Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed138 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: G.M. Roberts Locality: J.Amos/R.Simpson, Woodville

Date Desc.: Elevation: 24/07/85 294 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6660200 AMG zone: 55 Runoff: No Data 781300 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 Data

Elem. Type: Terrace flat Slope Category: Very gently sloped Slope: 1 % Aspect: 250 degrees

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification: Mapping Unit: N/A
N/A Principal Profile Form: Gn3.53
ASC Confidence: Great Soil Group: Brown clay

Confidence level not specified

Site Disturbance: Complete clearing. Pasture, native or improved, cultivated at some stage

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11 0 - 0.1 m Very dark greyish brown (10YR3/2-Moist); Very dark greyish brown (10YR3/2-Dry); , 5YR68, 2-10% , 5-15mm, Distinct; Sandy clay loam; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm)

macropores, Moderately moist; Field pH 6.8 (pH meter); Few, fine (1-2mm) roots;

A12 0.1 - 0.18 m Dark greyish brown (10YR4/2-Moist); , 5YR68, 2-10% , 5-15mm, Distinct; Light clay; Weak

grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Field pH 7.5 (pH meter);

Few, very fine (0-1mm) roots, Abrupt, Smooth change to -

B21 0.18 - 0.48 m Brown (7.5YR4/2-Moist); , 7.5YR56, 2-10% , 5-15mm, Distinct; Medium clay; Weak grade of

structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-

1mm) roots; Gradual, Smooth change to -

B22k 0.48 - 1 m Yellowish red (5YR4/6-Moist); , 7.5YR42, 10-20% , 15-30mm, Faint; , 10YR86, 2-10% , 5-15mm,

Prominent; Medium heavy clay; Moderate grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 2-5 mm, Angular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Common (10 - 20 %),

Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;

Yellowish red (5YR4/6-Moist); , 7.5YR42, 10-20%, 15-30mm, Faint; , 10YR86, 2-10%, 5-15mm, Prominent; Medium heavy clay; Moderate grade of structure, 50-100 mm, Prismatic; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH

meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -

B24 1.35 - 2.85 m Yellowish red (5YR4/6-Moist); , 10YR21, 20-50% , 5-15mm, Prominent; , 10YR84, 2-10% , 5-

15mm, Prominent; Medium heavy clay; Moderate grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 5-10 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; Common (10 - 20 %), Manganiferous, Medium (2 -6 mm), Soft segregations; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Very few (0 - 2 %), Gypseous,

Fine (0 - 2 mm), Crystals; Field pH 8.7 (pH meter);

Morphological Notes

1 - 1.35 m

B23k

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Large amounts of manganese soft segregations and nodules (20mm diameter) below 150. As manganese increases calcium carbonate decreases. There are worm casts at A11

Observation Notes

Parent Rock: , , second terraced fan

Site Notes

Rex Simpson manager. Probably fine self-mulching but 95% grass cover. Cracks difficult to see. Note burr medick. Creek channel is filled with recent yellowish brown sands. This soil is perhaps a RBE. 100y to north of site there are linear g

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Laboratory Test Results:

Depth	рН	1:5 EC		hangeable			Exchangeable	CEC	;	ECEC		ESP
m		dS/m	Ca	Mg	K	Na Cmol (Acidity +)/kg					%
0 - 0.02	6.5A	0.098A	8B	5.45	1.39	<0.01						
0 - 0.1	7.8A	0.066A	9.38B	5.18	1.1	0.12						
0.1 - 0.18	7.59A	0.062A	11.72B	6.59	0.72	0.11						
0.3 - 0.4	8.33A	0.132A	13.54B	13.86	0.53	0.45						
0.7 - 0.8	9.32A	0.199A	4.66B	16.33	0.34	2.19						
1.2 - 1.3	9.22A	0.545A	3.99B	18.12	0.35	5.45						
2.5 - 2.6	8.76A	0.603A	2.69B	21.3	0.41	5.69						
Depth	CaCO3	Organic	Avail.	Total	Total	Tota	al Bulk	F	article	Size	Analysis	S
		С	P	Р	N	K		GV	cs	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 000	-O 1D	2.640									10 E	240
0 - 0.02 0 - 0.1	<0.1B 0.1B	3.61C 2.11C	15 11									24.9 25.4
0 - 0.1	<0.1B		15.4J 5.1J								10.1 10	29.5
0.1 - 0.18	0.3B	0.95C	5.1J 1.8J								8.7	29.5 39
0.3 - 0.4	3B	0.93C 0.43C	<1J								9.6	36.3
1.2 - 1.3	3.1B	0.43C 0.2C	2.1J								10.4	
2.5 - 2.6	0.2B	0.2C 0.17C	4.7J								_	43.1
2.0 - 2.0	0.20	0.170	4.70								12.7	70.1
Depth	COLE	COLE Gravimetric/Volumetric Water Contents								at	K unsa	
Deptil	COLE	Sat.	0.05 Bar	0.1 Bar	0.5 Bar	water Co 1 Bar		5 Bar	ı, s	at	n unsa	
m		out.	0.00 Bai		/g - m3/m		o Dai 1	. Dui	mm	ı/h	mm/h	

0 - 0.02 0 - 0.1 0.1 - 0.18

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