Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed056 Observation ID: 1

Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Auscott(Togo), Togo Desc. By: W.T. Ward Locality:

Date Desc.: Elevation: 08/01/87 193 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6670600 AMG zone: 55 Runoff: No Data 748500 Datum: AGD66 Easting/Lat.: Drainage: No Data

Geology

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

Land Form

Rel/Slope Class: No Data Pattern Type: No Data Morph. Type: No Data Relief: No Data Elem. Type: Slope Category: Terrace plain Level Aspect: No Data Slope: 0 %

Surface Soil Condition (dry): Self-mulching

Erosion:

Soil Classification

Australian Soil Classification: N/A Mapping Unit: Principal Profile Form: Ua5.15 ASC Confidence: **Great Soil Group:** Grey clay

Confidence level not specified

Site Disturbance: Cultivation. Irrigated, past or present, Complete clearing. Pasture, native or improved, cultivated at some stage,

Vegetation:

Surface Coarse Fragments:

<u>Profile</u>	Morp	<u>hology</u>	_
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A11	0 - 0.1 m	Grey (10YR5/1-Moist); Dark grey (10YR4/1-Dry); , 10YR72, 2-10% , 0-5mm, Distinct; Medium heavy clay; Strong grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.2 m	Dark grey (10YR4/1-Moist); ; Medium heavy clay; Strong grade of structure, 100-200 mm, Prismatic; 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; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -

2A11 0.2 - 0.55 m Dark grey (10YR4/1-Moist); ; Medium clay; Moderate grade of structure, 100-200 mm, Prismatic; Moderate grade of structure, 20-50 mm, Lenticular; 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 8.5 (pH meter); Few, very fine (0-1mm) roots;

0.55 - 1 m Dark grey (10YR4/1-Moist); , 10YR72, 0-2% , 0-5mm, Distinct; , 10YR72, 0-2% , 0-5mm, Distinct; 2A12 Medium clay; Moderate grade of structure, 50-100 mm, Angular blocky; Moderate grade of structure, 20-50 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) 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); Diffuse, Smooth change

2B21 1 - 1.9 m Brown (7.5YR4/4-Moist); , 10YR72, 0-2% , 5-15mm, Distinct; , 7.5YR42, 2-10% , 5-15mm, Distinct; 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; Very firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm),

Nodules; Field pH 9 (pH meter);

Brown (7.5YR4/4-Moist); , 10YR73, 0-2% , 5-15mm, Prominent; , 5YR54, 0-2% , 0-5mm, 2B22 1.9 - 3.05 m

Distinct; Medium clay; Weak grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 10-20 mm, Subangular 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, Medium (2 -6 mm), Nodules, Field pH 9 (pH meter);

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 $2B23 \qquad 3.05 - 3.58 \ m \qquad Brown \ (7.5YR4/4-Moist); \ , \ 7.5YR42, \ 0-2\% \ , \ 5-15mm, \ Distinct; \ , \ 5YR54, \ 0-2\% \ , \ 0-5mm, \ Distinct; \)$

Medium clay; Weak grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 8.7 (pH

meter);

Morphological Notes

The top 10cm contains thin laminae of sand as well as inwashed sand. At 33cm a small

snail shell was found. The subsoil (120-130cm) colour resembles the colour of the MVpH subsoils. Many small manganese flecks occur at 350-358cm, as well as

A12 coarse carbonate nodules at 320-330cm. This profile seems to have relatively thin flood

deposits (note sand laminae) over a prior soil like MVpH or alternatively, the oldest

alluvium.

Observation Notes

Parent Rock: alluvial sediment, clay, floodplain

Site Notes

Small shells on surface due to ponding of Galathera Creek. Some cracks 840mm deep, but average 500mm. The cracks at this site are very big possibly due to extremes in water content. NB. By definition there are 50 cracks per metre as there a

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Laboratory Test Results:

Depth	рН	1:5 EC		hangeable			Exchangeable	CEC	;	ECEC	: 1	ESP
m		dS/m	Ca	Mg	K	Na Cmol (+	Acidity -)/kg					%
0 - 0.02	7.88A	0.13A	26.21B	14.27	2.33	1.79						
0 - 0.1	8.08A	0.127A	25.11B	14.37	1.39	2.28						
0.1 - 0.2	8.52A	0.137A	25.1B	13.58	1.29	3.65						
0.3 - 0.4	8.63A	0.188A	22.61B	12.4	1.1	5.84						
0.7 - 0.8	8.77A	0.442A	22.21B	12.73	1.13	9.05						
1.2 - 1.3	8.23A	1.727A	21.74B	14.78	1.33	12.34						
2.5 - 2.6	8.72A	1.253A	22.73B	14.24	1.37	12.16						
3.5 - 3.58	8.27A	1.04A	20.29B	12.44	1.1	11.08						
Depth	CaCO3	Organic	Avail.	Total	Total	Tota	l Bulk	F	article	Size	Analysis	5
		С	P	Р	N	K	Density	G۷	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 000	-O 4D	4.400									40.0	CE E
0 - 0.02	<0.1B 0.2B	1.13C 1.04C	47.01								16.8	
0 - 0.1 0.1 - 0.2	<0.1B	0.61C	47.2J 47J								17.8 17.4	
0.1 - 0.2	<0.1B	0.61C 0.56C	57.4J								17.4	
0.3 - 0.4	<0.1B	0.36C 0.44C	49.8J								16.9	
1.2 - 1.3	5.1B	0.44C 0.17C	16.9J								16.4	
2.5 - 2.6	0.8B	0.17C 0.08C	6J								14.1	
3.5 - 3.58	<0.1B	0.06C 0.05C	10.4J									70.8
3.5 - 3.56	<0.1D	0.050	10.45								12.3	70.0
Depth	COLE		Grav	imetric/Va	olumetric \	Nater Con	ntents		Ks	at	K unsa	
Dopu.	JJ	Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar		Bar		•	. unou	-
m					/g - m3/m				mm	/h	mm/h	

^{0 - 0.02}

^{0 - 0.02} 0 - 0.1 0.1 - 0.2 0.3 - 0.4 0.7 - 0.8 1.2 - 1.3 2.5 - 2.6 3.5 - 3.58

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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