Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed181 Observation ID: 1

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

Site Information

Desc. By: W.T. Ward Locality: A.J.(Fred) Perry, Wentworth

Date Desc.: Elevation: 30/06/86 203 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6653750 AMG zone: 55 Runoff: No Data 755200 Datum: AGD66 Easting/Lat.: Drainage: No Data

Geology

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

Surface Soil Condition (dry): Recently cultivated

Erosion:

Soil Classification

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

Confidence level not specified

Site Disturbance: Cultivation. Irrigated, past or present

Vegetation:

Surface Coarse Fragments:

Profile Morphology

Dark brown (7.5YR3/2-Moist); Dark brown (10YR3/3-Dry); ; Light medium clay; Moderate grade A11p 0 - 0.1 m of structure, 2-5 mm, Granular: Weak grade of structure, 2-5 mm, Subangular blocky: Smoothped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores,

Moderately moist; Very strong consistence; Field pH 8.8 (pH meter); Few, very fine (0-1mm)

roots; Abrupt, Smooth change to -

A12 0.1 - 0.25 m Dark brown (7.5YR3/2-Moist); , 10YR73, 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; Very firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %),

Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.8 (pH meter); Few, very fine (0-1mm)

Dark brown (7.5YR3/2-Moist); , 10YR73, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate A13 0.25 - 0.5 m

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 firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.8

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

Brown (10YR4/3-Moist); , 10YR72, 0-2% , 0-5mm, Distinct; , 10YR41, 0-2% , 0-5mm, Faint; B21 0.5 - 1 m

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 firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8

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

B22 1 - 1.8 m Brown (7.5YR4/4-Moist); , 10YR73, 0-2% , 0-5mm, Distinct; , 10YR41, 0-2% , 0-5mm, Distinct;

Light clay; Weak grade of structure, 50-100 mm, Prismatic; Moderate 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 firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 9 (pH meter); Diffuse, Smooth change

to -

С 1.8 - 2.61 m Brown (7.5YR5/4-Moist); , 7.5YR42, 0-2% , 0-5mm, Distinct; , 10YR72, 0-2% , 0-5mm, Distinct;

Medium clay; Weak grade of structure, 50-100 mm, Prismatic; 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, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter);

Morphological Notes

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A11p Weak effervescence with acid in fine earth 0-10. Carbonate is mostly soft, but there are

Observation Notes

Parent Rock: alluvial sediment, mixed texture, with lime, second terraced fan, Namoi

Site Notes

Ripping has brought up large clods 10" to 1 foot diameter, see photo. 30 degrees mag. to Wentworth homestead.

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Laboratory Test Results:

<u> </u>												
Depth	рН	1:5 EC		hangeable			Exchangeable	CEC	;	ECEC	: 1	ESP
			Ca	Mg	K	Na	Acidity					.,
m		dS/m				Cmol (-	+)/kg					%
0 - 0.02	8.64A	-	20.16B	13.09	0.93	1.65						
0 - 0.1	8.18A	-	19.47B	15.14	0.72	1.33						
0.1 - 0.2	8.84A		18.55B	15.93	0.53	2.1						
0.3 - 0.4	9.16A	0.279A	15.56B	14.76	0.4	4.36						
0.7 - 0.8	9.34A	0.319A	10.33B	15.2	0.44	6.18						
1.2 - 1.3	9.38A	0.326A	10.89B	13.59	0.43	6.41						
2.5 - 2.6	9.38A	0.323A	10.95B	14.9	0.51	5.98						
								_		٠.		
Depth	CaCO3	Organic	Avail.	Total	Total	Tota					Analysis	
	%	C	P	P	N o/	K %	Density	G۷	CS	FS %	Silt	Clay
m	%	%	mg/kg	%	%	70	Mg/m3			70		
0 - 0.02	0.6B	0.94C									24 5	55.3
			0.61									
0 - 0.1	0.5B	1.12C	8.6J								20.8	
0.1 - 0.2	0.7B	0.89C	4.9J								22	54.8
0.3 - 0.4	2.2B	0.75C	2.4J								22.9	
0.7 - 0.8	0.5B	0.29C	10.7J								27.4	
1.2 - 1.3	1.1B	0.2C	14.5J									51.4
2.5 - 2.6	1.2B	0.12C	9.9J								20.8	50.3
Depth	COLE Gravimetric/Volumetric Water Contents							Ks	at	K unsa	t	
-		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar 1	5 Bar				
m				g/	/g - m3/m	3			mm	ı/h	mm/h	

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