

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** we011 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward	Locality:
Date Desc.: 20/01/89	Elevation: 175 metres
Map Ref.: Sheet No. : 8737_N 1:50000	Rainfall: No Data
Northing/Long.: 6658800 AMG zone: 55	Runoff: No Data
Easting/Lat.: 707300 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: Terrace flat	Slope Category: Level
Slope: 0 %	Aspect: No Data

Surface Soil Condition (dry): Surface crust

Erosion:

Soil Classification

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

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark grey (10YR4/1-Moist); Dark grey (10YR4/1-Dry); ; Light clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Weak grade of structure, <2 mm, Granular; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark grey (10YR4/1-Moist); ; Light clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 2-10%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark grey (10YR4/1-Moist); , 10YR83, 2-10% , 0-5mm, Distinct; Light medium clay; Weak grade of structure, 50-100 mm, Angular blocky; Moderate grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
A14	0.55 - 1 m	Dark grey (10YR4/1-Moist); ; Medium heavy clay; Weak grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 5-10 mm, Subangular 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, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	1 - 1.9 m	Brown (10YR4/3-Moist); , 10YR32, 0-2% , 5-15mm, Faint; Light clay; Weak grade of structure, 50-100 mm, Angular blocky; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy 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, Medium (2 -6 mm), Nodules; Field pH 8.8 (pH meter);
B22	1.9 - 2.56 m	Brown (10YR5/3-Moist); , 10YR41, 0-2% , 5-15mm, Faint; Light clay; Weak grade of structure, 50-100 mm, Angular blocky; Earthy fabric; Moderately moist; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.8 (pH meter);

Morphological Notes

A11 Originally bu013. The coarse fragments in 01102 are from 17-21cm and I wonder if they are from an old ant nest. Below this level the structure improves and there is inwashed fine sand to about 60cm. The soil may be waterwashed at the surfac

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A12 e and aeolian beneath. Colourless gypsum crystals occur with lime nodules at 1m. Slickensides at 170cm (top of third core). The carbonate at 250-260 cm occurs as diffuse irregular moderately soft blotches, rather than nodular. Soil is similar to Bingara Road, possibly is simply water-sorted aeolian clay.

A13

Observation Notes

Parent Rock: aeolian sediment, clay, parna on third fan, Namoi

Site Notes

Middle terrace soil. Low terrace red soil lies between 011 and 010, but was not drilled as I expected to find it here. Weak 10cm gilgai with swallow holes in places.

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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	8.8A	0.202A	25.34B	<0.1	0.74	4.16			
0.1 - 0.2	8.09A	0.193A	24.63B	0.53	1.57	2.17			
0.3 - 0.4	9.21A	0.378A	19.27B	1.49	0.79	11.2			
0.7 - 0.8	9.06A	0.837A	11.92B	0.21	0.98999	20.05			
					99				
1.2 - 1.3	8.87A	0.936A	10.29B	15.41	0.91	19.2			
2.5 - 2.6	9.22A	0.846A	7.8B	14.98	0.74	18.45			

Depth m	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	mg/kg	%	%	%	Mg/m3	GV	CS	FS %	Silt Clay
0 - 0.1	0.3B	1.08C	11.1J								20.6 57.8
0.1 - 0.2	0.5B	0.59C	33.5J								21 59.2
0.3 - 0.4	1.4B	0.47C	9.8J								21.6 59.8
0.7 - 0.8	0.9B	0.48C	30.5J								22.3 60.4
1.2 - 1.3	0.3B	0.3C	30.2J								22.4 58.8
2.5 - 2.6	2.8B	0.13C	18.1J								20.7 54.6

[illegible]

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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