Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed044 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward Locality: stock route, near Bundaroo

Date Desc.: Elevation: 10/12/86 227 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6672600 AMG zone: 55 Runoff: No Data 763800 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 plainSlope Category:LevelSlope:0 %Aspect:No Data

Surface Soil Condition (dry): Self-mulching, Trampled

Erosion:

Soil Classification

Australian Soil Classification:Mapping Unit:N/AN/APrincipal Profile Form:Ug5.16ASC Confidence:Great Soil Group:Grey clay

Confidence level not specified

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

Vegetation:

Surface Coarse Fragments:

Pro	<u>otile</u>	Mor	pho	<u>logy</u>

A11 0 - 0.1 m Dark brown (7.5YR3/2-Moist); Dark brown (7.5YR3/2-Dry); ; Heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 7.5 (pH meter); Few, very fine (0-

A12 0.1 - 0.25 m Dark brown (7.5YR3/2-Moist); ; 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; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 8 (pH meter); Few, very fine (0-1mm)

roots;

A13 0.25 - 0.75 m Dark brown (7.5YR3/2-Moist); , 7.5YR74, 0-2% , 0-5mm, Faint; Medium heavy clay; Moderate

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; 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 -

B21 0.75 - 1 m Dark reddish grey (5YR4/2-Moist); , 5YR63, 2-10% , 5-15mm, Distinct; , 7.5YR32, 2-10% , 5-

15mm, Faint; Medium clay; Weak 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; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Very few (0 - 2

%), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 9 (pH meter);

 $B22 \qquad 1 - 1.9 \ m \\ \qquad Brown \ (7.5YR5/4-Moist); \ , \ N30, \ 2-10\% \ , \ 0-5mm, \ Prominent; \ , \ 7.5YR52, \ 0-2\% \ , \ 0-5mm, \ Distinct; \\ \qquad \qquad \\$

Medium clay; Strong grade of structure, 10-20 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);

B23 1.9 - 2.9 m Brown (7.5YR4/2-Moist); , 2.5YR44, 2-10% , 0-5mm, Distinct; , 7.5YR62, 0-2% , 0-5mm,

Distinct; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Strong consistence; Very few (0

- 2%), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter);

Morphological Notes

Sample 070-080cm appeared to be very tough and could not be fractured using the

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A12 .5YR4/4 cast granules occur below 120cm. A horizon could be subdivided on structure

(below 20cm). Profile typifies oldest planar surface?

Observation Notes

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

Site Notes

2.4 km NE along stockroute, near fence line crossing stock route. Seedbed prepared in fields on either side. Not many cracks.

Soil Studies in the Lower Namoi Valley EDGEROI Site ID: ed044 CSIRO Division of Soils (QLD) Observation ID: 1

Project Name: Project Code: Agency Name:

Laboratory Test Results:

m dS/m Ca Mg K Na Acidity 0 - 0.02 6.96A 0.132A 19.26B 8.73 2.46 0.76 0 - 0.1 6.77A 0.162A 20.43B 9.719999 1 1.44 0.1 - 0.2 8.43A 0.155A 21.87B 11.94 0.62 2.82 0.3 - 0.4 9.2A 0.298A 20.27B 11.28 0.47 6.19 0.7 - 0.8 8.96A 0.575A 21.29B 12.9 0.89 8.61 1.2 - 1.3 8.96A 0.639A 22.7B 14.57 1.09 8.93 2.5 - 2.6 8.72A 0.62A 22.05B 16.37 1.21 9.62 Depth CaCO3 Organic Avail. Total Total Bulk Particle Size Analysis m % % % Mg/m3 % W Lay 0 - 0.02 <0.1B 2.24C 2.24J 2.24 7.7 2.26 48.7 <th>Donth</th> <th>pH</th> <th>1:5 EC</th> <th>Eva</th> <th>hanaaahla</th> <th>Cations</th> <th></th> <th>Evahangaabla</th> <th>CEC</th> <th></th> <th>ECEC</th> <th></th> <th>ESP</th>	Donth	pH	1:5 EC	Eva	hanaaahla	Cations		Evahangaabla	CEC		ECEC		ESP
m dS/m Cmol (+)/kg % 0 - 0.02 6.96A 0.132A 19.26B 8.73 2.46 0.76 0 - 0.1 6.77A 0.162A 20.43B 9.719999 1 1.44 0.1 - 0.2 8.43A 0.155A 21.87B 11.94 0.62 2.82 0.3 - 0.4 9.2A 0.298A 20.27B 11.28 0.47 6.19 0.7 - 0.8 8.96A 0.575A 21.29B 12.9 0.89 8.61 1.2 - 1.3 8.96A 0.639A 22.7B 14.57 1.09 8.93 2.5 - 2.6 8.72A 0.62A 22.05B 16.37 1.21 9.62 Depth CaCO3 Organic Avail. Total Total Bulk Particle Size Analysis m % % Mg/m3 % V CS FS Silt Clay 0 - 0.02 <0.1B 2.24C 22.4J 22.4 22.4 22.4 22	Depth	рп			-			Exchangeable Acidity	CEC		ECEC	' '	LOF
0 - 0.1	m			ou	9								%
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1.2 - 1.3 8.96A 0.639A 22.7B 14.57 1.09 8.93 2.5 - 2.6 8.72A 0.62A 22.05B 16.37 1.21 9.62 Depth CaCO3 Organic C C P P P N K K Mg/m3 Bulk Density Mg/m3 Particle Size GV CS FS Silt Clay 0 - 0.02 <0.1B 2.24C 22.9 48.5 0 - 0.1 0.1B 1.2C 22.4J 22.47.7 0.1 - 0.2 0.2B 0.78C 7.5J 22.6 48.7 0.3 - 0.4 1.1B 0.56C <1J 23.1 48.4 0.7 - 0.8 0.9B 0.23C 11.6J 22.4 54.9 1.2 - 1.3 1.4B 0.06C 12.9J 16.7 58.9	0.3 - 0.4	9.2A	0.298A	20.27B	11.28	0.47	6.19						
Depth CaCO3 Organic C P P P N K Mg/m3 Avail. Total Density Mg/m3 Total P P N N R Mg/m3 Bulk Particle Size FS Silt Clay P P N N R Mg/m3 Particle Size Analysis FS Silt Clay P P N N R Mg/m3 0 - 0.02 <0.1B 2.24C 22.9 48.5 0 - 0.1 0.1B 1.2C 22.4J 22.4 47.7 0.1 - 0.2 0.2B 0.78C 7.5J 22.6 48.7 0.3 - 0.4 1.1B 0.56C <1J 23.1 48.4 0.7 - 0.8 0.9B 0.23C 11.6J 22.4 54.9 1.2 - 1.3 1.4B 0.06C 12.9J 16.7 58.9	0.7 - 0.8	8.96A	0.575A	21.29B	12.9	0.89	8.61						
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C m P mg/kg P mg/kg N % K Mg/m3 Density Mg/m3 GV CS FS W Silt Clay 0 - 0.02 <0.1B 2.24C 22.9 48.5 0 - 0.1 0.1B 1.2C 22.4J 22 47.7 0.1 - 0.2 0.2B 0.78C 7.5J 22.6 48.7 0.3 - 0.4 1.1B 0.56C < 1J 23.1 48.4 0.7 - 0.8 0.9B 0.23C 11.6J 22.4 54.9 1.2 - 1.3 1.4B 0.06C 12.9J 16.7 58.9	2.5 - 2.6	8.72A	0.62A	22.05B	16.37	1.21	9.62						
C m P mg/kg P mg/kg N % K Mg/m3 Density Mg/m3 GV CS FS W Silt Clay 0 - 0.02 <0.1B 2.24C 22.9 48.5 0 - 0.1 0.1B 1.2C 22.4J 22 47.7 0.1 - 0.2 0.2B 0.78C 7.5J 22.6 48.7 0.3 - 0.4 1.1B 0.56C < 1J 23.1 48.4 0.7 - 0.8 0.9B 0.23C 11.6J 22.4 54.9 1.2 - 1.3 1.4B 0.06C 12.9J 16.7 58.9													
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0.7 - 0.8 0.9B 0.23C 11.6J 22.4 54.9 1.2 - 1.3 1.4B 0.06C 12.9J 16.7 58.9	0.1 - 0.2	0.2B	0.78C	7.5J								22.6	48.7
1.2 - 1.3	0.3 - 0.4	1.1B	0.56C	<1J								23.1	48.4
	0.7 - 0.8	0.9B	0.23C	11.6J								22.4	54.9
2.5 - 2.6	1.2 - 1.3	1.4B	0.06C	12.9J								16.7	58.9
	2.5 - 2.6	0.3B	0.09C	10.6J								17.8	63.6
Depth COLE Gravimetric/Volumetric Water Contents K sat K unsat	Denth	COLE		Grav	/imetric/Vo	Jumetric V	Vater Con	itants		Ks	at	Kunsa	
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^{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

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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