Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed340** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By: W.T. Ward
Date Desc.: 13/08/87
Map Ref.: Sheet No. : 8837_N 1:50000
Northing/Long.: 6654900 AMG zone: 55
Easting/Lat.: 780650 Datum: AGD66
Locality: I.O.(Ian) Falkiner, Murrumbilla
Elevation: 323 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: Pediment
Slope: %
Pattern Type: No Data
Relief: No Data
Slope Category: No Data
Aspect: 10 degrees

Surface Soil Condition (dry): Soft

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified
Mapping Unit: N/A
Principal Profile Form: Db1.13
Great Soil Group: Solodic soil

Site Disturbance:

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A1	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Brown (7.5YR4/2-Dry); , 10YR64, 0-2% , 0-5mm, Faint; Sandy clay loam; Weak grade of structure, 10-20 mm, Platy; Weak grade of structure, 5-10 mm, Subangular blocky; Sandy (grains prominent) fabric; Smooth-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 6 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
B21	0.1 - 0.25 m	Reddish brown (5YR4/4-Moist); , 7.5YR32, 20-50% , 5-15mm, Prominent; Light clay; Weak grade of structure, 100-200 mm, Prismatic; Strong 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; 0-2%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots;
B22	0.25 - 0.55 m	Brown (7.5YR4/4-Moist); , 10YR52, 2-10% , 5-15mm, Faint; , 7.5YR32, 10-20% , 5-15mm, Prominent; Light medium clay; Weak grade of structure, 100-200 mm, Prismatic; Strong 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%, medium gravelly, 6-20mm, subrounded, Quartz, coarse fragments; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
B23	0.55 - 1.1 m	Brown (7.5YR4/4-Moist); , 10YR52, 2-10% , 5-15mm, Faint; , 7.5YR32, 10-20% , 5-15mm, Prominent; 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; 0-2%, medium gravelly, 6-20mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (pH meter); Abrupt, Smooth change to -
B24	1.1 - 1.4 m	Brown (7.5YR5/4-Moist); , 10YR52, 2-10% , 5-15mm, Distinct; , 7.5YR32, 0-2% , 0-5mm, Distinct; Light 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, Medium (2 -6 mm), Nodules; Field pH 8.8 (pH meter); Diffuse, Smooth change to -
C	1.4 - 2.4 m	Light brownish grey (2.5Y6/2-Moist); , 10YR63, 2-10% , 5-15mm, Distinct; Light clay; Moderate grade of structure, 20-50 mm, Platy; Smooth-ped fabric; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few cutans, <10% of ped faces or walls coated, distinct; Very few (0 - 2 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8.8 (pH meter); Gradual, Smooth change to -

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D1g	2.4 - 3.05 m	Brown (7.5YR5/4-Moist); , 10YR73, 10-20% , 5-15mm, Faint; Sandy clay loam; 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; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Laminae; Field pH 8.8 (pH meter);
D2g	3.05 - 4.05 m	Greyish brown (2.5Y5/2-Moist); ; Clayey sand; 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; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Veins; Field pH 8.8 (pH meter);
D3g	4.05 - 5.05 m	Light brownish grey (2.5Y6/2-Moist); ; Light clay; Massive grade of structure; Weak grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Earthy 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), Veins; Field pH 8.5 (pH meter);
D4g	5.05 - 6.5 m	Brown (7.5YR5/4-Moist); , 2.5Y62, 10-20% , 5-15mm, Prominent; Light clay; Moderate grade of structure, 20-50 mm, Lenticular; Massive grade of structure; 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, Coarse (6 - 20 mm), Veins; Field pH 8.5 (pH meter); Abrupt, Smooth change to -
D5	6.5 - 6.95 m	Brown (7.5YR5/4-Moist); , 2.5Y62, 10-20% , 15-30mm, Prominent; , 7.5YR32, 0-2% , 0-5mm, Prominent; Light clay; Massive grade of structure; Sandy (grains prominent) fabric; Earthy 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, Coarse (6 - 20 mm), Soft segregations; Field pH 5.5 (pH meter);
D6	6.95 - 7.4 m	Strong brown (7.5YR5/6-Moist); , 2.5Y62, 20-50% , 15-30mm, Prominent; , 7.5YR32, 0-2% , 0-5mm, Prominent; Medium clay; Moderate grade of structure, 10-20 mm, Lenticular; Massive grade of structure; 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, angular, Mudstone, coarse fragments; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 5 (pH meter);

Morphological Notes

A1	340.07 grades into biscuitty (weakly fissile) clayey sand and sandy clay which has veins of calcium carbonate in places (at 300, 350, 380); prominent manganese stains occur beside the carbonate. At 550 it is clear that the grey colour of th
B21	e higher levels is due to perched water, for the colour here follows the fissures. From 565 on, the core is sandier and has roots with organic stains. The manganese stains extend to 600cm. Sandy sediment rests at 650cm on "type" Purlawaugh,
B22	which continues to bottom of hole. Small fragments of ferruginous concretions at about 300cm suggest a possible break at this level, but no clear texture change. Surface texture works up to sandy clay, ultimately. Textures 6, 7, 9 are very
B23	sandy. Small stones occur at 40cm, and a gritty band at 110, either might mark base of pedisediment.

Observation Notes

Parent Rock: colluvial sediment, from sandstone, with lime, colluvium, thick, no basalt

Site Notes

Site 340 is ca 350m NNW of 339, immediately south of a contour bank. Soft surface, partly eroded A1h layer.

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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 - 0.02	6.42A	0.039A	5.51B	3.62	0.79	0.03				
0 - 0.1										
0.1 - 0.2	6.96A	0.037A	9.63B	6.04	0.72	0.08				
0.3 - 0.4	8.07A	0.051A	11.29B	9.86	0.71	0.24				
0.7 - 0.8	8.62A	0.086A	9.55B	12.78	0.65	0.76				
1.2 - 1.3	8.97A	0.17A	7.34B	13.3	0.56	1.62				
2 - 2.1	9.19A	0.203A	4.79B	12.86	0.51	2.62				
2.5 - 2.6	9.16A	0.096A	3.95B	9.84	0.46	2.45				
3.5 - 3.6	9.25A	0.146A	3.34B	12.36	0.56	4.73				
4.5 - 4.6	9.16A	0.126A	4.03B	16.22	0.49	6.9				
5.5 - 5.6	8.58A	0.216A	4.55B	21.92	0.47	8.280001				
6.5 - 6.6	5.2A	0.405A	2.08B	10.99	0.23	3.52				
7.3 - 7.4	4.94A	0.459A	3.62B	16.77	0.27	6.64				

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	<0.1B	1.15C	36.2J									
0 - 0.1												
0.1 - 0.2	<0.1B	0.8C	6.3J									
0.3 - 0.4	<0.1B	0.56C	<1J									
0.7 - 0.8	0.2B	0.21C	<1J									
1.2 - 1.3	2.1B	0.14C	<1J									
2 - 2.1	0.7B	0.06C	<1J									
2.5 - 2.6	<0.1B	0.06C	<1J									
3.5 - 3.6	0.2B	<0.01C	<1J									
4.5 - 4.6	0.1B	<0.01C	<1J									
5.5 - 5.6	0.1B	<0.01C	8.4J									
6.5 - 6.6	<0.1B	0.02C	13.1J									
7.3 - 7.4	<0.1B	0.04C	17.2J									

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 - 2.1										
2.5 - 2.6										
3.5 - 3.6										
4.5 - 4.6										
5.5 - 5.6										
6.5 - 6.6										
7.3 - 7.4										

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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