

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed042 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	G.M. Roberts	Locality:	P.A. Eather, Bald Knob
Date Desc.:	31/07/85	Elevation:	212 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6672750 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	758300 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 plain	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:	Ug5.15
		Great Soil Group:	Brown clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.06 m	Dark greyish brown (10YR4/2-Moist); Greyish brown (10YR5/2-Dry); ; Medium clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Angular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots; Sharp, Smooth change to -
A12	0.06 - 0.25 m	Dark grey (10YR4/1-Moist); ; Heavy 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; Very firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots;
A13k	0.25 - 0.4 m	Very dark greyish brown (10YR3/2-Moist); , 10YR82, 0-2% , 5-15mm, Distinct; Heavy clay; 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; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
B21k	0.4 - 1.01 m	Brown (7.5YR4/2-Moist); , 10YR82, 0-2% , 5-15mm, Distinct; , 10YR32, 10-20% , 15-30mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
B22	1.01 - 1.9 m	Brown (7.5YR5/4-Moist); , N30, 10-20% , 30-mm, Prominent; , 10YR81, 0-2% , 0-5mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Many (20 - 50 %), Manganiferous, Very coarse (20 - 60 mm), Veins; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter);

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B23k 1.9 - 2.66 m Brown (7.5YR4/2-Moist); , N30, 2-10% , 15-30mm, Distinct; , 10YR82, 2-10% , 15-30mm, Distinct; Medium clay; Strong grade of structure, 50-100 mm, Prismatic; Strong grade of structure, 10-20 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 %), Manganiferous, Coarse (6 - 20 mm), Veins; Few (2 - 10 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8.5 (pH meter);

Morphological Notes

A11p Few sandy patches throughout first 30cm. Structure changes from 101-266 also large amounts of calcium carbonate deposits.

Observation Notes

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

Site Notes

Third core encountered large carbonate nodules so drilling continued to 460. At 380 core has coarse sandy parent material patches with pebbles of quartz, sandstone and basalt at 450-460, waterworn. Some slicks at 240, 270 and 360 but no wat

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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	7.07A	0.064A	14.93B	8.65	1.58	0.74			
0 - 0.06	7.62A	0.098A	14.13B	10.8	1.01	1.01			
0.1 - 0.2	7.61A	0.093A	20.32B	13.37	0.71	1.98			
0.3 - 0.4	8.39A	0.156A	20.47B	12.39	0.5	3.36			
0.7 - 0.8	8.27A	0.793A	20B	14.15	0.93999	5.83			
1.2 - 1.3	8.8A	0.579A	22.34B	14.86	0.95	6.71			
2.5 - 2.6	8.86A	0.578A	22.5B	14.81	0.97	7.88			

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	<0.1B	1.11C									18.1	42.4
0 - 0.06	0.1B	1.33C		20.4J							17.2	40.4
0.1 - 0.2	<0.1B	0.84C		7.8J							18.4	49.8
0.3 - 0.4	0.2B	0.75C		4.8J							19.3	50.2
0.7 - 0.8	0.5B	0.22C		10.8J							17.9	54.9
1.2 - 1.3	0.6B	0.08C		10.5J							15.2	58.5
2.5 - 2.6	1.6B	0.05C		5.8J							13.9	56.6

[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