

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** na015 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward	Locality: University of Sydney, I.A.Watson Research Farm
Date Desc.: 17/02/88	Elevation: 226 metres
Map Ref.: Sheet No. : 8837_S 1:50000	Rainfall: No Data
Northing/Long.: 6647930 AMG zone: 55	Runoff: No Data
Easting/Lat.: 770000 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: Hillcrest	Slope Category: Very gently sloped
Slope: 1 %	Aspect: 180 degrees

Surface Soil Condition (dry): Surface crust, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification: N/A	Mapping Unit: N/A
ASC Confidence: Confidence level not specified	Principal Profile Form: Uf5.11
	Great Soil Group: Grey clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Dark greyish brown (10YR4/2-Dry); ; Light clay; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 5.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); , 10YR62, 0-2% , 0-5mm, Prominent; , N20, 0-2% , 0-5mm, Distinct; Light clay; Weak grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 5.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.5 m	Brown (7.5YR4/2-Moist); , 7.5YR32, 10-20% , 5-15mm, Distinct; Light clay; Weak grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 6.5 (pH meter); Diffuse, Smooth change to -
B21	0.5 - 1 m	Brown (10YR5/3-Moist); , 7.5YR44, 0-2% , 0-5mm, Distinct; , 7.5YR32, 0-2% , 0-5mm, Distinct; Light clay; Moderate grade of structure, 100-200 mm, Prismatic; 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 firm consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.5 (pH meter);
B22k	1 - 1.6 m	Light grey (10YR7/2-Moist); , 10YR52, 2-10% , 0-5mm, Distinct; Light clay; Weak grade of structure, 50-100 mm, Prismatic; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 9 (pH meter); Diffuse, Smooth change to -
Cg	1.6 - 2.75 m	Light grey (10YR7/2-Moist); , 10YR52, 2-10% , 0-5mm, Distinct; Light clay; Massive grade of structure; Earthy fabric; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 9 (pH meter);

Morphological Notes

A11 A profile with a sandy appearance but an earthy fabric. Note the reduced colours and iron stains in the lower part of the profile indicating water impedence. Query inceptisols, umbrepts. Minor ?aeolian lime. Finding a close key in Northcote

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A12 is most difficult. As a great soil group, the soil is between grey and brown clays. It is difficult to find a suitable soil-taxonomy class, the one given being the best guess.

Observation Notes

Parent Rock: residual, sandstone, mixed texture, non-calcareous Tertiary beds

Site Notes

Near patch of belah. Soil on clays over sands and fine gravel with carbonate [Rolling Downs]. A weak slick pattern in field, ??gilgai. There is more sand here on the surface than at site na012. The gilgai pattern is less obvious, perhaps th

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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 Cmol (+)/kg	Acidity		%
0 - 0.02	6.34A	0.05A	4.16B	3.9	0.57	0.26			
0 - 0.1	5.2A	0.22A	4.05B	3.51	0.48	0.32			
0.1 - 0.2	5.73A	0.108A	3.38B	4.52	0.27	<0.01			
0.3 - 0.4	7.84A	0.065A	5.57B	8.16	0.15	0.989999			
0.7 - 0.8	9.22A	0.168A	4.53B	10.93	0.2	3.81			
1.2 - 1.3	9.51A	0.338A	2.19B	12.16	0.26	8.07			
2.5 - 2.6	9.17A	0.172A	1.98B	9.11	0.23	6.99			

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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