Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **na030** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By: W.T. Ward
Date Desc.: 10/03/87
Map Ref.: Sheet No. : 8837_S 1:50000
Northing/Long.: 6637900 AMG zone: 55
Easting/Lat.: 742600 Datum: AGD66
Locality: recreation reserve, at Yarrie Lake
Elevation: 221 metres
Rainfall: No Data
Runoff: No Data
Drainage: No Data

Geology

ExposureType: Undisturbed soil core
Geol. Ref.: No Data
Conf. Sub. is Parent. Mat.: No Data
Substrate Material: No Data

Land Form

Rel/Slope Class: No Data
Morph. Type: No Data
Elem. Type: Lunette
Slope: 0 %
Pattern Type: No Data
Relief: No Data
Slope Category: Very gently sloped
Aspect: No Data

Surface Soil Condition (dry): Loose

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified
Mapping Unit: N/A
Principal Profile Form: Dy4.41
Great Soil Group: Solodic soil

Site Disturbance:

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Brown (10YR4/3-Moist); Brown (10YR4/3-Dry); ; Sand; Weak grade of structure, 2-5 mm, Granular; Moderate grade of structure; Sandy (grains prominent) fabric; Moderately moist; Loose consistence; Field pH 6 (pH meter); Common, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Brown (10YR4/3-Moist); ; Sand; Single grain grade of structure; Sandy (grains prominent) fabric; Moderately moist; Very weak consistence; Field pH 6.5 (pH meter); Few, very fine (0-
A13	0.25 - 0.4 m	Brown (10YR5/3-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Sand; Single grain grade of structure; Sandy (grains prominent) fabric; Moderately moist; Very weak consistence; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
A21	0.4 - 0.65 m	Light grey (10YR7/2-Moist); ; Sand; Massive grade of structure; Sandy (grains prominent) fabric; Many (>5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
A22	0.65 - 0.84 m	White (10YR8/2-Moist); ; Sand; Massive grade of structure; Sandy (grains prominent) fabric; Many (>5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Common (10 - 20 %), Ferruginous-organic, Very coarse (20 - 60 mm), Nodules; Field pH 7.2 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
B21	0.84 - 1.1 m	Strong brown (7.5YR5/8-Moist); , 10YR72, 20-50% , 30-mm, Prominent; , 7.5YR44, 0-2% , 5-15mm, Distinct; Light clay; Massive grade of structure; Moderate grade of structure, Prismatic; Rough-ped fabric; Sandy (grains prominent) fabric; Many (>5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
2A1	1.1 - 1.2 m	Pale yellow (2.5Y7/4-Moist); , 10YR82, 20-50% , 15-30mm, Prominent; Sand; Massive grade of structure; Massive grade of structure; Sandy (grains prominent) fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
2B2	1.2 - 1.6 m	Red (2.5YR4/8-Moist); , 5YR56, 2-10% , 5-15mm, Distinct; , 2.5Y62, 20-50% , 15-30mm, Prominent; Light clay; Massive grade of structure; Weak grade of structure, 50-100 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); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -

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3A1	1.6 - 1.85 m	Pale brown (10YR6/3-Moist); , 2.5Y62, 0-2% , 5-15mm, Distinct; Sand; Massive grade of structure; Weak grade of structure, 20-50 mm, Angular blocky; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few (2 - 10 %), Ferruginous-organic, Coarse (6 - 20 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
3B21	1.85 - 2.23 m	Greyish brown (10YR5/2-Moist); , 2.5YR44, 0-2% , 5-15mm, Distinct; , 10YR61, 2-10% , 5-15mm, Distinct; Light clay; Massive grade of structure; Weak grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
3B22	2.23 - 3.2 m	Red (2.5YR5/6-Moist); , 7.5YR56, 2-10% , 5-15mm, Distinct; , 10YR72, 10-20% , 15-30mm, Prominent; Sand; Weak grade of structure, 20-50 mm, Platy; Massive grade of structure; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 9 (pH meter); Clear, Smooth change to -
3D	3.2 - 3.53 m	Light brownish grey (10YR6/2-Moist); ; Light clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Very strong consistence; Field pH 9 (pH meter);

Morphological Notes

A11	Conspicuous bleach in A2. Na03007 (especially 115-120cm) is a paler band which seems to be cemented with fine quartz and could represent a buried topsoil. Compare similar band exposed in quarry pit. I interpret this as a buried topsoil but
A12	it could be bedding, and Grant McTainsh has found a lot of silt in it, suggesting an aeolian contribution. The material beneath is red -mottled and grades at 160cm to sands with less clay, and brown concretionary-like structures, possibly a
A13	second topsoil - are these A2 concretions as in A2n? - on alluvium with B2, clayey. 3B2 is differentiated into two levels, clayier above (3B21), sandier below and less structured. One rounded quartz pebble at 98cm, .6cm diameter. A larger
A21	ferruginous one at 105cm. NOTE: There is a conlict between lab. and field sample numbers as no samples were submitted from na03004, -06, -07, -09, -10 and -12, the others being numbered successively. This will result in mismatches of lab. a
A22	nd field results if blanks are not inserted and the following samples are not renumbered: lab -04 to become -05; -05 -> -08; -06 -> -11. LESSON: Provide a number for each layer described and give that number to the sample sent to lab.

Observation Notes

Parent Rock: aeolian sediment, sand, mixed texture, non-calcareous lunette on fifth fan

Site Notes

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m	Cmol (+)/kg							%
0 - 0.1	6.35A	0.047A	1.37B	0.26	0.25	<0.01				
0.1 - 0.2	5.76A	0.02A	0.82B	0.22	0.15	<0.01				
0.3 - 0.4	6.5A	0.016A	1.3B	<0.1	0.09	<0.01				
0.5 - 0.6	7.17A	0.013A	0.36B	<0.1	0.05	<0.01				
0.7 - 0.8	7.78A	0.066A	3.19B	2.6	1.1	0.82				
0.84 - 0.94	8.5A	0.141A	3.56B	3.12	1.22	1.68				
1.1 - 1.2										
1.2 - 1.3										
1.6 - 1.7										
1.85 - 1.95										
2.5 - 2.6										
3.4 - 3.5										

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 - 0.1	<0.1B	0.93C	31.7J								2.7	4.2
0.1 - 0.2	<0.1B	0.44C	25.1J								3.1	8.5
0.3 - 0.4	<0.1B	0.22C	9.3J								2.9	8.2
0.5 - 0.6	<0.1B	0.03C	4.5J								3.6	2.2
0.7 - 0.8	<0.1B	0.06C	15.9J								4.3	22.4
0.84 - 0.94	3B	0.44C	1.9J								1.8	17.6
1.1 - 1.2												
1.2 - 1.3												
1.6 - 1.7												
1.85 - 1.95												
2.5 - 2.6												
3.4 - 3.5												

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 - 0.1										
0.1 - 0.2										
0.3 - 0.4										
0.5 - 0.6										
0.7 - 0.8										
0.84 - 0.94										
1.1 - 1.2										
1.2 - 1.3										
1.6 - 1.7										
1.85 - 1.95										
2.5 - 2.6										
3.4 - 3.5										

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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
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method