Project Name: Warren Reservoir Catchment Survey

Project Code: WRN Site ID: 401 Observation ID: 1

Agency Name: CSIRO Division of Soils (SA)

Site Information

Desc. By: I. Hollingsworth Locality:

 Date Desc.:
 31/12/91
 Elevation:
 437 metres

 Map Ref.:
 1:10000
 Rainfall:
 No Data

 Northing/Long.:
 6155440 AMG zone: 54
 Runoff:
 Slow

Easting/Lat.: 319865 Datum: AGD66 Drainage: Imperfectly drained

<u>Geology</u>

ExposureType: Soil pit Conf. Sub. is Parent. Mat.: No Data

Geol. Ref.: No Data Substrate Material: Soil pit, 0.9 m deep, Slightly porous,

Land Form

Rel/Slope Class: Undulating low hills 30-90m 3- Pattern Type: Alluvial fan

10%

Morph. Type: Crest Relief: 5 metres

Elem. Type: Hillslope Slope Category: Very gently sloped Slope: 3 % Aspect: 300 degrees

Surface Soil Condition (dry): Soft

Erosion: Minor (sheet) **Soil Classification**

Australian Soil Classification:Mapping Unit:N/AChromosolPrincipal Profile Form:Dy5.21ASC Confidence:Great Soil Group:Soloth

Confidence level not specified

Site Disturbance: Extensive clearing, for example poisoning, ringbarking

Vegetation: Low Strata - Sod grass, 0.26-0.5m, Closed or dense. *Species includes - Danthonia species, Hordeum

marineum

Tall Strata - Tree, 20.01-35m, Isolated plants. *Species includes - Eucalyptus camaldulensis

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11 0 - 0.05 m Dark brown (7.5YR3/2-Moist); Brown (7.5YR4/2-Dry); , 0-0%; Loamy sand; Strong grade of structure, 2-5 mm, Granular; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Weak consistence; Non-plastic; Non-sticky; Field pH 6 (Raupach);

Abundant, very fine (0-1mm) roots; Clear, Smooth change to -

A12 0.05 - 0.1 m Dark yellowish brown (10YR4/4-Moist); Brown (7.5YR5/2-Dry); , 0-0%; Loamy sand; Massive

grade of structure; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Weak consistence; Non-plastic; Non-sticky; Field pH 6 (Raupach); Common,

very fine (0-1mm) roots; Clear, Smooth change to -

A2 0.1 - 0.3 m Strong brown (7.5YR5/6-Moist); Light brown (7.5YR6/4-Dry); , 7.5YR58, 0-2% , 0-5mm, Faint;

Loamy sand; Massive grade of structure; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Weak consistence; Non-plastic; Non-sticky; 2-10%, medium gravelly, 6-20mm, angular, stratifiedstrong, Quartz, coarse fragments; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Nodules; Field pH 5 (Raupach); Common, very fine (0-

1mm) roots; Sharp, Smooth change to -

Bt 0.3 - 0.35 m Strong brown (7.5YR5/8-Dry); , 2.5YR36, 20-50% , 5-15mm, Distinct; , 10YR43; Heavy clay; Moderate grade of structure, 20-50 mm, Columnar; Fine, (0 - 5) mm crack; Common (1-5 per

100mm2) Very fine (0.075-1mm) macropores, Dry; Strong consistence; Very plastic; Normal plasticity; Moderately sticky; Field pH 6 (Raupach); Few, very fine (0-1mm) roots; Abrupt, Wavy

change to -

Bt 0.35 - 0.5 m , 2.5YR36, 20-50% , 5-15mm, Distinct; , 7.5YR58; Medium clay; Weak grade of structure, 20-50

mm, Subangular blocky; Strong grade of structure, 2-5 mm, Polyhedral; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Strong consistence; Very plastic; Normal plasticity; Moderately sticky; Common cutans, 10-50% of ped faces or walls coated, prominent; Field pH 4.5 (Raupach); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -

Btg 0.5 - 0.8 m , 2.5YR36, 0-0%; , 5Y71; Medium clay; Massive grade of structure; Fine, (0 - 5) mm crack; Few

(<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very plastic; Normal plasticity; Moderately sticky; Many cutans, >50% of ped faces or walls coated, prominent; Many cutans, >50% of ped faces or walls coated, prominent; Field pH 4

(Raupach); Few, very fine (0-1mm) roots; Clear, Smooth change to -

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Btg 0.8 - 0.95 m

 $\label{light-grey} \mbox{Light grey (5Y7/1-Moist); , 2.5YR36, 20-50\% , 5-15mm, Distinct; , 7.5YR58; Heavy clay; Massive grade of structure; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) \\$ macropores, Moderately moist; Strong consistence; Very plastic; Normal plasticity; Moderately sticky; Many cutans, >50% of ped faces or walls coated, prominent; Many cutans, >50% of ped faces or walls coated, prominent; Field pH 4 (Raupach); Sharp, Wavy change to -

0.95 - m Bqm

, 0-0%; Massive grade of structure; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Rigid consistence; Non-plastic; Non-sticky; Many cutans, >50% of ped faces or walls coated, prominent; Many cutans, >50% of ped faces or walls coated, prominent; Duripan, Very strongly cemented, Continuous, Massive; Field pH 4

(Raupach);

Morphological Notes Observation Notes Site Notes

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<u>Laboratory Test Results:</u>												
Depth	pН	1:5 EC		hangeable Cations Mg K		E Na	changeable Acidity	CEC		ECEC		ESP
m		dS/m				Cmol (+)/						%
0 - 0.05	5.5C 5.8A	0.2A	6.2D	1.63	0.96	0.22		10.2k	(9D		2.16
0.05 - 0.1	4.2C 4.8A	0.06A	1.8D	0.37	0.3	0.03		5K		2.5D		0.60
0.1 - 0.3	4.2C 4.8A	0.04A	0.61D	0.18	0.15	0.07		1.8K		1D		3.89
0.3 - 0.35	4.4C 5A	0.05A	4.69D	6.47	0.46	0.48	0.76A	17K		12.1D		2.82
0.35 - 0.5	4.4C 4.9A	0.06A	4.26D	8.45	0.34	0.59	1.15A	16K		13.6D		3.69
0.5 - 0.8	4C 4.7A	0.06A	1.83D	6.34	0.25	0.71	3.1A	14.2k	(9.1D		5.00
0.8 - 0.95	3.9C 4.7A	0.06A	1.61D	8.43	0.27	1.07	4.56A	17.6k	(11.4D		6.08
Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Pa GV	rticle CS	Size FS	Analysi Silt	is Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.05 0.05 - 0.1 0.1 - 0.3 0.3 - 0.35 0.35 - 0.5 0.5 - 0.8 0.8 - 0.95		3.66C 1.68C 0.35C 0.83C 0.51C 0.21C 0.23C							35B 33B 40B 12B 9B 19B 18B	54 55 52 18 13 22 22	5 5 2 2 3 3	6 6 5 65 73 53 52
0.0 0.00		0.200							100		•	02
Depth	COLE	0-4	Gravimetric/Volumetric Wa				ater Contents 1 Bar 5 Bar 15 Bar		K sat		K unsa	at
m		Sat.	0.05 Bar	0.1 Bar 0.5 Bar g/g - m3/m3				Däl	mm/h		mm/h	
0 - 0.05 0.05 - 0.1												

0.05 - 0.1 0.1 - 0.3 0.3 - 0.35 0.35 - 0.5 0.5 - 0.8

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Laboratory Analyses Completed for this profile

15B2_CA Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, pretreatment for

soluble salts

15B2_K
15B2_MG
Exchangeable bases and CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
Exchangeable bases and CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
Exchangeable bases and CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts

15G1 Exchange acidity (hydrogen and aluminium) by 1M potassium chloride

15l3 CEC measurement - automated determination of ammonium and chloride ions

15J_BASES Sum of Bases

3A1 EC of 1:5 soil/water extract 4A1 pH of 1:5 soil/water suspension

4B2 pH of 1:5 soil/0.01M calcium chloride extract - following Method 4A1

5A2 Chloride - 1:5 soil/water extract, automated colour

6B3 Total organic carbon - high frequency induction furnace, infrared

P10A1_C
P10A1_CS
P10A1_FS
P10A1_FS
P10A1_Z
Clay (%) - Pipette
Coarse sand (%) - Pipette
Fine sand (%) - Pipette
Silt (%) - Pipette