Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed167 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: D. McGarry Locality: M.H.(Mark) & R.E.W. Lampe, Bobbiwaa

Date Desc.: Elevation: 03/06/86 223 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6655900 AMG zone: 55 Runoff: No Data 764800 Datum: AGD66 Easting/Lat.: Drainage: No Data

**Geology** 

ExposureType: Undisturbed soil core Conf. Sub. is Parent. Mat.: No Data Geol. Ref.: No Data Substrate Material: No Data

Land Form

Rel/Slope Class:No DataPattern Type:No DataMorph. Type:No DataRelief:No DataElem. Type:Terrace flatSlope Category:LevelSlope:0 %Aspect:No Data

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

**Erosion:** 

**Soil Classification** 

Australian Soil Classification:Mapping Unit:N/AN/APrincipal Profile Form:Ug5.15ASC Confidence:Great Soil Group:Grey clay

Confidence level not specified

Site Disturbance: Cultivation. Rainfed

Vegetation:

**Surface Coarse Fragments:** 

**Profile Morphology** 

A11p 0 - 0.08 m Very dark greyish brown (10YR3/2-Moist); Very dark greyish brown (10YR3/2-Dry); ; Light medium clay; Moderate grade of structure, 2-5 mm, Granular; Moderate grade of structure, 10-20 mm, Subangular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2)

Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter);

Abrupt, Smooth change to -

A12 0.08 - 0.25 m Very dark greyish brown (10YR3/2-Moist); ; Medium clay; Weak grade of structure, 20-50 mm,

Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 8 (pH

meter); Few, very fine (0-1mm) roots;

A13 0.25 - 0.55 m Very dark greyish brown (10YR3/2-Moist); , 10YR54, 0-2% , 0-5mm, Distinct; Medium clay;

Weak grade of structure, 20-50 mm, Subangular 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 8.5 (pH meter);

Few, very fine (0-1mm) roots;

A14 0.55 - 1 m Very dark greyish brown (10YR3/2-Moist); , 10YR54, 0-2% , 0-5mm, Distinct; , 10YR84, 0-2% ,

0-5mm, Distinct; Heavy clay; Weak grade of structure, 10-20 mm, Lenticular; Weak 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; Very firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.7 (pH meter); Few, very fine (0-

1mm) roots; Diffuse, Smooth change to -

B2 1 - 1.67 m Reddish brown (5YR4/4-Moist); , 10YR41, 2-10% , 5-15mm, Distinct; Light medium clay; Weak

grade of structure, 5-10 mm, Cast; Massive grade of structure; Rough-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8.8

(pH meter); Sharp, Smooth change to -

2B2 1.67 - 2.63 m Brown (7.5YR5/4-Moist); , 10YR41, 0-2% , 5-15mm, Distinct; Medium clay; Moderate grade of

structure, 100-200 mm, Lenticular; Weak 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, Fine (0 - 2

mm), Nodules; Field pH 9 (pH meter);

**Morphological Notes** 

A11p This profile is quite wet to 100cm, so may be masking structure. From 120cm, the coarse

sand increases to 167 where there is a strong sedimentary break but not soil break,

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thus no buried soil (WTW). But this may equally well be a soil break (DMcG).  $\ensuremath{\mathsf{MVpH}}.$ 

## **Observation Notes**

Parent Rock: alluvial sediment, mixed texture, non-calcareous, mixed texture, with lime parna on third fan

## Site Notes

Fallow after wheat. A grey clay surface, well mulched. Very flat. No surface stones visible.

Project Name: Project Code: Agency Name: Soil Studies in the Lower Namoi Valley EDGEROI Site ID: ed167 CSIRO Division of Soils (QLD) Observation ID: 1

## **Laboratory Test Results:**

Depth	рН	1:5 EC	Exchangeable Cations			9		e CEC	:	ECEC	. E	SP
m		dS/m	Ca	Mg	К	Na Cmol (	Acidity +)/kg				•	%
0 - 0.02	8.15A	0.143A	24.19B	14.85	2.1	0.36						
0 - 0.08	8.19A	0.151A	24B	16.66	2.1	0.68						
0.1 - 0.2	8.31A	0.135A	24.25B	17.68	1.41	1.19						
0.3 - 0.4	8.8A	0.11A	22.99B	18.42	0.85	2.3						
0.7 - 0.8	9.19A	0.235A	17.81B	18.53	0.98999 99	4.87						
1.2 - 1.3	9.26A	0.168A	10.29B	15.19	0.85	4.4						
2.5 - 2.6	9.07A	0.485A	15.74B	26.22	1.28	6.77						
Depth m	CaCO3	Organic C %	Avail. P mg/kg	Total P %	I Total N %	Tota K %	Density		article CS	Size FS %	Analysis Silt	
0 - 0.02	0.1B	0.94C									17.2	54.5
0 - 0.08	0.2B	0.97C	15.9J								15.9	52.7
0.1 - 0.2	0.1B	0.87C	6.9J								16.4	54.2
0.3 - 0.4	0.1B	0.7C	7.2J								16.8	52.6
0.7 - 0.8	0.9B	0.48C	19.2J								16.1	51.7
1.2 - 1.3	0.1B	0.19C	14.8J								9.5	34.9
2.5 - 2.6	0.9B	0.14C	12.6J								14.9	58.3
Depth	COLE	COLE Gravimetric/Volumetric Water Contents Sat. 0.05 Bar 0.1 Bar 0.5 Bar 1 Bar 5 Bar 15 Bar								at	K unsat	:
m		out.	0.00 Bai		g/g - m3/m		o Dui	. o Dui	mm	ı/h	mm/h	

<sup>0 - 0.02</sup> 0 - 0.08 0.1 - 0.2 0.3 - 0.4 0.7 - 0.8 1.2 - 1.3 2.5 - 2.6

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## **Laboratory Analyses Completed for this profile**

15A2\_CA Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 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 Silt (%) - Coventry and Fett pipette method