

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed370 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward	Locality: Frank O'Neill, Llano
Date Desc.: 29/01/87	Elevation: 197 metres
Map Ref.: Sheet No. : 8837_N 1:50000	Rainfall: No Data
Northing/Long.: 6674200 AMG zone: 55	Runoff: No Data
Easting/Lat.: 751950 Datum: AGD66	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 Data	Pattern Type: No Data
Morph. Type: No Data	Relief: No Data
Elem. Type: Fan	Slope Category: Level
Slope: 0 %	Aspect: No Data

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

Erosion:

Soil Classification

Australian Soil Classification: N/A	Mapping Unit: N/A
ASC Confidence: Confidence level not specified	Principal Profile Form: Ug5.16
	Great Soil Group: Grey clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); Grey (10YR5/1-Dry); ; Light medium clay; Moderate grade of structure, 2-5 mm, Granular; Weak 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; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
A12	0.1 - 0.25 m	Very dark greyish brown (10YR3/2-Moist); ; Light medium clay; Moderate 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; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.6 m	Dark brown (7.5YR3/2-Moist); , 10YR63, 2-10% , 0-5mm, Prominent; Light medium clay; Moderate 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; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; 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 -
B21	0.6 - 1 m	Brown (7.5YR4/2-Moist); , 7.5YR32, 2-10% , 5-15mm, Faint; Light clay; Moderate 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; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
B22	1 - 1.9 m	Brown (7.5YR4/4-Moist); ; Light clay; Moderate grade of structure, 100-200 mm, Lenticular; 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; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
B23	1.9 - 3 m	Brown (7.5YR4/2-Moist); ; Light medium clay; Moderate grade of structure, 100-200 mm, Lenticular; 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; Strong consistence; Few (2 - 10 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Field pH 8.7 (pH meter); Diffuse, Smooth change to -

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B24g	3 - 4.05 m	Brown (7.5YR4/2-Moist); ; Light 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 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few (2 - 10 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8.5 (pH
B25g	4.05 - 5 m	Brown (7.5YR4/4-Moist); , 7.5YR52, 20-50% , 15-30mm, Prominent; Light 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 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8.5 (pH meter); Diffuse, Smooth change to -
C	5 - 6.22 m	Brown (7.5YR4/4-Moist); , 7.5YR52, 2-10% , 5-15mm, Distinct; Light 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 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8 (pH meter);

Morphological Notes

A11p	The carbonate concretions are about 2 cm width, below 160 cm. At 250-260 cm a carbonate nodule showed two episodes of growth (an inner portion of one colour, and an outer skin). Manganese reappears and continues in small quantities from 360
A12	cm to 445 cm. 7.5YR5/2 is grey not brown. The manganese stains are in the peds. Resembles old alluvium profile.

Observation Notes

Parent Rock: alluvial sediment, clay, parna on fourth fan

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity		%
						Cmol (+)/kg			
0 - 0.1	7.66A	0.142A	18.71B	10.74	0.8	3.59			
0.1 - 0.2	8.12A	0.123A	20.29B	11.76	0.64	4.1			
0.3 - 0.4	9.02A	0.307A	20.86B	12.72	0.55	8.18			
0.7 - 0.8	8.15A	1.502A	23.75B	14.45	0.8	13.55			
1.2 - 1.3	8.64A	0.953A	23.62B	13.62	0.98	13.11			
2.5 - 2.6	8.69A	1.002A	23.36B	11.74	0.89	14.18			
3.5 - 3.6	8.54A	1.121A	25.87B	12.44	1	15.64			
4.5 - 4.6	8.19A	0.925A	22.06B	10.39	0.74	14.5			
5.5 - 5.6	8.52A	0.918A	21.39B	9.87	0.73	15.7			

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,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
P10_CF_Z	Silt (%) - Coventry and Fett pipette method