

Project Name: SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania
Project Code: SCEAM **Site ID:** N14 **Observation ID:** 1
Agency Name: TAS Department of Primary Industries and Fisheries

Site Information

Desc. By: R. Moreton **Locality:** Property Name, Benham. Owned by Rob O'Connor. Near

Date Desc.: 20/09/05 **Elevation:** 220 metres
Map Ref.: GPS S.A. Off **Rainfall:** 560
Northing/Long.: 5370803 AMG zone: 55 **Runoff:** Moderately rapid
Easting/Lat.: 558147 Datum: GDA94 **Drainage:** Moderately well drained

Geology

ExposureType: Soil pit **Conf. Sub. is Parent. Mat.:** Probable
Geol. Ref.: Jd **Substrate Material:** Soil pit, 0.85 m deep,, Dolerite

Landform

Rel/Slope Class: Gently undulating plains <9m 1-3% **Pattern Type:** Low hills

Morph. Type: Lower-slope **Relief:** No Data
Elem. Type: Valley flat **Slope Category:** Very gently sloped
Slope: 2 % **Aspect:** 300 degrees

Surface Soil Condition Firm

Erosion

Soil Classification

Australian Soil Classification: Haplic Eutrophic Red Chromosol Medium Non-gravelly Loamy Clayey Moderately deep
Mapping Unit: N/A
Principal Profile Form: N/A
ASC Confidence: All necessary analytical data are available.
Great Soil Group: N/A

Site Disturbance

Vegetation

Surface Coarse Fragments 0-2%, cobbly, 60-200mm, ,

Profile Morphology

Ap	0 - 0.18 m	Dark brown (7.5YR3/2-Moist); , 0-0% ; Loam; Rough-ped fabric; Few (<1 per 100mm2)
Fine (1-2mm)		macropores, Moderately moist; Very weak consistence; Non-plastic; Slightly sticky; 0-2%,
medium		gravelly, 6-20mm, subrounded, dispersed, Dolerite, coarse fragments; Common, very fine
(0-1mm) roots;		Abrupt, Smooth change to -
A2f	0.18 - 0.21 m	Brown (10YR4/3-Moist); Biological mixing, 7.5YR32, 0-2% , 15-30mm, Distinct; Clay
loam; Sandy		(grains prominent) fabric; Few (<1 per 100mm2) Medium (2-5mm) macropores,
Moderately moist; Very		weak consistence; Non-plastic; Moderately sticky; Few, very fine (0-1mm) roots; Abrupt,
Smooth change		to -
B2t	0.21 - 0.4 m	Dark reddish brown (5YR3/4-Moist); Biological mixing, 7.5YR32, 0-2% , 0-5mm, Distinct;
Medium clay		(Light); Smooth-ped fabric; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately
moist; Weak		consistence; Moderately plastic; Normal plasticity; Very sticky; 2-10%, coarse gravelly,
20-60mm,		subangular, dispersed, Dolerite, coarse fragments; Few (2 - 10 %), Ferruginous, Medium
(2 - 6 mm),		Nodules; Few, very fine (0-1mm) roots; Clear, Irregular change to -
B3g	0.4 - 0.65 m	Brown (10YR4/3-Moist); Mottles, 5YR34, 2-10% , 15-30mm, Distinct; Medium clay;
Smooth-ped fabric;		Few (<1 per 100mm2) Coarse (>5mm) macropores, Moderately moist; Weak
consistence; Very plastic;		Normal plasticity; Very sticky; 10-20%, cobbly, 60-200mm, subangular, stratified, Dolerite,
coarse		fragments; Few (2 - 10 %), Ferruginous, Medium (2 - 6 mm), Nodules; Clear, Irregular

change to -

BCr 0.65 - 0.8 m Greyish brown (2.5Y5/3-Moist); Mottles, 7.5YR56, 2-10% , 0-5mm, Distinct; Mottles, 10YR42, 0-2% , 5-15mm, Faint; Loam; Earthy fabric; Few (<1 per 100mm²) Coarse (>5mm) macropores, Moderately moist; Weak consistence; Non-plastic; Very sticky; 2-10%, coarse gravelly, 20-60mm, subrounded, dispersed, Dolerite, coarse fragments;

Morphological Notes

Ap Penetration resistance: Firm
 A2f Penetration resistance: Firm. Old root materials
 B2t Penetration resistance: Firm. Old root materials. Soil sampled 21-40cm labelled N14C
 B3g Penetration resistance: Firm. Soil sampled 40-65cm labelled N14D
 BCr Gritty Loam. Penetration resistance: Firm. Weathered Dolerite in BCr (mealy). Soil sampled 65-80cm labelled N14E

Observation Notes

Soil Class: Eastfield. Vegetation: Improved Pasture. Substrate properties: sand size grain size, crystalline texture, massive structure, composed of dark minerals.

Site Notes

Mode of Geomorphic Activity: Eroded or aggraded. Geomorphic agent: Sheet Wash. Inunadion Frequency: None. Pit located at transect start

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Laboratory Test Results:

Depth m	pH	1:5 EC dS/m	Ca	Exchangeable Mg	Cations K	Na Cmol (+)/kg	Exchangeable Acidity	CEC	ECEC	ESP %
0 - 0.075	5.8C 6.2A	0.203A	10.14A	1.2	0.5	0.08	0.13D 0G		12.06B	
0.15 - 0.225	5.3C 6.1A	0.058A	3.25A	0.85	0.31	0.06	0.14A 0.21D 0.01G 0.22A		4.69B	
0.21 - 0.4	7.4C 8.1A	0.086A	26.16A	8.22	1.32	0.25	0.005775D 0G 0.015775A		35.96577B	
0.4 - 0.65	7.3C 7.8A	0.118A	24.59A	8.89	1.2	0.38	0.018475D 0G 0.028475A		35.08847B	
0.65 - 0.8	7.4C 7.7A	0.144A	25.99A	8.9	1.18	0.52	0.01D 0G 0.02A		36.61B	

Depth m	CaCO3 %	Organic C Clay %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle GV CS	Size FS	Analysis Silt
0 - 0.075		2.72B	75H 42.7I		0.19D					
0.15 - 0.225		0.6B	8H 7.2I		0.03D					
0.21 - 0.4		0.96B	2H 1I		0.11D					

0.4 - 0.65	0.65B	2H	0.05D
0.65 - 0.8	0.75B	0.8I 3H 1.5I	0.06D

Laboratory Analyses Completed for this profile

10B_NR	Extractable sulfur (mg/kg) - Not recorded
12_NR_FE	Total element - Fe(%) - Not recorded
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
12C1	Calcium chloride extractable boron - manual colour
15_NR_AL	Aluminium Cation - meq per 100g of soil - Not recorded
15_NR_H	Hydrogen Cation - meq per 100g of soil - Not recorded
15A1_CA for soluble	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
	salts
15A1_K for soluble	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
	salts
15A1_MG for soluble	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
	salts
15A1_NA for soluble	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
	salts

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15G_C_AL2	Exchangeable aluminium - meq per 100g of soil - Aluminium By KCl extraction and detremination
By AAS	
15G1	Exchange acidity (hydrogen and aluminium) by 1M potassium chloride
15J_H	Sum of Ex. cations + Ex. acidity - Sum of basic exch. cations and exch. (Hydrogen)
15N1	Exchangeable sodium percentage (ESP)
18A1	Bicarbonate-extractable potassium
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
6B2	Total organic carbon - high frequency induction furnace, volumetric
7A5	Total nitrogen - high frequency induction furnace, thermal conductivity
7C1a	Ammonium-N, in presence or absence of nitrite
7C1b	(Nitrate+nitrite)-N, in presence of nitrite
9B2_COL	Bicarbonate-extractable phosphorus - automated colour. Based on Colwell (1965). Method no
longer	
	recommended
9C2	Olsen-extractable phosphorus - automated colour