

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed119 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	M.E. Heape	<b>Locality:</b>	Forestry Commission of NSW, Bobbiwaa State Forest
<b>Date Desc.:</b>	11/02/86	<b>Elevation:</b>	294 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6663000 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	777000 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>	1 %	<b>Aspect:</b>	225 degrees

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

#### 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>	Uf4.3
		<b>Great Soil Group:</b>	Solodic soil

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A1	0 - 0.1 m	Brown (7.5YR4/2-Moist); Dark reddish grey (5YR4/2-Dry); , 7.5YR62, 2-10% , 15-30mm, Distinct; Medium clay; Weak grade of structure, 20-50 mm, Subangular blocky; Weak grade of structure, 2-5 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very weak consistence; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Wavy change to -
B21	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots;
B22	0.25 - 0.6 m	Brown (10YR4/3-Moist); , 7.5YR32, 20-50% , 30-mm, Prominent; Medium clay; Weak grade of structure, 20-50 mm, Prismatic; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; Field pH 7.5 (pH meter); Few, fine (1-2mm) roots;
B23	0.6 - 1 m	Brown (7.5YR5/4-Moist); , 7.5YR32, 10-20% , 15-30mm, Distinct; , 10YR82, 0-2% , 5-15mm, Prominent; Sandy clay loam; Moderate grade of structure, 10-20 mm, Angular blocky; Moderate grade of structure, 2-5 mm, Cast; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B24	1 - 1.3 m	Light yellowish brown (10YR6/4-Moist); , 7.5YR82, 10-20% , 15-30mm, Prominent; , 7.5YR32, 2-10% , 15-30mm, Prominent; Medium heavy clay; Weak grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 2-5 mm, Cast; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 0.01m2) Medium (2-5mm) macropores, Moderately moist; Strong consistence; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.5 (pH meter); Few, coarse (>5mm) roots; Diffuse, Smooth change to -
D	1.3 - 2.9 m	Red (2.5YR4/6-Moist); , 10YR54, 20-50% , 30-mm, Prominent; , 5YR34, 0-2% , 15-30mm, Prominent; Medium clay; Moderate grade of structure, 100-200 mm, Lenticular; Massive grade of structure; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; Field pH 5.5 (pH meter); Few, medium (2-5mm) roots;

#### Morphological Notes

A1 Sharp break at 165cm marks limit of pedisediment. The break is succeeded by 10cm sands and subangular fragments of sandstone and argillite. 2.5YR4/6 at 250-260 is 2-10%, the central colour of the peds. 250-260 has 2% 7.5YR2/0 charcoal, most

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B21      ly as fine pieces. Slicks = polished ped faces at 250. Suspected stratigraphic break from non-calcareous sand to calcareous sandy clays at 60cm. A solodic soil with ?aeolian lime on pedisediment over weathering sandstone, the whole profile  
B22      formerly red-weathered. Surprised to find slickensides below 200cm. The last two textures are "with sand". Topsoil texture in core looked sandy but felt sandy medium

**Observation Notes**

Parent Rock: colluvial sediment, from sandstone, with lime, sandstone Pilliga Sandstone, weathered

**Site Notes**

Target is inaccessible, this site is 350m away. Note base pedisediment at 160cm, stone layer.

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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	6.53A	0.123A	12.84B	2.35	0.92	0.04			
0 - 0.1	6.21A	0.182A	5.62B	4.03	0.72	0.57			
0.1 - 0.2	6.56A	0.094A	3.6B	4.55	0.53	1.24			
0.3 - 0.4	6.71A	0.17A	3.74B	6.85	0.22	2.77			
0.7 - 0.8	9.12A	0.668A	5.53B	14.41	0.22	6.68			
1.2 - 1.3	9.58A	0.569A	3.94B	10.78	0.13	5.4			
2.5 - 2.6	5.14A	0.45A	0.34B	6.85	0.15	5.02			

Depth  m	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density Mg/m3	Particle		Size FS %	Analysis	
	%	%	mg/kg	%	%	%		GV	CS		Silt	Clay
0 - 0.02	<0.1B	6.2C									9.9	19.1
0 - 0.1	<0.1B	2.81C	12.7J								10	18.7
0.1 - 0.2	0.2B	1.44C	5.2J								10.1	19.9
0.3 - 0.4	<0.1B	0.82C	2.2J								9.1	25.1
0.7 - 0.8	0.4B	0.23C	1.3J								8.3	31.2
1.2 - 1.3	1.4B	0.14C	1.5J								9.4	24.6
2.5 - 2.6	<0.1B	0.14C	3J								9.4	30.9

[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