

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed063 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> G.M. Roberts	<b>Locality:</b> R.B.(Rob) Walker, Keera
<b>Date Desc.:</b> 02/08/85	<b>Elevation:</b> 238 metres
<b>Map Ref.:</b> Sheet No. : 8837_N 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6670100 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 767900 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> 270 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> Ug5.15
	<b>Great Soil Group:</b> Black earth

**Site Disturbance:** Cultivation. Rainfed

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11p	0 - 0.1 m	Very dark grey (10YR3/1-Moist); Very dark greyish brown (10YR3/2-Dry); ; Light clay; Weak grade of structure, 2-5 mm, Subangular blocky; Moderate grade of structure, <2 mm, Granular; Earthy 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); Few, fine (1-2mm) roots; Abrupt, Smooth change to -
A12	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, coarse gravelly, 20-60mm, rounded tabular, Quartz, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark brown (7.5YR3/2-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 10-20 mm, Lenticular; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
A14	0.55 - 1.1 m	Dark brown (7.5YR3/2-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 100-200 mm, Prismatic; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
B2k	1.1 - 2.33 m	Brown (7.5YR4/2-Moist); , 10YR83, 2-10% , 0-5mm, Distinct; Medium clay; Moderate grade of structure, 100-200 mm, Prismatic; Moderate grade of structure, 5-10 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; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
2B21	2.33 - 2.75 m	Pink (7.5YR7/4-Moist); , 7.5YR52, 10-20% , 15-30mm, Distinct; , 10YR83, 0-2% , 0-5mm, Distinct; Light clay; Massive grade of structure; Weak grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; 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, Fine (0 - 2 mm), Nodules; Field pH 6.7 (pH meter); Gradual, Smooth change to -

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2B22      2.75 - 2.97 m      Brown (10YR5/3-Moist); , N30, 10-20% , 15-30mm, Prominent; , 7.5YR42, 2-10% , 15-30mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm, Prismatic; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm<sup>2</sup>) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Few (2 - 10 %), Manganiferous, Coarse (6 - 20 mm), Veins; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 6.7 (pH meter);

**Morphological Notes**

A11p      Large amounts of sand infill on ped faces throughout first metre. Burial at 275cm. Large amount of manganese at 275-298. Visible crack depth is 38cm.

**Observation Notes**

Parent Rock: alluvial sediment, clay, fifth (eroded) fan

**Site Notes**

Middle terrace, eroded, undulating. Waterworn gravel on surface and silcrete up to 150mm.

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**Laboratory Test Results:**

Depth  m	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
		dS/m	Ca	Mg	K	Na			
0 - 0.02	7.76A	0.079A	20.62B	3.69	1.28	0.46			
0 - 0.1	7.71A	0.15A	20.31B	4.04	1.29	0.33			
0.1 - 0.2	8.46A	0.08A	23.49B	4.85	0.77	0.57			
0.3 - 0.4	9.1A	0.142A	24.01B	6.15	0.42	1.6			
0.7 - 0.8	9.41A	0.251A	26.44B	7.64	0.51	5.58			
1.2 - 1.3	8.86A	0.549A	22.7B	7.35	0.47	5.67			
2.5 - 2.6	7.71A	0.64A	25.49B	8.39	0.36	5.49			
2.75 - 2.85	7.38A	0.495A	21.79B	6.71	0.33	4.67			

Depth  m	CaCO3	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	1.42C									12.1 32.3
0 - 0.1	<0.1B	1.8C	44.2J								12.2 31.1
0.1 - 0.2	<0.1B	1.07C	24.9J								12.7 36.1
0.3 - 0.4	0.8B	0.8C	8.6J								14.5 37.2
0.7 - 0.8	1.8B	0.83C	12.7J								15.9 46.7
1.2 - 1.3	2.7B	0.1C	7.2J								16.8 45.3
2.5 - 2.6	<0.1B	0.09C	6.9J								12.4 52.3
2.75 - 2.85	<0.1B	0.06C	7J								14.9 46.8

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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