Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed240** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By: W.T. Ward
Date Desc.: 03/08/87
Map Ref.: Sheet No. : 8837_N 1:50000
Northing/Long.: 6651200 AMG zone: 55
Easting/Lat.: 779500 Datum: AGD66
Locality: stock route, near Mulgate Creek
Elevation: 270 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: No Data
Slope: 0 %
Pattern Type: Flood plain
Relief: No Data
Slope Category: Very gently sloped
Aspect: No Data

Surface Soil Condition (dry): Self-mulching

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified
Mapping Unit: N/A
Principal Profile Form: Uf6.32
Great Soil Group: Alluvial soil

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

AC1	0 - 0.1 m	Brown (7.5YR4/2-Moist); Dark greyish brown (10YR4/2-Dry); , 10YR63, 2-10% , 0-5mm, Prominent; Light clay; Weak grade of structure, 20-50 mm, Subangular blocky; Weak grade of structure, 5-10 mm, Cast; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
AC2	0.1 - 0.24 m	Brown (7.5YR4/2-Moist); , 7.5YR64, 2-10% , 5-15mm, Distinct; , 10YR43, 0-2% , 0-5mm, Distinct; Light clay; Weak grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, medium gravelly, 6-20mm, rounded, Calcarenite, coarse fragments; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth
AC3	0.24 - 0.64 m	Brown (7.5YR4/2-Moist); , 7.5YR53, 0-2% , 0-5mm, Distinct; Light clay; Moderate grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
AC4	0.64 - 1 m	Brown (7.5YR4/2-Moist); , 7.5YR53, 0-2% , 0-5mm, Distinct; Light medium clay; Moderate 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; Very firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
2A1	1 - 2.3 m	Dark brown (7.5YR3/2-Moist); ; Medium clay; Weak grade of structure, 100-200 mm, Lenticular; Weak grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
2B21	2.3 - 2.8 m	Reddish brown (5YR4/4-Moist); , 7.5YR32, 0-2% , 5-15mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, angular platy, Basalt, coarse fragments; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.8 (pH

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2B22	2.8 - 3.4 m	Reddish brown (5YR4/4-Moist); , 10YR52, 20-50% , 5-15mm, Distinct; , 7.5YR32, 0-2% , 5-15mm, Distinct; Medium clay; Weak grade of structure, 100-200 mm, Lenticular; 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; Common (10 - 20 %), Calcareous, Very coarse (20 - 60 mm), Soft segregations; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 8.8 (pH meter); Clear, Smooth change to -
2C	3.4 - 3.58 m	Reddish brown (5YR4/4-Moist); , 7.5YR56, 10-20% , 5-15mm, Faint; , 7.5YR32, 0-2% , 5-15mm, Distinct; Coarse sandy light clay; Massive grade of structure; 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; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter);

Morphological Notes

AC1	Entic haplustoll. AC horizon is divided at 24cm by a thin band of alluvial sand and transported fine carbonate nodules and basalt fragments, with a sharp contact with prior AC material. A fragment of weathered sandstone occurs at 64cm. The
AC2	inherited stains in 10-20cm are fragments of the original alluvial coarse fraction. Some carbonate in the fine earth at 70-80cm, with very few carbonate nodules. Very slight fizz continues in 120-130cm. Concretions at 250-260 are sugary, fe
AC3	w weak slickensides. Gradual transition from burial (= MVpH) to recent surface AC profile. Topsoil is slightly browner than soil below 70-80cm. Soil photograph does not include 285-358cm, not found at time of description. Break to 24008 is
AC4	the change to basal sand and grits.

Observation Notes

Parent Rock: alluvial sediment, mixed texture, with lime, floodplain

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	8.38A	0.209A	29.37B	18.68	2.6	0.96				
0.1 - 0.2	8.56A	0.2A	27.17B	18.42	1.43	1.46				
0.3 - 0.4	8.79A	0.176A	21.75B	18.01	1.24	1.92				
0.7 - 0.8	8.86A	0.202A	27.41B	19.68	0.86	3.45				
1.2 - 1.3	8.91A	0.227A	25.63B	24.14	0.62	4.41				
2.5 - 2.6	9.19A	0.211A	14.41B	19.88	0.8100001	5.55				
3 - 3.1	9.32A	0.179A	7.92B	17.63	0.54	2.26				
3.5 - 3.58	9.21A	0.132A	4.75B	15.53	0.48	1.69				

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	2.4C	45.1J									
0.1 - 0.2	4.1B	1.44C	22J									
0.3 - 0.4	5.2B	0.76C	11.6J									
0.7 - 0.8	3.9B	1.48C	16.4J									
1.2 - 1.3	0.8B	0.97C	7.9J									
2.5 - 2.6	6.6B	0.15C	12J									
3 - 3.1	15B	<0.01C	3J									
3.5 - 3.58	0.5B	0.03C	4.9J									

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										
2.5 - 2.6										
3 - 3.1										
3.5 - 3.58										

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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