

**Project Name:** SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania  
**Project Code:** SCEAM **Site ID:** S29 **Observation ID:** 1  
**Agency Name:** TAS Department of Primary Industries and Fisheries

#### Site Information

<b>Desc. By:</b>	R. Moreton	<b>Locality:</b>	Michael Dunbabin, " Milton", near Swansea
<b>Date Desc.:</b>	29/03/06	<b>Elevation:</b>	26 metres
<b>Map Ref.:</b>	GPS S.A. Off	<b>Rainfall:</b>	615
<b>Northing/Long.:</b>	5347607 AMG zone: 55	<b>Runoff:</b>	Slow
<b>Easting/Lat.:</b>	586818 Datum: GDA94	<b>Drainage:</b>	Well drained

#### Geology

<b>Exposure Type:</b>	Soil pit	<b>Conf. Sub. is Parent. Mat.:</b>	Probable
<b>Geol. Ref.:</b>	Qh	<b>Substrate Material:</b>	Soil pit, Alluvium

#### Landform

<b>Rel/Slope Class:</b>	Level plain <9m <1%	<b>Pattern Type:</b>	Alluvial fan
<b>Morph. Type:</b>	Flat	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	Channel bench	<b>Slope Category:</b>	Level
<b>Slope:</b>	1 %	<b>Aspect:</b>	220 degrees

**Surface Soil Condition** Firm

#### Erosion

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b>	N/A
Manganic Eutrophic Brown Kandosol Medium Non-gravelly Clay-loamy Clayey Deep	<b>Principal Profile Form:</b>	N/A
<b>ASC Confidence:</b>	<b>Great Soil Group:</b>	N/A
All necessary analytical data are available.		

#### Site Disturbance

#### Vegetation

**Surface Coarse Fragments** 10-20%, cobbly, 60-200mm, ,

#### Profile Morphology

A11	0 - 0.12 m	Dark brown (7.5YR3/3-Moist); Dark yellowish brown (10YR4/4-Dry); , 0-0% ; Clay loam; Strong grade of structure, 2-5 mm, Subangular blocky; Moderate grade of structure, <2 mm, Polyhedral; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Weak consistence; Non-plastic; Slightly sticky; 0-2%, coarse gravelly, 20-60mm, subrounded, dispersed, Basalt, coarse fragments; Many, very fine (0-1mm) roots; Clear, Smooth change to -
A12	0.12 - 0.2 m	Strong brown (7.5YR4/6-Moist); , 0-0% ; Clay loam; Weak grade of structure, 5-10 mm, Angular blocky; Weak grade of structure, <2 mm, Polyhedral; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Dry; Weak consistence; Non-plastic; Slightly sticky; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Common, very fine (0-1mm) roots; Gradual, Smooth change to -
B1t	0.2 - 0.44 m	Strong brown (7.5YR4/6-Moist); Mottles, 5YR46, 2-10% , 0-5mm, Distinct; Clay loam; Massive grade of structure; Earthy fabric; Few (<1 per 100mm2) Fine (1-2mm) macropores, Dry; Firm consistence; Slightly plastic; Normal plasticity; Moderately sticky; Common (10 - 20 %), Manganiferous, Medium (2 - 6 mm), Nodules; Few, very fine (0-1mm) roots; Clear, Smooth change to -
B2t	0.44 - 1 m	Dark brown (10YR3/3-Moist); Mottles, 7.5YR56, 2-10% , 0-5mm, Distinct; Light clay; Massive grade of structure; Earthy fabric; Moderately moist; Strong consistence; Moderately plastic; Normal plasticity; Very sticky; Many (20 - 50 %), Manganiferous, Medium (2 - 6 mm), Nodules;

#### Morphological Notes

A11 Penetration resistance: Firm  
A12 Penetration resistance: Firm. Soil sampled S29A2 from depths 12-20 cm  
B1t Penetration resistance: Stiff. Soil sampled S29C from depths 20-44 cm  
B2t Penetration resistance: Very Stiff. Soil sampled S29D from depths 44-75 cm. Soil sampled  
S29E from depths 75-100 cm

### **Observation Notes**

Vegetation was pasture. Substrate not reached.

### **Site Notes**

Mode of Geomorphic Activity: Aggraded, Geomorphic Agent: Sheet Wash. Inundation frequency: once in 10-50yrs for 1-20 days at a depth of 100-300mm.

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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	5.2C 5.9A	0.131A	9.68A	2.75	0.55	0.37	0.09D 0.01G 0.12A		13.47B	
0.1 - 0.2	5.3C 6.3A	0.119A	9.79A	5.17	0.14	0.55	0.05D 0.01G 0.1A		15.75B	
0.2 - 0.275	5.2C 5.7A	0.334A	9.14A	2.37	0.81	0.44	0.3D 0.01G 0.31A		13.07B	
0.2 - 0.44	5.6C 6.7A	0.083A	5.26A	8.05	0.07	1.33	0.01D 0G 0.01A		14.72B	
0.44 - 0.75	6.1C 7.3A	0.106A	5.7A	14.31	0.14	3.26	0.01D 0G 0.02A		23.43B	
0.75 - 1	7.4C 8.8A	0.155A	6.09A	17.88	0.19	5.4	0.01D 0G 0.02A		29.58B	

Depth m	CaCO3 %	Organic C Clay %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle GV CS FS Silt
0 - 0.075		1.99B	100H 35.4I		0.19D			
0.1 - 0.2		1.95B	55H 21.9I		0.21D			
0.2 - 0.275		2.17B	260H 85.6I		0.19D			
0.2 - 0.44		0.77B	3H 0.8I		0.03D			
0.44 - 0.75		0.76B	2H 0.6I		0.1D			
0.75 - 1		0.28B	2H 0.9I		0.05D			

### **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	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, no pretreatment
for soluble	salts
15A1_K	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, no pretreatment
for soluble	salts
15A1_MG	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, no pretreatment
for soluble	salts

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15A1_NA for soluble	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, no pretreatment salts
15G_C_AL2 By AAS	Exchangeable aluminium - meq per 100g of soil - Aluminium By KCl extraction and detremination
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 longer	Bicarbonate-extractable phosphorus - automated colour. Based on Colwell (1965). Method no
	recommended
9C2	Olsen-extractable phosphorus - automated colour