

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed348 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

|   |  |
|---|--|
| <b>Desc. By:</b> W.T. Ward                  | <b>Locality:</b> J.Amos/R.Simpson, Woodville |
| <b>Date Desc.:</b> 30/10/87                 | <b>Elevation:</b> 296 metres                 |
| <b>Map Ref.:</b> Sheet No. : 8837_N 1:50000 | <b>Rainfall:</b> No Data                     |
| <b>Northing/Long.:</b> 6660350 AMG zone: 55 | <b>Runoff:</b> No Data                       |
| <b>Easting/Lat.:</b> 781300 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> Hillslope    | <b>Slope Category:</b> Gently inclined |
| <b>Slope:</b> 2 %               | <b>Aspect:</b> 180 degrees             |

**Surface Soil Condition (dry):** Self-mulching

#### 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> Ug5.15 |
|   | <b>Great Soil Group:</b> Brown clay   |

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

|     |               |   |
|-----|---------------|---|
| A11 | 0 - 0.1 m     | Dark reddish brown (5YR3/2-Moist); Dark reddish grey (5YR4/2-Dry); ; Light clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, coarse gravelly, 20-60mm, subangular, Ironstone, coarse fragments; Field pH 6 (pH meter); Few, very fine (0-1mm) roots;   |
| A12 | 0.1 - 0.25 m  | Dark reddish brown (5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots;  |
| A13 | 0.25 - 0.55 m | Dark reddish brown (5YR3/3-Moist); ; Medium heavy clay; Moderate grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) 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), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;                            |
| B21 | 0.55 - 0.9 m  | Dark reddish brown (2.5YR3/4-Moist); , 5YR32, 10-20% , 5-15mm, Distinct; , 7.5YR76, 0-2% , 5-15mm, Distinct; Medium heavy clay; Weak grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to - |
| B22 | 0.9 - 1.85 m  | Dark red (2.5YR3/6-Moist); ; Medium heavy clay; Moderate grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, medium gravelly, 6-20mm, angular, Ironstone, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -  |
| C1  | 1.85 - 3 m    | Pale yellow (2.5Y7/4-Moist); , 5YR54, 20-50% , 15-30mm, Prominent; , 5YR46, 0-2% , 5-15mm, Distinct; Medium clay; Massive grade of structure; Weak grade of structure, 2-5 mm, Cast; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, medium gravelly, 6-20mm, angular, Basalt, coarse fragments; Field pH 8.5 (pH meter);  |

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C2      3 - 3.5 m      Light grey (2.5Y7/2-Moist); , 7.5YR58, 10-20% , 15-30mm, Prominent; , 5YR32, 0-2% , 0-5mm, Distinct; Medium clay; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; 0-2%, medium gravelly, 6-20mm, angular, Basalt, coarse fragments; Field pH 8.5 (pH meter);

**Morphological Notes**

A11      Inwashed quartz sand at 65cm; some quartz and ironstone gravels at 40-50cm. Lump of ferruginous sandstone at 5cm; no segregations in second core below 10cm; polished peds below 150cm; several fine chips of basalt below 180cm. Dark reddish brown at 340 to 350 is insect frass in faunal passages.

A12

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**Observation Notes**

Parent Rock: residual, from basalt, Purlawaugh Formation

**Site Notes**

Sites 347-352 are spaced at 2m intervals; 353 is 90m from 352. 348 is on the flank of a puff.

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**Laboratory Test Results:**

| Depth<br>m | pH    | 1:5 EC | Exchangeable Cations |       |      | Exchangeable | CEC | ECEC | ESP     |
|------------|-------|--------|----------------------|-------|------|--------------|-----|------|---------|
|            |       | dS/m   | Ca                   | Mg    | K    | Na           |     |      | Acidity |
|            |       |        |                      |       |      |              |     |      |         |
| 0 - 0.1    | 6.6A  | 0.224A | 11.58B               | 11.62 | 1.54 | 0.6          |     |      |         |
| 0.1 - 0.2  | 7.16A | 0.101A | 15.61B               | 16.39 | 0.71 | 1.08         |     |      |         |
| 0.3 - 0.4  | 9A    | 0.277A | 12.25B               | 25.16 | 0.42 | 5.28         |     |      |         |
| 0.7 - 0.8  | 8.9A  | 0.796A | 10.67B               | 34.43 | 0.47 | 10.99        |     |      |         |
| 1.2 - 1.3  | 8.8A  | 1.048A | 8.85B                | 27.7  | 0.37 | 9.58         |     |      |         |
| 2.5 - 2.6  | 8.68A | 1.112A | 8.6B                 | 46.17 | 0.22 | 15           |     |      |         |
| 3.4 - 3.5  | 8.69A | 1.116A | 6.27B                | 45.7  | 0.16 | 14.2         |     |      |         |

| Depth     | CaCO <sub>3</sub> | Organic C | Avail. P | Total P | Total N | Total K | Bulk Density      | Particle Size Analysis |    |    |
|-----------|-------------------|-----------|----------|---------|---------|---------|-------------------|------------------------|----|----|
|           |                   |           |          |         |         |         |                   | GV                     | CS | FS |
| m         | %                 | %         | mg/kg    | %       | %       | %       | Mg/m <sup>3</sup> |                        |    |    |
| 0 - 0.1   | <0.1B             | 2.4C      | 15.4J    |         |         |         |                   |                        |    |    |
| 0.1 - 0.2 | <0.1B             | 1.64C     | 4.3J     |         |         |         |                   |                        |    |    |
| 0.3 - 0.4 | 1.4B              | 1.05C     | <1J      |         |         |         |                   |                        |    |    |
| 0.7 - 0.8 | 0.7B              | 0.78C     | <1J      |         |         |         |                   |                        |    |    |
| 1.2 - 1.3 | 7.6B              | 0.27C     | <1J      |         |         |         |                   |                        |    |    |
| 2.5 - 2.6 | 5.9B              | 0.3C      | 5.2J     |         |         |         |                   |                        |    |    |
| 3.4 - 3.5 | 23.8B             | 1.02C     | 4.7J     |         |         |         |                   |                        |    |    |

[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   |