

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed209 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	W.T. Ward	<b>Locality:</b>	Frank Atkinson, Fairlight
<b>Date Desc.:</b>	30/01/86	<b>Elevation:</b>	352 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6650600 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	783800 Datum: AGD66	<b>Drainage:</b>	No Data

#### Geology

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

#### Land Form

<b>Rel/Slope Class:</b>	No Data	<b>Pattern Type:</b>	No Data
<b>Morph. Type:</b>	No Data	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	Pediment	<b>Slope Category:</b>	Very gently sloped
<b>Slope:</b>	3 %	<b>Aspect:</b>	200 degrees

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>	N/A	<b>Mapping Unit:</b>	N/A
<b>ASC Confidence:</b>	Confidence level not specified	<b>Principal Profile Form:</b>	Ug5.12
		<b>Great Soil Group:</b>	Black earth

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Dark reddish brown (5YR2/2-Dry); ; Medium heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, <2 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Weak consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
A12	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); ; Medium heavy clay; Weak grade of structure, 50-100 mm, Subangular blocky; Moderate grade of structure, <2 mm, Granular; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Basalt, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark brown (7.5YR3/2-Moist); , 7.5YR74, 0-2% , 5-15mm, Prominent; Medium heavy clay; Weak grade of structure, 50-100 mm, Subangular blocky; Weak grade of structure, <2 mm, Granular; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Weak consistence; 0-2%, medium gravelly, 6-20mm, subrounded, Basalt, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
Ck	0.55 - 1.2 m	Light olive grey (5Y6/2-Moist); , 5YR44, 10-20% , 5-15mm, Prominent; , 10YR82, 20-50% , 15-30mm, Prominent; Medium clay; Massive grade of structure; Weak grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 50-90%, coarse gravelly, 20-60mm, angular, Basalt, coarse fragments; Many (20 - 50 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.7 (pH meter);

#### Morphological Notes

A11 Carbonate is whiter than 10YR8/2. 5Y6/2 colour for 70-80cm is weathering rock. Soil darkens on drying. A shallow black earth on weathering basalt or ?trachyte.

#### Observation Notes

Parent Rock: residual, trachyte, Garrawilla Volcanics

#### Site Notes

Pediment, middle part. Surface stones (basaltic) cover 5% of surface. Weathered rock at 50cm depth. Drilling stopped in rock at 120cm. Surface has weak surface skin which breaks readily to coarse self mulching. Quite similar to Green Timber

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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	Acidity		%
						Cmol (+)/kg			
0 - 0.02	8.21A	0.169A	49.81B	16.63	2.55	0.21			
0 - 0.1	8.05A	0.065A	54.08B	19.72	1.82	0.62			
0.1 - 0.2	8.27A	0.195A	50.39B	18.74	0.82	0.6			
0.3 - 0.4	8.42A	0.178A	40.26B	20.94	0.69	0.61			
0.7 - 0.8	8.47A	0.179A	13.08B	11.25	0.28	0.38			

Depth m	CaCO3 %	Organic C %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle		Size FS %	Analysis	
								GV	CS		Silt	Clay
0 - 0.02	1.6B	2.37C									10.2	66.8
0 - 0.1	1.6B	2.04C	10.9J								9.4	62.1
0.1 - 0.2	6.6B	1.58C	1J								8.5	61.5
0.3 - 0.4	12.4B	1.35C	<1J								7.9	59.2
0.7 - 0.8	39.3B	0.63C	<1J								11.6	28.4

[illegible]

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**Laboratory Analyses Completed for this profile**

15A2_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 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