

**Project Name:** Regional  
**Project Code:** REG **Site ID:** T169 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> G.G. Murtha	<b>Locality:</b> 9KM south of Cargoon turnoff on Pentland Road:
<b>Date Desc.:</b> 12/05/71	<b>Elevation:</b> 762 metres
<b>Map Ref.:</b> Sheet No. : 7857 1:100000	<b>Rainfall:</b> 640
<b>Northing/Long.:</b> 144.945833333333	<b>Runoff:</b> Rapid
<b>Easting/Lat.:</b> -20.075	<b>Drainage:</b> Well drained

#### Geology

<b>ExposureType:</b> Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b> No Data
<b>Geol. Ref.:</b> Czn	<b>Substrate Material:</b> Undisturbed soil core, 2 m deep,Basalt

#### Land Form

<b>Rel/Slope Class:</b> Undulating rises 9-30m 3-10%	<b>Pattern Type:</b> Rises
<b>Morph. Type:</b> Mid-slope	<b>Relief:</b> 15 metres
<b>Elem. Type:</b> Plain	<b>Slope Category:</b> Gently inclined
<b>Slope:</b> 5.5 %	<b>Aspect:</b> No Data

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b> N/A
Melanic Eutrophic Brown Ferrosol	<b>Principal Profile Form:</b> Gn3.22
<b>ASC Confidence:</b>	<b>Great Soil Group:</b> No suitable group

All necessary analytical data are available.

**Site Disturbance:** No effective disturbance other than grazing by hoofed animals

**Vegetation:** Low Strata - Tussock grass, 0.51-1m, Mid-dense. \*Species includes - None recorded

Tall Strata - Tree, 6.01-12m, Sparse. \*Species includes - Eucalyptus drepanophylla, Eucalyptus papuana

**Surface Coarse Fragments:** 2-10%, , subrounded, Basalt

#### Profile Morphology

A1	0 - 0.1 m	Very dark brown (7.5YR2/2-Moist); ; Loam (Heavy); Moderate grade of structure, 10-20 mm, Angular blocky; Dry; Very firm consistence; Very few (0 - 2 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules; Gradual change to -
B1	0.1 - 0.2 m	Dark brown (7.5YR3/2-Moist); ; Clay loam; Moderate grade of structure, 10-20 mm, Angular blocky; Moist; Weak consistence; Few (2 - 10 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules; Gradual change to -
B1	0.2 - 0.3 m	Brown (7.5YR4/4-Moist); ; Light clay; Moderate grade of structure, Angular blocky; Moist; Weak consistence; Few (2 - 10 %), Ferromanganiferous, Coarse (6 - 20 mm), Nodules; Gradual change to -
B21	0.3 - 0.45 m	Strong brown (7.5YR4/5-Moist); ; Medium clay; Moderate grade of structure, 5-10 mm, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Manganiferous, , Concretions;
B21	0.45 - 0.6 m	Strong brown (7.5YR4/5-Moist); ; Medium clay; Moderate grade of structure, 5-10 mm, Angular blocky; Moist; Firm consistence; 2-10%, Basalt, coarse fragments; Many (20 - 50 %), Ferromanganiferous, Coarse (6 - 20 mm), Nodules; Diffuse change to -
B22	0.6 - 0.75 m	Yellowish brown (10YR5/6-Moist); , 5YR56, 10-20% , 5-15mm, Distinct; , 10-20% , 5-15mm, Distinct; Heavy clay; , Angular blocky; Smooth-ped fabric; Moist; Very firm consistence; Very few (0 - 2 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules; Gradual change to -
	0.75 - 0.9 m	Reddish brown (5YR5/4-Moist); , 10YR54, 2-10% , 5-15mm, Distinct; , 2-10% , 5-15mm, Distinct; Heavy clay; , Angular blocky; Smooth-ped fabric; Very firm consistence; Very few (0 - 2 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules;
	0.9 - 1.2 m	Reddish brown (5YR5/4-Moist); , 10YR54, 2-10% , 5-15mm, Distinct; , 2-10% , 5-15mm, Distinct; Heavy clay; , Angular blocky; Smooth-ped fabric; Very firm consistence; Very few (0 - 2 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules;
	1.2 - 1.5 m	Reddish brown (5YR5/4-Moist); , 10YR54, 2-10% , 5-15mm, Distinct; , 2-10% , 5-15mm, Distinct; Heavy clay; , Angular blocky; Smooth-ped fabric; Very firm consistence; Very few (0 - 2 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules;

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1.5 - 1.8 m      Yellowish brown (10YR5/4-Moist); , 10YR52, 10-20% , 5-15mm, Faint; , 10-20% , 5-15mm, Faint;  
Heavy clay; , Angular blocky; Very firm consistence;

1.8 - 2 m      ;

**Morphological Notes**

Weathered basalt with pockets of LBG clay:

**Observation Notes**

VENEER OF FEMN NODULES ON SURFACE:FLOATERS ON SURFACE AND IN PROFILE:150-180CM COARSE  
SLICKENSIDES AND MUCH      WEATHERED BASALT:

**Site Notes**

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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 Cmol (+)/kg	Acidity		%
0 - 0.1	6.6A	0.059A	16.1B	5.6	1.5	0.05			
0.1 - 0.2	6.5A	0.047A	13B	4.6	1.1	0.05			
0.2 - 0.3	6.3A	0.053A	12.9B	4.6	1.1	0.07			
0.3 - 0.45	6.4A	0.059A	11.3B	4.7	0.97	0.12			
0.45 - 0.6	6.6A	0.044A							
0.6 - 0.75	6.7A	0.044A	8.5B	5.2	0.48	0.11			
0.75 - 0.9	6.9A	0.044A							
0.9 - 1.2	7A	0.056A	12.6B	9.4	0.24	0.26			
1.2 - 1.5	7.1A	0.047A							
1.5 - 1.8		0.047A							
1.8 - 2		0.047A							

Depth	CaCO3	Organic	Avail.	Total	Total	Total	Bulk	Particle		Size	Analysis	
m	%	C	P	P	N	K	Density	GV	CS	FS	Silt	Clay
		%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.1		1.75D	58B	0.14A	0.13A	0.55A		0	17A	20	25	44
0.1 - 0.2		1.01D	7B		0.09A			0	12A	16	23	54
0.2 - 0.3		0.68D	5B		0.07A			0	11A	14	14	63
0.3 - 0.45		0.44D	5B		0.05A			0	7A	11	13	74
0.45 - 0.6		0.36D										
0.6 - 0.75			7B	0.056A		0.23A		0	7A	5	12	76
0.75 - 0.9												
0.9 - 1.2		0.21D	8B	0.032A		0.14A		0	3A	16	15	69
1.2 - 1.5												
1.5 - 1.8		0.1D						0	25A	18	10	46
1.8 - 2								0	37A	20	9	34

[illegible]

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**Laboratory Analyses Completed for this profile**

10A1	Total sulfur - X-ray fluorescence
12_HF_CU	Total element - Cu(mg/kg) - HF/HClO4 Digest
12_HF_FE	Total element - Fe(%) - HF/HClO4 Digest
12_HF_MN	Total element - Mn(mg/kg) - HF/HClO4 Digest
12_HF_ZN	Total element - Zn(mg/kg) - HF/HClO4 Digest
13C1_FE	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
15A2_CA	Exchangeable bases (Ca2+,Mg2+,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
17A1	Total potassium - X-ray fluorescence
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
6A1_UC	Organic carbon (%) - Uncorrected Walkley and Black method
7A2	Total nitrogen - semimicro Kjeldahl , automated colour
9A1	Total phosphorus - X-ray fluorescence
9G_BSES	Available P (mg/kg) - Acid P - 0.005M H2SO4 (BSES)
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P10_GRAV	Gravel (%)
XRD_C_Hm	Hematite - X-Ray Diffraction
XRD_C_Is	Interstratified clay minerals - X-Ray Diffraction
XRD_C_Ka	Kaolin - X-Ray Diffraction