

**Project Name:** Regional  
**Project Code:** REG **Site ID:** T224 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

**Site Information**

<b>Desc. By:</b>	R.J. Coventry	<b>Locality:</b>	.6 Km west of Torrens Ck on Flinders H'way.
<b>Date Desc.:</b>	14/08/75	<b>Elevation:</b>	No Data
<b>Map Ref.:</b>	Sheet No. : 7956 1:100000	<b>Rainfall:</b>	600
<b>Northing/Long.:</b>	145.020833333333	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	-20.770833333333	<b>Drainage:</b>	No Data

**Geology**

<b>ExposureType:</b>	Existing vertical exposure	<b>Conf. Sub. is Parent. Mat.:</b>	No Data
<b>Geol. Ref.:</b>	Qa	<b>Substrate Material:</b>	No Data

**Land Form**

<b>Rel/Slope Class:</b>	No Data	<b>Pattern Type:</b>	No Data
<b>Morph. Type:</b>	No Data	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	No Data	<b>Slope Category:</b>	No Data
<b>Slope:</b>	0 %	<b>Aspect:</b>	No Data

**Surface Soil Condition (dry):**

**Erosion:**

**Soil Classification**

<b>Australian Soil Classification:</b>		<b>Mapping Unit:</b>	N/A
Haplic Mesotrophic Red Kandosol		<b>Principal Profile Form:</b>	Gn2.11
<b>ASC Confidence:</b>		<b>Great Soil Group:</b>	Red earth
All necessary analytical data are available.			

**Site Disturbance:**

**Vegetation:** Low Strata - Tussock grass, 0.51-1m, Sparse. \*Species includes - Heteropogon contortus  
Mid Strata - Tree, 3.01-6m, Very sparse. \*Species includes - Acacia species  
Tall Strata - Tree, 6.01-12m, Very sparse. \*Species includes - Eucalyptus whitei

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

**Profile Morphology**

Ap	0 - 0.09 m	Yellowish red (5YR3/5-Moist); ; Sandy loam; Massive grade of structure; Dry; Weak consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Tubules; Many, fine (1-2mm) roots; Clear change to -
A1	0.1 - 0.16 m	Dark reddish brown (5YR3/4-Moist); ; Sandy loam; Massive grade of structure; Dry; Firm consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Tubules; Many, fine (1-2mm) roots; Diffuse change to -
A3	0.16 - 0.2 m	Dark red (2.5YR3/6-Moist); ; Sandy loam; Massive grade of structure; Dry; Very firm consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Tubules; Common, fine (1-2mm) roots;
A3	0.2 - 0.25 m	Dark red (2.5YR3/6-Moist); ; Sandy loam; Massive grade of structure; Dry; Very firm consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Tubules; Common, fine (1-2mm) roots;
A3	0.25 - 0.3 m	Dark red (2.5YR3/6-Moist); ; Sandy loam; Massive grade of structure; Dry; Very firm consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Tubules; Common, fine (1-2mm) roots;
A3	0.3 - 0.34 m	Dark red (2.5YR3/6-Moist); ; Sandy loam; Massive grade of structure; Dry; Very firm consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Tubules; Common, fine (1-2mm) roots; Gradual change to -
B1	0.34 - 0.45 m	Dark red (2.5YR3/6-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Very firm consistence; Common, fine (1-2mm) roots;
B1	0.45 - 0.6 m	Dark red (2.5YR3/6-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Strong consistence; Few, fine (1-2mm) roots;
B1	0.6 - 0.67 m	Dark red (2.5YR3/6-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Strong consistence; Few, fine (1-2mm) roots; Gradual change to -
B21	0.67 - 0.75 m	Red (10R4/6-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;

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B21	0.75 - 0.9 m	Red (10R4/6-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	0.9 - 1.05 m	Red (10R4/6-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	1.05 - 1.2 m	Red (10R4/6-Moist); ; Sandy clay loam (Heavy); Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	1.2 - 1.35 m	Red (10R4/6-Moist); ; Sandy clay loam (Heavy); Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	1.35 - 1.5 m	Red (10R4/6-Moist); ; Sandy medium clay (Light); Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	1.5 - 1.65 m	Red (10R4/6-Moist); ; Sandy medium clay (Light); Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	1.65 - 1.8 m	Red (10R4/6-Moist); ; Sandy medium clay; Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules;
B21	1.8 - 1.95 m	Red (10R4/6-Moist); ; Sandy medium clay; Massive grade of structure; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Tubules; Gradual change to -
B22	1.95 - 2.1 m	Red (10R4/8-Moist); ; Sandy medium clay; Massive grade of structure; Dry; Strong consistence; 0-2%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments;
B22	2.1 - 2.4 m	Red (10R4/8-Moist); ; Sandy medium clay; Massive grade of structure; Dry; Strong consistence; 0-2%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments;
B22	2.4 - 2.5 m	Red (10R4/8-Moist); ; Sandy medium clay; Massive grade of structure; Dry; Strong consistence; 0-2%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments; Diffuse change to -
B3	2.5 - 2.7 m	Red (10R4/8-Moist); ; Sandy medium clay (Light); Massive grade of structure; Dry; Strong consistence;
B3	2.7 - 2.9 m	Red (10R4/8-Moist); ; Sandy medium clay (Light); Massive grade of structure; Dry; Strong consistence; Diffuse change to -
C	2.9 - 3 m	Red (2.5YR4/8-Moist); ; Sandy medium clay (Light); Massive grade of structure; Dry; Strong consistence; 10-20%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments;
C	3 - 3.3 m	Red (2.5YR4/8-Moist); ; Sandy medium clay (Light); Massive grade of structure; Dry; Strong consistence; 10-20%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments;
C	3.3 - 3.6 m	Red (2.5YR4/8-Moist); ; Sandy clay loam; Massive grade of structure; Dry; Strong consistence; 10-20%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments;

#### **Morphological Notes**

#### **Observation Notes**

#### **Site Notes**

TORRENS CK.

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Ca	Exchangeable Mg	Cations K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.1	6.9A	0.018A	0.83H	0.12	0.18	0.02	0.3F	1.2A	1.5F	1.67
0.1 - 0.16	6.5A	0.013A								
0.16 - 0.2	6.7A	0.018A								
0.2 - 0.25	6.7A	0.015A								
0.25 - 0.3	6.7A	0.017A	0.82H	0.24	0.07	0.02	0.23F	1.6A	1.4F	1.25
0.3 - 0.34	6.7A	0.016A								
0.34 - 0.45	6.9A	0.018A								
0.45 - 0.6	6.8A	0.016A								
0.6 - 0.67	6.5A	0.016A								
0.67 - 0.75	6.5A	0.018A								
0.75 - 0.9	6.4A	0.018A	1.47H	0.61	0.15	0.02	0.23F	2.73A	2.5F	0.73
0.9 - 1.05	6.3A	0.016A								
1.05 - 1.2	6.5A	0.015A	1.49H	0.74	0.17	0.02	0.24F	3.05A	2.7F	0.66
1.2 - 1.35	6.5A	0.015A								
1.35 - 1.5	6.4A	0.017A								
1.5 - 1.65	6.4A	0.031A								
1.65 - 1.8	6.5A	0.16A								
1.8 - 1.95	6.5A	0.014A	1.39H	0.87	0.08	0.02	0.13F	2.88A	2.5F	0.69
1.95 - 2.1	6.4A	0.02A								
2.1 - 2.4	6.4A	0.16A								
2.4 - 2.5		0.16A								
2.5 - 2.7		0.16A								
2.7 - 2.9	6.3A	0.16A								
2.9 - 3	6.5A	0.16A								
3 - 3.3		0.16A								
3.3 - 3.6	6.7A	0.16A								

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.1		0.27D	4B	0.008A	0.015A	0.06A		0	55A	32	6	7
0.1 - 0.16		0.18D	6B		0.015A			0	52A	34	6	8
0.16 - 0.2								0	49A	37	5	9
0.2 - 0.25								0	50A	35	6	9
0.25 - 0.3			3B	0.005A	0.018A	0.08A		0	51A	34	5	9
0.3 - 0.34								0	50A	34	6	10
0.34 - 0.45								0	50A	32	6	12
0.45 - 0.6								0	50A	31	5	14
0.6 - 0.67								0	45A	32	5	17
0.67 - 0.75								0	44A	31	6	20
0.75 - 0.9				0.011A		0.13A		0	41A	28	5	26
0.9 - 1.05								0	39A	27	4	30
1.05 - 1.2								0	37A	27	4	32
1.2 - 1.35								0	40A	25	6	29
1.35 - 1.5								0	40A	25	5	30
1.5 - 1.65								1	37A	27	6	30
1.65 - 1.8								0	38A	26	5	31
1.8 - 1.95								1	39A	25	5	31
1.95 - 2.1								1	37A	25	6	33
2.1 - 2.4								1	37A	26	7	31

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2.4 - 2.5	2	37A	28	7	28	
2.5 - 2.7	1	39A	27	8	27	
2.7 - 2.9	1	42A	25	7	26	
2.9 - 3	1	39A	27	7	27	
3 - 3.3	1	41A	27	7	25	
3.3 - 3.6	11	51A	25	5	19	

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**Laboratory Analyses Completed for this profile**

10A1	Total sulfur - X-ray fluorescence
13C1_FE	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
15A2_CEC	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15E1_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) by compulsive exchange, no pretreatment for soluble
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
15G_C	Exchange acidity (hydrogen and aluminium) - meq per 100g of soil - By 1M KCl exch. acidity by titration to pH 8.4
15J1	Effective CEC
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 H <sub>2</sub> SO <sub>4</sub> (BSES)
MIN_EC	Exchange Capacity - Mineralogy
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_Gt	Goethite - X-Ray Diffraction
XRD_C_Hm	Hematite - X-Ray Diffraction
XRD_C_Il	Illite - X-Ray Diffraction
XRD_C_K2O	K <sub>2</sub> O - X-Ray Diffraction or Clay Fraction (air dry)
XRD_C_Ka	Kaolin - X-Ray Diffraction
XRD_C_Qz	Quartz - X-Ray Diffraction