</b> Level
<b>Slope:</b> 0 %	<b>Aspect:</b> No Data

**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> Ug5.16
	<b>Great Soil Group:</b> Grey clay

**Site Disturbance:** Cultivation. Irrigated, past or present

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11p	0 - 0.1 m	Dark greyish brown (10YR4/2-Moist); Dark greyish brown (10YR4/2-Dry); ; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 2-5 mm, Granular; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, angular, Quartz, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A12	0.1 - 0.25 m	Dark grey (10YR4/1-Moist); ; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, angular, Quartz, coarse fragments; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark grey (10YR4/1-Moist); ; Medium heavy clay; Moderate grade of structure, 100-200 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; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
A14	0.55 - 1.2 m	Dark grey (10YR4/1-Moist); ; Medium clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9.2 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	1.2 - 1.9 m	Grey (10YR5/1-Moist); ; Medium clay; 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; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9.2 (pH meter);
B22	1.9 - 2.95 m	Brown (10YR4/3-Moist); ; Medium heavy clay; Weak grade of structure, 50-100 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Rigid consistence; Few (2 - 10 %), Calcareous, Extremely coarse (> 60 mm), Nodules; Field pH 9.2 (pH meter);

#### Morphological Notes

A11p At 10-20cm one or two carbonate nodules were observed. The lime segregations from

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A12                                      most throughout, but prominent at 260; larger lumps first appear at 200. A deep grey cracking clay on dull yellow brown clay. Core kept in office at Samford.

**Observation Notes**

Parent Rock: alluvial sediment, clay, mixed texture, with lime parna on fourth fan, Namoi

**Site Notes**

This hole was drilled to 367cm. From 395-320 an infilled crack occurs - soil similar to core above. Good slickenside occurs at 320-340 with large rounded and irregular calcium carbonate nodules up to 50mm diameter. Manganese stains increase

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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	Acidity		%
						Cmol	(+)/kg		
0 - 0.02	8.52A	0.21A	23.62B	16.77	2.7	1.6			
0 - 0.1	8.26A	0.186A	21.83B	15.9	1.7	2.52			
0.1 - 0.2	8.72A	0.161A	22.15B	18.26	1.39	3.5			
0.3 - 0.4	9.16A	0.248A	19.48B	17.62	1.21	6.99			
0.7 - 0.8	9.03A	0.506A	17.22B	18.66	1.39	9.98			
1.2 - 1.3	8.95A	0.712A	16.75B	17.68	1.51	9.71999			
						9			
2.5 - 2.6	9.06A	0.622A	14.25B	16.67	1.12	9.99			

Depth m	CaCO <sub>3</sub>	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	Mg/kg	%	%	%	Mg/m <sup>3</sup>	GV	CS	FS %	Silt Clay
0 - 0.02	0.1B	8.65C									16.2 65.5
0 - 0.1	<0.1B	0.72C	22.1J								16.1 65.2
0.1 - 0.2	0.1B	0.57C	8.1J								19.3 64.1
0.3 - 0.4	0.4B	0.44C	3.5J								16.7 64.2
0.7 - 0.8	0.5B	0.38C	20J								17.3 66.6
1.2 - 1.3	0.8B	0.25C	19.9J								18.8 66.9
2.5 - 2.6	1.2B	0.11C	12.5J								19.8 66.8

[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