

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** bu002 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> W.T. Ward	<b>Locality:</b> Stock route, near Spring Plain
<b>Date Desc.:</b> 17/02/89	<b>Elevation:</b> 176 metres
<b>Map Ref.:</b> Sheet No. : 8738_S 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6684500 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 723800 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> Terrace plain	<b>Slope Category:</b> Level
<b>Slope:</b> 0 %	<b>Aspect:</b> No Data

**Surface Soil Condition (dry):** Soft

#### 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> N/A
	<b>Great Soil Group:</b> Grey clay

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); Dark greyish brown (10YR4/2-Dry); ; Light clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Strong grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 6 (pH meter); Common, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Very dark greyish brown (10YR3/2-Moist); ; Light clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Very dark greyish brown (10YR3/2-Moist); ; Light clay; Moderate grade of structure, 20-50 mm, Subangular 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;
A14	0.55 - 0.95 m	Dark brown (10YR3/3-Moist); ; Light clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 20-50 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; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	0.95 - 1.9 m	Brown (7.5YR4/4-Moist); , 10YR32, 2-10% , 5-15mm, Distinct; Light medium clay; Weak grade of structure, 50-100 mm, Lenticular; Weak grade of structure, 20-50 mm, Subangular 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; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 8.8 (pH meter);
B22	1.9 - 3.33 m	Brown (7.5YR4/4-Moist); , 10YR32, 0-2% , 5-15mm, Distinct; Light medium clay; Moderate grade of structure, 50-100 mm, Lenticular; Weak 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; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter);

#### Morphological Notes

A11 No slicks above 50cm. Nests of gypsum crystals occur at 110cm, less commonly in 120-130cm sample. Similar to Bingara pits but possibly browner at depth. Perhaps there is a

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A12      high aeolian component. Greyer colours (10YR5/3, brown) appear gradually at 320cm, suggesting drainage impedance.

**Observation Notes**

Parent Rock: alluvial sediment, clay, parna on third fan, Namoi

**Site Notes**

Site is between an old road and new diversion, Spring Plain. Moist surface hides cracks. 50m west of water bore 25247. Core is like 001 except that it is pale brown, and the deep carbonate nodules are not so large. Is it better drained, or

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Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na Cmol (+)/kg	Acidity		%
0 - 0.1	6.7A	0.21A	19.42B	13.89	2.14	1.04			
0.1 - 0.2	8.38A	0.154A	25.05B	15.32	0.57	2.42			
0.3 - 0.4	9.01A	0.276A	22.23B	17.57	0.45	7.43			
0.7 - 0.8	8.87A	0.728A	17.45B	19.35	0.64	13.29			
1.2 - 1.3	8.44A	1.222A	14.32B	18.85	0.69	11.68			
2.5 - 2.6	9.02A	0.66A	13.64B	20.28	0.7	12.9			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle		Size	Analysis	
								GV	CS		FS	Silt
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.1	<0.1B	1.74C	16.2J								19.8	52.7
0.1 - 0.2	0.3B	0.71C	4.2J								18.7	59.6
0.3 - 0.4	1.1B	0.53C	<1J								19.7	60.4
0.7 - 0.8	1.4B	0.48C	5.2J								20.1	58.5
1.2 - 1.3	0.7B	0.2C	17.4J								24.6	56.2
2.5 - 2.6	0.4B	0.13C	13.4J								21.1	62.2

[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