

**Project Name:** Preliminary Assessment and Survey of Land Degradation in the Dalrymple Shire, QLD  
**Project Code:** DLR **Site ID:** T509 **Observation ID:** 1  
**Agency Name:** QLD Department of Primary Industries

#### Site Information

<b>Desc. By:</b> M.G. Cannon	<b>Locality:</b>
<b>Date Desc.:</b> 04/12/91	<b>Elevation:</b> 227 metres
<b>Map Ref.:</b> Sheet No. : 8257 GPS	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 7745384 AMG zone: 55	<b>Runoff:</b> Moderately rapid
<b>Easting/Lat.:</b> 491391 Datum: AGD66	<b>Drainage:</b> Imperfectly drained

#### Geology

<b>ExposureType:</b> No Data	<b>Conf. Sub. is Parent. Mat.:</b> No Data
<b>Geol. Ref.:</b> Odr	<b>Substrate Material:</b> Undisturbed soil core, No Data

#### Land Form

<b>Rel/Slope Class:</b> Gently undulating plains <9m 1-3%	<b>Pattern Type:</b> Rises
<b>Morph. Type:</b> Flat	<b>Relief:</b> No Data
<b>Elem. Type:</b> Plain	<b>Slope Category:</b> Level
<b>Slope:</b> 1 %	<b>Aspect:</b> 180 degrees

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b> N/A
Bleached Calcic Brown Chromosol Thick Non-gravelly Loamy Clayey Very deep	<b>Principal Profile Form:</b> Dy2.43
<b>ASC Confidence:</b>	<b>Great Soil Group:</b> No suitable

All necessary analytical data are available.

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

**Vegetation:** Low Strata - Tussock grass, <0.25m, Sparse. \*Species includes - Bothriochloa pertusa, Cyperus species  
 Mid Strata - Tree, 3.01-6m, Mid-dense. \*Species includes - Eucalyptus platyphylla  
 Tall Strata - Tree, 6.01-12m, Sparse. \*Species includes - Eucalyptus platyphylla, Eucalyptus polycarpa

**Surface Coarse Fragments:** No surface coarse fragments

#### Profile Morphology

A11	0 - 0.05 m	Brown (10YR4/3-Moist); ; Fine sandy loam (Heavy); Massive grade of structure; Earthy fabric; Moderately moist; Very weak consistence; , Calcareous, , , , Gypseous, , , ; Field pH 6 (Raupach, 0.03); Common, fine (1-2mm) roots; Clear, Smooth change to -
A12j	0.05 - 0.21 m	Brown (10YR5/3-Moist); ; Sandy loam (Heavy); Massive grade of structure; Earthy fabric; Moderately moist; Very weak consistence; , Calcareous, , , , Gypseous, , , ; Field pH 6.5 (Raupach, 0.1); Few, fine (1-2mm) roots; Gradual, Wavy change to -
A21j	0.21 - 0.4 m	Brownish yellow (10YR6/6-Moist); ; Sandy loam (Heavy); Massive grade of structure; Earthy fabric; Moderately moist; Very weak consistence; , Calcareous, , , , Gypseous, , , ; Field pH 6.5 (Raupach, 0.3); Few, fine (1-2mm) roots; Gradual, Wavy change to -
A22e	0.4 - 0.57 m	Light yellowish brown (10YR6/4-Moist); ; Sandy clay loam; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules; , Calcareous, , , , Gypseous, , , ; Field pH 7 (Raupach, 0.5); Few, very fine (0-1mm) roots; Abrupt, Wavy change to -
B21	0.57 - 0.84 m	Light olive brown (2.5Y5/4-Moist); ; Medium heavy clay; Strong grade of structure, 50-100 mm, Columnar; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Dry; Rigid consistence; Common (10 - 20 %), Manganiferous, Medium (2 -6 mm), Nodules; , Calcareous, , , , Gypseous, , , ; Field pH 7.5 (Raupach, 0.7); Common, fine (1-2mm) roots; Clear change to -
B22k	0.84 - 1.22 m	Light brownish grey (2.5Y6/3-Moist); ; Sandy medium heavy clay; Moderate grade of structure, 50-100 mm, Angular blocky; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Dry; Rigid consistence; 2-10%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Common (10 - 20 %), Manganiferous, Coarse (6 - 20 mm), Nodules; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules; , Gypseous, , , ; Field pH 9.9 (Raupach, 1); Common, fine (1-2mm) roots; Gradual change to -
B23	1.22 - 1.66 m	Greyish brown (2.5Y5/2-Moist); Mottles, 2.5Y68, 2-10% , 5-15mm, Distinct; Mottles, 2-10% ; Sandy medium clay; Moderate grade of structure, 20-50 mm, Columnar; Smooth-ped fabric; Dry; Very firm consistence; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules; , Gypseous, , , ; Field pH 9.5 (Raupach, 1.4); Few, coarse (>5mm) roots; Gradual change to -

**Project Name:** Preliminary Assessment and Survey of Land Degradation in the Dalrypmle Shire, QLD  
**Project Code:** DLR                      **Site ID:** T509                      **Observation ID:** 1  
**Agency Name:** QLD Department of Primary Industries

D            1.66 - 1.8 m            Brown (10YR5/3-Moist); ; Coarse sandy loam (Light); Massive grade of structure; Earthy fabric;  
Dry; Weak consistence; 10-20%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse  
fragments; , Calcareous, , ; , Gypseous, , ; Field pH 8 (Raupach, 1.7);

**Morphological Notes**

**Observation Notes**

DLR1015; THIN SURFACE SKIN OF FINE SAND <1CM ON SOIL.

**Site Notes**

**Project Name:** Preliminary Assessment and Survey of Land Degradation in the Dalrymple Shire, QLD  
**Project Code:** DLR                      **Site ID:** T509                      **Observation ID:** 1  
**Agency Name:** QLD Department of Primary Industries

**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 - 0.05	6.1A	0.06A	4B	1.9	1.1	0.4		5.9I	6.78
			3.25J	1.3	0.25	0.02			0.34
0.05 - 0.21	6.33A	0.01A	2.63J	0.94	0.18	0.02		4.1I	0.49
0.21 - 0.4	6.92A	0.01A							
0.4 - 0.57	7.02A	0.07A	4B	1.9	1	0.44			
0.57 - 0.84	7.79A	0.02A	12J	4.75	0.33	0.2		22.8I	0.88
0.84 - 1.22	8.82A	0.05A							
1.22 - 1.66	8.46A	0.1A	16.9J	4.3	0.3	0.15		20.3I	0.74
1.66 - 1.8	7.77A	0.02A	4.71J	1.54	0.14	0.03		5.7I	0.53

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 - 0.05		1.1B		0.022A	0.05A	2.28A			28A	40	20	12
0.05 - 0.21		0.4B							31A	44	15	10
0.21 - 0.4												
0.4 - 0.57												
0.57 - 0.84									25A	25	10	40
0.84 - 1.22												
1.22 - 1.66									28A	34	9	29
1.66 - 1.8									49A	31	8	11

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 - 0.05										
0.05 - 0.21										
0.21 - 0.4										
0.4 - 0.57										
0.57 - 0.84										
0.84 - 1.22										
1.22 - 1.66										
1.66 - 1.8										

**Project Name:** Preliminary Assessment and Survey of Land Degradation in the Dalrymple Shire, QLD  
**Project Code:** DLR                      **Site ID:** T509                      **Observation ID:** 1  
**Agency Name:** QLD Department of Primary Industries

**Laboratory Analyses Completed for this profile**

10A1	Total sulfur - X-ray fluorescence
10B	Extractable sulfur(mg/kg) - Phosphate extractable sulfur
12A1_CU	DTPA - extractable copper, zinc, manganese and iron
12A1_FE	DTPA - extractable copper, zinc, manganese and iron
12A1_MN	DTPA - extractable copper, zinc, manganese and iron
12A1_ZN	DTPA - extractable copper, zinc, manganese and iron
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
15F1_CA	Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts
15F1_K	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_MG	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_NA	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F3	CEC by 0.01M silver-thiourea (AgTU)+
15N1	Exchangeable sodium percentage (ESP)
17A1	Total potassium - X-ray fluorescence
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A1	Chloride - 1:5 soil/water extract, potentiometric titration
6B2	Total organic carbon - high frequency induction furnace, volumetric
7A2	Total nitrogen - semimicro Kjeldahl , automated colour
9A1	Total phosphorus - X-ray fluorescence
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