Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **we001** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:
Date Desc.: 02/02/89
Map Ref.: Sheet No. : 8737_N 1:50000
Northing/Long.: 6678000 AMG zone: 55
Easting/Lat.: 722800 Datum: AGD66
Locality: gravel pit, opposite 'Doreen'
Elevation: 178 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: Terrace flat
Slope: 0 %
Pattern Type: No Data
Relief: No Data
Slope Category: Very gently sloped
Aspect: No Data

Surface Soil Condition (dry): Surface crust, Firm

Erosion:

Soil Classification

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

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.08 m	Dark grey (10YR4/1-Moist); Dark greyish brown (10YR4/2-Dry); ; Light clay; Moderate grade of structure, <2 mm, Granular; 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; Strong consistence; Field pH 6.5 (pH meter); Common, fine (1-2mm) roots; Clear, Smooth change to -
A12	0.08 - 0.25 m	Dark grey (10YR4/1-Moist); ; Light medium 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; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark grey (10YR4/1-Moist); ; Light medium clay; Weak grade of structure, 50-100 mm, Lenticular; Strong grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine
A14	0.55 - 1 m	Dark grey (10YR4/1-Moist); ; Medium clay; Moderate grade of structure, 50-100 mm, Lenticular; 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; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-
A15	1 - 1.4 m	Dark grey (10YR4/1-Moist); ; Medium clay; Moderate grade of structure, 50-100 mm, Lenticular; 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; Strong consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Sharp, Smooth change to -
B2	1.4 - 2.5 m	Brown (7.5YR5/4-Moist); , 7.5YR58, 0-2% , 5-15mm, Distinct; , 10YR41, 10-20% , 5-15mm, Distinct; Light clay; Weak grade of structure, 50-100 mm, Prismatic; Massive grade of structure; Earthy 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);

Morphological Notes

A11 bu003. One coarse carbonate concretion at 20cm. This profile is like the pits on the Bingara Road, deep dark grey top over brownish B, the break extending from 140-160cm. Baked clay fragments occur at 180cm (these are the cause of colour 2)

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A12 . There are no lime segregations below 180cm; slickensides extent to 2m. I think this is relatively undifferentiated alluvium, with baked clay at top, beneath slightly watersorted parna.

Observation Notes

Parent Rock: alluvial sediment, clay, mixed texture, non-calcareous parna on third fan, Namoi

Site Notes

Do we have a thin clay drift here, over prior (young) alluvium? A proline hole shows a fairly rapid transition at bottom of second bite (at 160cm).

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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 - 0.1	7.14A	0.159A	21.34B	12.68	1.63	2.92				
0.1 - 0.2	8.56A	0.164A	26.51B	10.87	1.2	5.5				
0.3 - 0.4	8.88A	0.342A	23.45B	14.41	1.34	10.1				
0.7 - 0.8	9.03A	0.595A	17.37B	16.57	1.7	17.89				
1.2 - 1.3	8.93A	0.707A	15.05B	16.17	1.61	17.83				
2.4 - 2.5	8.96A	0.48A	8.41B	10.89	0.41	17.54				

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	1.66C	82.8J								15.6	62.9
0.1 - 0.2	<0.1B	0.75C	19J								16.7	67.7
0.3 - 0.4	0.3B	0.66C	21.4J								16.3	65.9
0.7 - 0.8	0.4B	0.54C	49.7J								17.6	68.7
1.2 - 1.3	0.4B	0.38C	52J								19	65.4
2.4 - 2.5	0.1B	0.09C	48.1J								29.8	39

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									
0.7 - 0.8									
1.2 - 1.3									
2.4 - 2.5									

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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