

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed421 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	M.E. Heape	Locality:	Bruce Tout, Oakvale
Date Desc.:	29/04/86	Elevation:	306 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6664200 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	776400 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:	Pediment	Slope Category:	Very gently sloped
Slope:	1 %	Aspect:	230 degrees

Surface Soil Condition (dry): Firm, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Dy5.13
		Great Soil Group:	Solodic soil

Site Disturbance: Complete clearing. Pasture, native or improved, cultivated at some stage

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Very dark brown (10YR2/2-Moist); Grey (10YR5/1-Dry); ; Loamy sand; Weak grade of structure, 50-100 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Granular; Rough-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Rigid consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.3 m	Grey (10YR6/1-Moist); , 10YR31, 2-10% , 0-5mm, Distinct; , 5YR54, 0-2% , 0-5mm, Distinct; Light 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; Rigid consistence; 0-2%, medium gravelly, 6-20mm, subangular, Quartz, coarse fragments; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
B21	0.3 - 0.55 m	Grey (10YR6/1-Moist); , 10R44, 2-10% , 0-5mm, Distinct; , 10YR31, 2-10% , 0-5mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm, Prismatic; Weak 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; Rigid consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
B22	0.55 - 1.25 m	Brown (7.5YR5/2-Moist); , 7.5YR58, 2-10% , 0-5mm, Distinct; , 10YR31, 2-10% , 0-5mm, Distinct; Light 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) Fine (1-2mm) macropores, Moderately moist; Rigid consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
C1	1.25 - 1.9 m	Pale yellow (2.5Y8/4-Moist); , 10YR64, 20-50% , 15-30mm, Distinct; Clayey sand; Weak grade of structure, 50-100 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Granular; Smooth-ped fabric; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Very strong consistence; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
C2	1.9 - 2.64 m	Pale yellow (2.5Y8/4-Moist); , 7.5YR42, 0-2% , 0-5mm, Distinct; Fine sandy light clay; Massive grade of structure; Earthy fabric; 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;

Morphological Notes

A11 The carbonate in layers 4 and 5 mainly occupies old faunal and floral passages. Layer 5 is in the middle of a very diffuse boundary of the B2 to C. Sandstone is present

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A12 throughout the boundary zone between layers 4 and 5, but faunal activity has mixed clay with it. Sandstone per se occurs below 130cm, but is in the profile from 100cm. So, to 130cm it may be transported, and below that may be in situ. Carbonates stop at 145cm. The yellow sandstone from 130cm to end of sample is very soft, and has many white speckles of clay material (as in ed416). It may be that the top 10cm is a recent sandy wash, though no sedimentary features are evident.

B21

Observation Notes

Parent Rock: residual, sandstone, from sandstone, with lime Tertiary beds

Site Notes

Weak surface crust also evident. 100m below upper slope landform.

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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	6.85A	0.033A	3.95B	2.51	0.42	0.15			
0.1 - 0.2	7.67A	0.054A	10.44B	9.15	0.54	1.27			
0.3 - 0.4	8.4A	0.057A	8.13B	8.95	0.33	1.79			
0.7 - 0.8	9.32A	0.211A	6.33B	10.41	0.23	3.14			
1.2 - 1.3	9.71A	0.286A	5.55B	15.1	0.23	6.68			
2.5 - 2.6	6.25A	0.188A	4.13B	16.39	0.16	8.77			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
m	%	%	mg/kg	%	%	%	Mg/m3	GV	CS	FS	Silt Clay
0 - 0.1	<0.1B	0.93C	3.4J								
0.1 - 0.2	<0.1B	0.64C	<1J								
0.3 - 0.4	<0.1B	0.27C	<1J								
0.7 - 0.8	0.4B	0.12C	<1J								
1.2 - 1.3	0.2B	0.05C	<1J								
2.5 - 2.6	<0.1B	0.04C	<1J								

[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