

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed028 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	D. McGarry	Locality:	B.R.(Bruce) Penberthy, Muckabinya
Date Desc.:	31/10/85	Elevation:	236 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6674900 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	768000 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:	No Data	Slope Category:	Very gently sloped
Slope:	1 %	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:	Brown clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.09 m	Very dark greyish brown (10YR3/2-Moist); Very dark greyish brown (10YR3/2-Dry); ; Medium clay; Moderate grade of structure, 5-10 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 7.2 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A12p	0.09 - 0.25 m	Dark brown (7.5YR3/2-Moist); , 10YR73, 0-2% , 0-5mm, Faint; Medium clay; Massive grade of structure; Earthy fabric; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very 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; Abrupt, Smooth change to -
A13	0.25 - 0.5 m	Dark brown (7.5YR3/2-Moist); , 10YR73, 0-2% , 0-5mm, Faint; , 10YR63, 0-2% , 0-5mm, Distinct; Heavy clay; Weak grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.7 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	0.5 - 1 m	Reddish brown (5YR4/3-Moist); , 7.5YR32, 0-2% , 5-15mm, Faint; , 7.5YR72, 2-10% , 5-15mm, Distinct; Heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 20-50 mm, Lenticular; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 8.7 (pH meter); Few, very fine (0-1mm) roots;
B22	1 - 1.9 m	Dark reddish grey (5YR4/2-Moist); , 5YR58, 2-10% , 0-5mm, Distinct; , 7.5YR74, 2-10% , 5-15mm, Faint; Medium heavy clay; Weak grade of structure, 50-100 mm, Lenticular; Weak grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;

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B23 1.9 - 2.64 m Dark reddish grey (5YR4/2-Moist); , 5YR46, 2-10% , 0-5mm, Distinct; , N20, 2-10% , 0-5mm, Distinct; Medium heavy clay; Weak 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) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few cutans, <10% of ped faces or walls coated, distinct; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.2 (pH meter);

Morphological Notes

A11p A1p1 is ploughed and A1p2 appears compacted; WTW thinks 028.03 is angular blocky; thin manganese coats over carbonate at 120; organic stain enters cores at 145 and continues at 175 surrounding large worm channel; prominent 7.5YR7/3, few, coarse carbonate nodules from 190 to 240cm; core finishes at 264 at a slickenside; query brown alluvium Q, but note largish carbonate nodules in subsoil.

A12p

Observation Notes

Parent Rock: alluvial sediment, clay, second (brown parna) terraced

Site Notes

The site is at the edge of a paddock, near a gully and drainage line (? donga).

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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 - 0.02									
0 - 0.09	7.87A	0.202A	23.46B	8.87	1.18	1.03			
0.1 - 0.2	8.91A	0.191A	26.22B	11.18	0.36	2.07			
0.3 - 0.4	9.21A	0.265A	23.88B	12.68	0.23	5.95			
0.7 - 0.8	9.35A	0.525A	19.57B	15.08	0.56	11.86			
1.2 - 1.3	8.8A	1.332A	24.2B	18.45	0.92	16			
2.5 - 2.6	8.93A	1.109A	23.28B	19.02	0.89	15.59			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle		Size	Analysis	
								GV	CS		FS	Silt
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02												
0 - 0.09	0.2B	1.09C	21.2J								15.3	45.2
0.1 - 0.2	0.9B	0.58C	9.3J								15.4	46.3
0.3 - 0.4	1B	0.53C	5.6J								15.8	49.4
0.7 - 0.8	1.3B	0.31C	9.1J								16.8	53.4
1.2 - 1.3	1.9B	0.08C	10.5J								12.8	66.6
2.5 - 2.6	2.2B	0.06C	36J								10.8	66.1

[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