Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed427** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	M.E. Heape	**Locality:**	Bruce Tout, Oakvale
Date Desc.:	01/05/86	**Elevation:**	285 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	**Rainfall:**	No Data
Northing/Long.:	6666600 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	776000 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:**	10 degrees

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

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Ug5.16
Great Soil Group: Grey clay

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.12 m	Very dark grey (10YR3/1-Moist); ; Medium clay; Weak grade of structure, 20-50 mm, Platy; Moderate grade of structure, 10-20 mm, Angular blocky; Rough-ped fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A12	0.12 - 0.25 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Moderate grade of structure, 10-20 mm, Lenticular; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Black (10YR2/1-Moist); , 10YR32, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 10-20 mm, Lenticular; Moderate grade of structure, 2-5 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; Field pH 8.5 (pH meter); Common, very fine (0-1mm) roots;
A14	0.55 - 1.2 m	Black (10YR2/1-Moist); , 10YR53, 2-10% , 0-5mm, Distinct; Heavy clay; Moderate grade of structure, 10-20 mm, Lenticular; Moderate grade of structure, 2-5 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; Diffuse, Smooth change to -
B21	1.2 - 1.5 m	Brown (7.5YR4/2-Moist); , 10YR22, 0-2% , 0-5mm, Distinct; , 10YR52, 0-2% , 0-5mm, Distinct; Light medium clay; Weak grade of structure, 50-100 mm, Lenticular; Weak grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B22	1.5 - 3.05 m	Brown (10YR4/3-Moist); ; Heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 10-20 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; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (pH meter);

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B23	3.05 - 4.05 m	Brown (10YR4/3-Moist); ; Medium heavy clay; Strong grade of structure, 50-100 mm, Lenticular; Strong grade of structure, 10-20 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, subangular, Basalt, coarse fragments; Common (10 - 20 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
B24	4.05 - 4.65 m	Brown (10YR5/3-Moist); ; Medium heavy clay; Strong grade of structure, 50-100 mm, Lenticular; 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; Very firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, Consolidated rock (unidentified), coarse fragments; Very few (0 - 2 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 7 (pH meter); Gradual, Smooth change to -
D1	4.65 - 5.2 m	Yellow (10YR7/6-Moist); , 10YR53, 10-20% , 15-30mm, Distinct; Medium heavy clay; Weak grade of structure, 50-100 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; Field pH 7 (pH meter); Clear, Smooth change to -
D2	5.2 - 5.97 m	Light grey (5Y7/2-Moist); , 10YR62, 0-2% , 5-15mm, Distinct; Light clay; Strong grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 10-20 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; Field pH 6.5 (pH meter);

Morphological Notes

A11p	Top 2cm of profile is fine mulching material - included in 0-10 layer 1. Basaltic stone at 360cm. The boundary at 465cm is quite distinct, and is accompanied by a basal coarse fraction, something of a stone line with sandstone and quartz pe
A12	bbles. Layer 9 has abundant manganese. The primary colour in layer 9 is yellowish sandstone, which is somewhat decayed. It is surrounded by clay (with manganese) as in above layers. The horizon break from D1 to D2 is quite sharp, but not to
A13	o obvious as there is no stone or coarse fragment line. Layer 10 is decomposing mudstone, and mudstone per se is seen below 590 cm.

Observation Notes

Parent Rock: colluvial sediment, from sandstone, with lime, sandstone colluvium, thick, with basalt

Site Notes

Lime/manganese banding repeated in 266-365cm?

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m				Cmol (+)/kg				%
0 - 0.02	8.46A	0.124A	27.31B	5.18	1	0.66				
0 - 0.1										
0.1 - 0.2	8.68A	0.138A	27.57B	7.14	0.53	1.26				
0.3 - 0.4	8.9A	0.172A	26.11B	9.84	0.47	2.34				
0.7 - 0.8	8.96A	0.156A	25.29B	11.26	0.36	6.13				
1.2 - 1.3	9.18A	0.287A	26.16B	11.71	0.54	7.55				
2.5 - 2.6	8.57A	0.902A	26.28B	11.42	0.38	7.03				
3.5 - 3.6	8.91A	0.587A	25.56B	12.14	0.35	6.49				
4.5 - 4.6	8.75A	0.444A	23.3B	10.1	0.3	4.69				
4.8 - 4.9	7.63A	0.301A	24.14B	10.21	0.26	5.5				
5.5 - 5.6	7.07A	0.258A	28.45B	14.63	0.31	8.21				

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02	0.2B	1.47C	3.5J									
0 - 0.1												
0.1 - 0.2	2.4B	1.14C	1J									
0.3 - 0.4	2.7B	1.07C	<1J									
0.7 - 0.8	2.5B	0.8C	<1J									
1.2 - 1.3	1.9B	0.4C	<1J									
2.5 - 2.6	2.5B	0.17C	<1J									
3.5 - 3.6	0.2B	0.09C	2.6J									
4.5 - 4.6	<0.1B	0.05C	6.3J									
4.8 - 4.9	<0.1B	0.04C	7J									
5.5 - 5.6	<0.1B	0.03C	1.3J									

Depth	COLE	Gravimetric/Volumetric Water Contents							K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar		
m		g/g - m3/m3							mm/h	mm/h
0 - 0.02										
0 - 0.1										
0.1 - 0.2										
0.3 - 0.4										
0.7 - 0.8										
1.2 - 1.3										
2.5 - 2.6										
3.5 - 3.6										
4.5 - 4.6										
4.8 - 4.9										
5.5 - 5.6										

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca2+,Mg2+,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