Project Name: DD
Project Code: DD **Site ID:** B560 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: C.H. Thompson
Date Desc.: 06/10/66
Map Ref.: Sheet No. : 9242 1:100000
Northing/Long.: 151.516666666667
Easting/Lat.: -27.55
Locality:
Elevation: 396 metres
Rainfall: 650
Runoff: Rapid
Drainage: Imperfectly drained

Geology

ExposureType: Soil pit
Geol. Ref.: Czw
Conf. Sub. is Parent. Mat.: No Data
Substrate Material: Undisturbed soil core, 2.1 m deep,Unconsolidated material (unidentified)

Land Form

Rel/Slope Class: No Data
Morph. Type: Mid-slope
Elem. Type: Pediment
Slope: 3.5 %
Pattern Type: No Data
Relief: No Data
Slope Category: No Data
Aspect: No Data

Surface Soil Condition (dry): Self-mulching

Erosion:

Soil Classification

Australian Soil Classification:
Endocalcareous-Endohypersodic Self-Mulching Black Vertosol
Mapping Unit: N/A
Principal Profile Form: Ug5.16
ASC Confidence:
All necessary analytical data are available.
Great Soil Group: Black earth

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

Vegetation:

Tall Strata - Tussock grass, 0.26-0.5m, Closed or dense. *Species includes - Chloris pectinata, Panicum queenslandicum,
Dichanthium sericeum

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

AB	0 - 0.05 m	Very dark grey (10YR3/1-Dry); ; Medium clay; Strong grade of structure, <2 mm, Granular; Dry; Loose consistence; Field pH 6.8 (pH meter); Sharp change to -
B2	0.05 - 0.1 m	Black (10YR2/1-Moist); ; Heavy clay; Strong grade of structure, 20-50 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.9 (pH meter);
B2	0.1 - 0.2 m	Black (10YR2/1-Moist); ; Heavy clay; Strong grade of structure, 20-50 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 7.6 (pH meter);
B2	0.2 - 0.3 m	Black (10YR2/1-Moist); ; Heavy clay; Strong grade of structure, 20-50 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 8.1 (pH meter);
B2	0.3 - 0.45 m	Black (10YR2/1-Moist); ; Heavy clay; Strong grade of structure, 20-50 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 8.3 (pH meter); Diffuse change to -
B2	0.45 - 0.6 m	Very dark grey (10YR3/1-Moist); ; Heavy clay; Moderate grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.4 (pH meter);
B2	0.6 - 0.82 m	Very dark grey (10YR3/1-Moist); ; Heavy clay; Moderate grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.4 (pH meter); Diffuse change to -
B2	0.82 - 0.9 m	Very dark grey (10YR3/1-Moist); , 10YR42, 20-50% , 5-15mm, Distinct; , 20-50% , 5-15mm, Distinct; Heavy clay; Moderate grade of structure, Lenticular; , Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Very few (0 - 2 %), Gypseous, , Crystals; Field pH 7.8 (pH meter);

Project Name: **DD**
Project Code: **DD** **Site ID:** **B560** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

B2	0.9 - 1.05 m	Very dark grey (10YR3/1-Moist); , 10YR42, 20-50% , 5-15mm, Distinct; , 20-50% , 5-15mm, Distinct; Heavy clay; , Lenticular; , Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Very few (0 - 2 %), Gypseous, , Crystals; Field pH 7.9 (pH meter); Diffuse change to -
B2	1.05 - 1.2 m	Dark greyish brown (10YR4/2-Moist); ; Heavy clay; Strong grade of structure, Lenticular; Strong grade of structure, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, , Soft segregations; Very few (0 - 2 %), Gypseous, , Crystals; Field pH 7.9 (pH
B2	1.2 - 1.5 m	Dark greyish brown (10YR4/2-Moist); ; Heavy clay; Strong grade of structure, Lenticular; Strong grade of structure, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, , Soft segregations; Very few (0 - 2 %), Gypseous, , Crystals; Field pH 8 (pH
B2	1.5 - 1.75 m	Dark greyish brown (10YR4/2-Moist); , 10YR43; , 10YR41; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, , Soft segregations; Very few (0 - 2 %), Gypseous, , Crystals; Field pH 7.9 (pH meter);
B2	1.75 - 1.9 m	Dark greyish brown (10YR4/2-Moist); , 10YR43; , 10YR41; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, , Soft segregations; Very few (0 - 2 %), Gypseous, , Crystals; Field pH 8.7 (pH meter);
B2	1.9 - 2.1 m	Dark greyish brown (10YR4/2-Moist); , 10YR43; , 10YR41; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Firm consistence; Very few (0 - 2 %), Calcareous, , Soft segregations; Field pH 8.8 (pH meter); Clear change to -
D	2.1 - 2.2 m	Dark greyish brown (10YR4/2-Moist); , 10YR43; , 10YR41; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Firm consistence; 0-2%, coarse gravelly, 20-60mm, rounded, Basalt, coarse fragments; Very few (0 - 2 %), Calcareous, , Soft segregations; Field pH 8.9 (pH meter);
D	2.2 - 2.3 m	Greyish brown (10YR5/2-Moist); , 10YR54, 20-50% , 5-15mm, Distinct; , N50, 20-50% , 5-15mm, Distinct; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, , Soft segregations; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.8 (pH
D	2.3 - 2.4 m	Greyish brown (10YR5/2-Moist); , 10YR54, 20-50% , 5-15mm, Distinct; , N50, 20-50% , 5-15mm, Distinct; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, , Soft segregations; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH
D	2.4 - 2.55 m	Greyish brown (10YR5/2-Moist); , 10YR54, 20-50% , 5-15mm, Distinct; , N50, 20-50% , 5-15mm, Distinct; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence; Very few (0 - 2 %), Manganiferous, , Soft segregations; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.8 (pH meter); Abrupt change to -
D	2.55 - 2.7 m	Greenish grey (5GY6/1-Moist); , 7.5YR58, 10-20% , 15-30mm, Distinct; , 10-20% , 15-30mm, Distinct; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence; Many (20 - 50 %), Manganiferous, , Nodules; Field pH 8.5 (pH meter);
D	2.7 - 2.8 m	Greenish grey (5GY6/1-Moist); , 7.5YR58, 10-20% , 15-30mm, Distinct; , 10-20% , 15-30mm, Distinct; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence; Few (2 - 10 %), Manganiferous, , Nodules; Field pH 8 (pH meter);
D	2.8 - 3 m	(N6/0-Moist); , 10YR56, 20-50% , 5-15mm, Prominent; , 2.5YR46, 20-50% , 5-15mm, Prominent; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence;
D	3 - 3.15 m	(N6/0-Moist); , 10YR56, 20-50% , 5-15mm, Prominent; , 2.5YR46, 20-50% , 5-15mm, Prominent; Heavy clay; Strong grade of structure, 100-200 mm, Lenticular; 20-50 mm, Angular blocky; Moist; Very firm consistence;

Morphological Notes

Observation Notes

0-5CM GRANULAR TO BLOCKY STRUCTURE. VERY FEW TO FEW MEDIUM SANDSTONE FRAGMENTS TO 260CM:BELOW 2.8M
MATERIAL IS ES SENTIALLY WALLOON CLAY WITH YELLOW-BROWN SHALE BANDS:

Site Notes

MT. RUSSELL

Project Name: DD
Project Code: DD **Site ID:** B560 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

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 - 0.05	6.8A	0.13A	25B	10.8	1.7	1.1	2.6D			
0.05 - 0.1	6.9A	0.08A	23B	9.9	0.85	1.4	0.6D			
0.1 - 0.2	7.6A	0.09A	29.2B	12.5	0.5	3.4	0D			
0.2 - 0.3	8.1A	0.18A								
0.3 - 0.45	8.3A	0.57A	31.2B	16.6	0.38	7.3	0D			
0.45 - 0.6	8.4A	1.08A								
0.6 - 0.82	8.4A	1.32A	30.8B	20	0.48	10.8	0D			
0.82 - 0.9	7.8A	8.92A								
0.9 - 1.05	7.9A	20.3A	167B	16.8	0.46	9.2	0D			
1.05 - 1.2	7.9A	8.38A	126B	17.3	0.53	9.2	0D			
1.2 - 1.5	8A	6.22A	43B	16.6	0.44	10.2	0D			
1.5 - 1.75	7.9A	23.5A	62.2B	15.9	0.38	10.3	0D			
1.75 - 1.9	8.7A	1.32A	34.5B	15.9	0.46	10.4	0D			
1.9 - 2.1	8.7A	1.41A								
2.1 - 2.2	8.9A	1.46A								
2.2 - 2.3	8.8A	1.38A								
2.3 - 2.4	9A	1.3A								
2.4 - 2.55	8.8A	1.22A	15.2K	11.3	0.15	9.5	0D			
2.55 - 2.7	8.5A	1.19A								
2.7 - 2.8	8A	1.03A	11K	10	0.17	9	0D			

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 - 0.05		4.19A	20A 42B	0.057A	0.28B	0.64A	1.25		6C	30	18	38
0.05 - 0.1		2.85A	12A 20B	0.04A	0.18B	0.55A	1.38		7C	28	18	42
0.1 - 0.2		2.56A	9.4A 11B	0.036A	0.14B	0.55A			5C	25	17	46
0.2 - 0.3	0.1C											
0.3 - 0.45	0.1C	2.27A		0.032A	0.11B	0.58A			4C	20	15	56
0.45 - 0.6	0.5C						1.43					
0.6 - 0.82	1.3C	1.69A		0.03A	0.072B	0.62A			4C	18	16	57
0.82 - 0.9	3.2C	1.22A		0.034A	0.043B	0.61A			4C	18	14	53
0.9 - 1.05	5C	0.58A		0.033A	0.023B	0.56A			4C	17	14	53
1.05 - 1.2	4.8C			0.034A	0.02B	0.58A		3	4C	19	14	52
1.2 - 1.5	4.8C			0.032A	0.012B	0.56A		1	3C	20	15	53
1.5 - 1.75	5.7C			0.04A	0.008B	0.52A		14	3C	16	14	52
1.75 - 1.9	17C			0.067A		0.6A		15	3C	16	11	51
1.9 - 2.1												
2.1 - 2.2								2	4C	16	19	54
2.2 - 2.3												
2.3 - 2.4												
2.4 - 2.55	0.7C							5	3C	17	31	49
2.55 - 2.7												
2.7 - 2.8	0.1C							1	2C	9	32	58

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

Project Name: DD
Project Code: DD **Site ID:** B560 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

0 - 0.05	0.4F	0.27H
0.05 - 0.1	0.44F	0.33H
0.1 - 0.2		
0.2 - 0.3		
0.3 - 0.45		
0.45 - 0.6	0.49F	0.38H
0.6 - 0.82		
0.82 - 0.9		
0.9 - 1.05		
1.05 - 1.2		
1.2 - 1.5		
1.5 - 1.75		
1.75 - 1.9		
1.9 - 2.1		
2.1 - 2.2		
2.2 - 2.3		
2.3 - 2.4		
2.4 - 2.55		
2.55 - 2.7		
2.7 - 2.8		

Project Name: DD
Project Code: DD **Site ID:** B560 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Laboratory Analyses Completed for this profile

10A1	Total sulfur - X-ray fluorescence
15_NR_CA	Exch. basic cations (Ca++) - meq per 100g of soil - Not recorded
15_NR_H	Hydrogen Cation - meq per 100g of soil - Not recorded
15_NR_K	Exch. basic cations (K++) - meq per 100g of soil - Not recorded
15_NR_MG	Exch. basic cations (Mg++) - meq per 100g of soil - Not recorded
15_NR_NA	Exch. basic cations (Na++) - meq per 100g of soil - Not recorded
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
19B_NR	Calcium Carbonate (CaCO3) - Not recorded
2_LOI	Loss on Ignition (%)
2A1	Air-dry moisture content
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
6A1	Organic carbon - Walkley and Black
7_NR	Total nitrogen (%) - Not recorded
9A1	Total phosphorus - X-ray fluorescence
9B_9C	Available P (mg/kg) - Bicarbonate P - 0.5M NaHCO3 extractable
9G_BSES	Available P (mg/kg) - Acid P - 0.005M H2SO4 (BSES)
P10_GRAV	Gravel (%)
P10_NR_C	Clay (%) - Not recorded
P10_NR_CS	Coarse sand (%) - Not recorded
P10_NR_FS	Fine sand (%) - Not recorded
P10_NR_Z	Silt (%) - Not recorded
P3A1	Bulk density - g/cm3
P3B3VLe004	0.04 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on suction plate
P3B3VLe01	0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on suction plate
P3B3VLe03	0.3 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on suction plate
P3B3VLe06	0.6 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate
P3B3VLe15	15 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate
P3B3VLe2	2 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate
P3B3VLe7	7 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate