**Project Name:** **BAGO-MARAGLE FOREST SOIL SURVEY**
**Project Code:** **BGM_FSS** **Site ID:** **0054** **Observation ID:** **1**
**Agency Name:** **CSIRO Division of Soils (ACT)**

## Site Information

**Desc. By:** N.J. McKenzie
**Date Desc.:** 10/01/96
**Map Ref.:** Sheet No. : 8526 DGPS
**Northing/Long.:** 6025725 AMG zone: 55
**Easting/Lat.:** 616026 Datum: AGD66
**Locality:**
**Elevation:** 1051 metres
**Rainfall:** No Data
**Runoff:** No Data
**Drainage:** Well drained

## Geology

**ExposureType:** No Data
**Geol. Ref.:** DGA
**Conf. Sub. is Parent. Mat.:** Probable
**Substrate Material:** Adamellite

## Land Form

**Rel/Slope Class:** No Data
**Morph. Type:** Crest
**Elem. Type:** Hillcrest
**Slope:** 2 %
**Pattern Type:** No Data
**Relief:** No Data
**Slope Category:** No Data
**Aspect:** No Data

## Surface Soil Condition (dry): Firm

## Erosion:

## Soil Classification

**Australian Soil Classification:**
Haplic Magnesic Red Kandosol Thin Moderately gravelly Clay-loamy Clay-loamy Very deep
**Mapping Unit:** N/A
**Principal Profile Form:** Um5.52

**ASC Confidence:**
All necessary analytical data are available.
**Great Soil Group:** N/A

## Site Disturbance:

## Vegetation:

**Surface Coarse Fragments:** 20-50%, fine gravelly, 2-6mm, subangular, Quartz; 20-50%, medium gravelly, 6-20mm, subangular, Quartz; 20-50%, fine gravelly, 2-6mm, subangular,

## Profile Morphology

| | | |
|---|---|---|
| A1 | 0 - 0.04 m | Brown (7.5YR4/2-Moist); Biological mixing, 5YR43, 20-50% , Distinct; Medium sandy clay loam; Weak grade of structure, 20-50 mm, Polyhedral; 5-10 mm, Granular; Sandy (grains prominent) fabric; Moist; Weak consistence; 10-20%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; 10-20%, fine gravelly, 2-6mm, subangular tabular, dispersed, Coal, coarse fragments; Field pH 4.5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Clear, Smooth change to - |
| B21 | 0.04 - 0.25 m | Reddish brown (5YR4/4-Moist); Biological mixing, 5YR43, 20-50% , Distinct; Clay loam; Weak grade of structure, 20-50 mm, Polyhedral; 5-10 mm, Granular; Rough-ped fabric; Moderately moist; Weak consistence; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 5.5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm) roots; Few, coarse (>5mm) roots; Gradual, Smooth change to - |
| B22 | 0.25 - 0.46 m | Yellowish red (5YR5/6-Moist); Biological mixing, 5YR42, 0-2% , Distinct; Clay loam; Weak grade of structure, 20-50 mm, Polyhedral; Rough-ped fabric; Moderately moist; Very weak consistence; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm) roots; Few, coarse (>5mm) roots; Gradual, Smooth |
| C11 | 0.46 - 1.5 m | Reddish yellow (7.5YR6/8-Moist); ; Medium sandy clay loam; Massive grade of structure; Earthy fabric; Moist; Very weak consistence; 10-20%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 10-20%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 5 (Raupach); Few, very fine (0-1mm) roots; Clear, Smooth change to - |
| C12 | 1.5 - 2 m | Brownish yellow (10YR6/6-Moist); Substrate influence, 10YR66, 20-50% , Distinct; Medium sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Moderately moist; Very weak consistence; 10-20%, dispersed, Quartz, coarse fragments; 10-20%, dispersed, coarse fragments; Field pH 5.5 (Raupach); |

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| | | |
|---|---|---|
| C21 | 2 - 2.4 m | Brownish yellow (10YR6/8-Moist); Substrate influence, 10YR86, 20-50% , Distinct; Clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Moist; Very weak consistence; 10-20%, dispersed, Quartz, coarse fragments; 10-20%, dispersed, coarse fragments; Field pH 5.5 (Raupach); |
| C22 | 2.4 - 3 m | Very pale brown (10YR8/4-Moist); Substrate influence, 10YR68, 20-50% , Distinct; Medium sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Moderately moist; Weak consistence; Field pH 5.5 (Raupach); |

## Morphological Notes

| | |
|---|---|
| A1 | Abundant charcoal and coarse fragments. Very thin A1. |
| B21 | Fungal mats present or more like spheroids. |
| C11 | Much yellower C than transportational sites. Relatively whole coloured. |
| C12 | Colours are bands - inherited from parent material or due to Fe migration. |

## Observation Notes

Gentle crest. 1st residual site. Shallow solum with deep C despite adjac.outcrops. Concentration of coarse fragments on surface and A1 due to ants.

## Site Notes

COMP 42H,6225-1,BRG 124,120M FR CK APX

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## Laboratory Test Results:

| Depth | pH | 1:5 EC | Exchangeable Cations | | | | Exchangeable Acidity | CEC | ECEC | ESP |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ca | Mg | K | Na | | | | |
| m | | dS/m | Cmol (+)/kg | | | | | | | % |
| 0 - 0.04 | 3.78C | | 1.67H | 0.52 | 0.37 | 0.01 | 5.04J 0K | | 7.61E | |
| 0.04 - 0.25 | 4.21C | | 0H | 0.06 | 0.39 | 0 | 0.6J 0K | | 1.05E | |
| 0.25 - 0.46 | | | 0H | 0.37 | 0.52 | 0 | 2.34J 0K | | 3.23E | |
| 0.46 - 1.5 | 4.04C | | 0H | 0.16 | 0.45 | 0.01 | 1.58J 0K | | 2.2E | |
| 1.5 - 2 | 3.99C | | 0H | 0.13 | 0.21 | 0 | 1.95J 0K | | 2.28E | |
| 2 - 2.4 | 4.01C | | 0H | 0.11 | 0.11 | 0 | 1.53J 0K | | 1.75E | |

| Depth | CaCO3 | Organic C | Avail. P | Total P | Total N | Total K | Bulk Density | Particle Size Analysis GV | CS | FS | Silt | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| m | % | % | mg/kg | % | % | % | Mg/m3 | | | % | | |
| 0 - 0.04 | | 6.88B | | 190.9B | 0.15A | | 1.01 | 37.49 | | | | |
| 0.04 - 0.25 | | 0.1B | | 131.1B | 0.01A | | 1.21 | 32.15 | | | | |
| 0.25 - 0.46 | | 0.86B | | 132.5B | 0.03A | | 1.29 | 31.63 | | | | |
| 0.46 - 1.5 | | 0.12B | | 73.2B | 0.01A | | 1.36 | 32.87 | | | | |
| 1.5 - 2 | | 0.07B | | 53.5B | 0A | | | 30.18 | | | | |
| 2 - 2.4 | | 0.1B | | 82.1B | 0A | | | 30.23 | | | | |

| Depth | COLE | Gravimetric/Volumetric Water Contents | | | | | | K sat | K unsat |
|---|---|---|---|---|---|---|---|---|---|
| | | Sat. | 0.05 Bar | 0.1 Bar | 0.5 Bar | 1 Bar | 5 Bar | 15 Bar | |
| m | | g/g - m3/m3 | | | | | | mm/h | mm/h |
| 0 - 0.04 | | | | | | | | | |
| 0.04 - 0.25 | | | | | | | | | |
| 0.25 - 0.46 | | | | | | | | | |
| 0.46 - 1.5 | | | | | | | | | |
| 1.5 - 2 | | | | | | | | | |
| 2 - 2.4 | | | | | | | | | |

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**Laboratory Analyses Completed for this profile**

| | |
|---|---|
| 15_NR | Sum of Ex. cations + Ex. acidity - Not recorded |
| 15E1_AL | Exchangeable Al - by compulsive exchange, no pretreatment for soluble salts |
| 15E1_CA | Exchangeable bases (Ca2+,Mg2+,Na+,K+) by compulsive exchange, no pretreatment for soluble |
| 15E1_H | Exchangeable H - by compulsive exchange, no pretreatment for soluble salts |
| 15E1_K | Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts |
| 15E1_MG | Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts |
| 15E1_NA | Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts |
| 2A1 | Air-dry moisture content |
| 4B2 | pH of 1:5 soil/0.01M calcium chloride extract - following Method 4A1 |
| 6B2 | Total organic carbon - high frequency induction furnace, volumetric |
| 7A2 | Total nitrogen - semimicro Kjeldahl , automated colour |
| 9A3 | Total Phosphorus (ppm) - semimicro kjeldahl, automated colour |
| P10_GRAV | Gravel (%) |
| P10_S_0.48 | 0.48 micron (cumulative %) - Sedigraph |
| P10_S_1 | 1 micron (cumulative %) - Sedigraph |
| P10_S_1000 | 1000 micron (cumulative %) - Sedigraph |
| P10_S_125 | 125 micron (cumulative %) - Sedigraph |
| P10_S_15.6 | 15.6 micron (cumulative %) - Sedigraph |
| P10_S_2 | 2 micron (cumulative %) - Sedigraph |
| P10_S_20 | 20 micron (cumulative %) - Sedigraph |
| P10_S_2000 | 2000 micron (cumulative %) - Sedigraph |
| P10_S_250 | 250 micron (cumlative %) - Sedigraph |
| P10_S_3.9 | 3.9 micron (cumulative %) - Sedigraph |
| P10_S_31.2 | 31.2 micron (cumulative %) - Sedigraph |
| P10_S_500 | 500 micron (cumulative %) - Sedigraph |
| P10_S_53 | 53 micron (cumulative %) - Sedigraph |
| P10_S_63 | 63 micron (cumulative %) - Sedigraph |
| P10_S_7.8 | 7.8 micron (cumulative %) - Sedigraph |
| P3A1 | Bulk density - g/cm3 |