

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed355 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	W.T. Ward	Locality:	stock route, at Twelve Mile Hill
Date Desc.:	25/08/87	Elevation:	340 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6653400 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	780700 Datum: AGD66	Drainage:	No Data

Geology

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

Land Form

Rel/Slope Class:	No Data	Pattern Type:	No Data
Morph. Type:	No Data	Relief:	No Data
Elem. Type:	Pediment	Slope Category:	No Data
Slope:	%	Aspect:	No Data

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Dy5.2
		Great Soil Group:	Solodic soil

Site Disturbance:

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Dark greyish brown (10YR4/2-Dry); ; Loamy sand; Weak grade of structure, 5-10 mm, Subangular blocky; Single grain grade of structure; Sandy (grains prominent) fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.16 m	Dark greyish brown (10YR4/2-Moist); , 2.5YR36, 0-2% , 0-5mm, Distinct; , 10YR73, 0-2% , 0-5mm, Distinct; Loamy sand; Weak grade of structure, 10-20 mm, Subangular blocky; Single grain grade of structure; Sandy (grains prominent) fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 5.5 (pH meter); Few, fine (1-2mm) roots; Gradual, Smooth change to -
A21	0.16 - 0.55 m	Pale brown (10YR6/3-Moist); , 5YR54, 0-2% , 5-15mm, Distinct; Loamy sand; Weak grade of structure, 20-50 mm, Subangular blocky; Single grain grade of structure; Sandy (grains prominent) fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; 0-2%, fine gravelly, 2-6mm, angular, Quartz, coarse fragments; Field pH 6 (pH meter); Few, very fine (0-1mm) roots;
A22	0.55 - 1.05 m	Light brownish grey (10YR6/2-Moist); , 7.5YR56, 10-20% , 15-30mm, Prominent; Clayey sand; Massive grade of structure; Single grain grade of structure; Sandy (grains prominent) fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very few (0 - 2 %), Ferruginous-organic, Medium (2 -6 mm), Nodules; Field pH 6 (pH meter); Few, very fine (0-1mm) roots;
B21	1.05 - 1.9 m	Strong brown (7.5YR5/6-Moist); , 10YR72, 10-20% , 15-30mm, Prominent; Clayey sand; Strong grade of structure, 100-200 mm, Prismatic; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Ferruginous, Medium (2 -6 mm), Nodules; Field pH 6 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
C1	1.9 - 3.05 m	Reddish yellow (7.5YR6/6-Moist); , 7.5YR52, 0-2% , 0-5mm, Distinct; , 10YR61, 20-50% , 30-mm, Prominent; Light clay; Massive grade of structure; Sandy (grains prominent) fabric; 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%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Nodules; Field pH 5 (pH meter);

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C2	3.05 - 4 m	Strong brown (7.5YR5/6-Moist); , 10YR61, 20-50% , 30-mm, Prominent; , 7.5YR52, 0-2% , 0-5mm, Faint; Clayey sand; Massive grade of structure; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 50-90%, medium gravelly, 6-20mm, angular tabular, Sandstone, coarse fragments; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Nodules; Field pH 4.5 (pH meter); Diffuse, Smooth change to -
R1	4 - 5.05 m	Rock
R2	5.05 - 6.05 m	Rock
D	6.05 - 7.3 m	Yellowish red (5YR4/6-Moist); , 10YR72, 20-50% , 30-mm, Prominent; , 7.5YR62, 0-2% , 5-15mm, Faint; Clayey sand; Single grain grade of structure; Massive grade of structure; Sandy (grains prominent) fabric; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, medium gravelly, 6-20mm, subangular, Quartz, coarse fragments; Field pH 4.5 (pH meter);

Morphological Notes

A11	The mottles at 10-20 are fine rusty stains adjoining roots. Surface pedality is very weak. The A1 grades to a sandy coherent massive A2 with strong brown stains. The B2 has pale grey (10YR7/2) stains mostly in fissures between prisms. There
A12	is much white sand (bleached by percolating water) in fissures from 150 to 170, and I wonder if the soil so far is a new soil in a prior ? thickened A horizon and if there is a break at 170 to a prior B horizon. However the B2 at 120-130 c
A21	ontinues to this level. The picked-down core is a little misleading as it exposes a prism face. Note sandy fabric with biscuity fracture at 250-260. The red colours at 450-460 are surrounded by yellow brown and then grey. This level also ha
A22	s some cutans. Quartz gravel at 610 marks bottom of pedisediment. The core then enters soft sands. 350-360 is very clayey sand. PS (after levelling quarry face in relation to this site): The 7.5YR5/6 colours at 120-130cm are possibly the re
B21	ddish patches on the quarry face. However, true palaeosol reds were not encountered in this core above -4m. The Purlawaugh contact is difficult to identify. It is possibly at 310cm where there are ferruginous fragments and a change in colou
C1	r form (from brown mottled concretionary to brown stained); or at 400cm where texture and red-weathering changes from clayey sand to sand with clay. I think the soil was originally a solodic on pedisediment over Purlawaugh and the top has b

Observation Notes

Parent Rock: colluvial sediment, from sandstone, non-calcareous, clay colluvium, weathered

Site Notes

A thin band of quartz gravel at 610cm marks bottom of pedisediment, at about the level where a similar band is seen in the quarry bank nearby, but the core then enters soft sand, not mud, which I think must occupy a channel in the Purlawaug

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,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