

**Project Name:** SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania  
**Project Code:** SCEAM **Site ID:** N21 **Observation ID:** 1  
**Agency Name:** TAS Department of Primary Industries and Fisheries

**Site Information**

**Desc. By:** R. Moreton **Locality:** Property Tarnpirr, Owned by Hugh Morris, near Cressy.

**Date Desc.:** 01/08/05 **Elevation:** 149 metres  
**Map Ref.:** GPS S.A. Off **Rainfall:** 649  
**Northing/Long.:** 5390656 AMG zone: 55 **Runoff:** Moderately rapid  
**Easting/Lat.:** 507085 Datum: GDA94 **Drainage:** Imperfectly drained

**Geology**

**ExposureType:** Soil pit **Conf. Sub. is Parent. Mat.:** No Data  
**Geol. Ref.:** Ts **Substrate Material:** Alluvium

**Landform**

**Rel/Slope Class:** Undulating rises 9-30m 3-10% **Pattern Type:** Low hills  
**Morph. Type:** Upper-slope **Relief:** No Data  
**Elem. Type:** Hillslope **Slope Category:** Very gently sloped  
**Slope:** 3 % **Aspect:** 340 degrees

**Surface Soil Condition** Loose

**Erosion**

**Soil Classification**

**Australian Soil Classification:** Manganic Eutrophic Brown Dermosol Medium Non-gravelly Loamy Clayey 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%, coarse gravelly, 20-60mm, ,

**Profile Morphology**

Ap	0 - 0.24 m	Dark brown (7.5YR3/2-Moist); , 0-0% ; Loam; Moderate grade of structure, 5-10 mm, Angular blocky;
		Moderate grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Few (<1 per 100mm2) Fine (1-2mm) macropores, Loose consistence; Non-plastic; Slightly sticky; 0-2%, medium subangular, dispersed, coarse fragments; Common (10 - 20 %), Manganiferous, Medium Nodules; Field pH 7.4 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Wavy change to -
B1c	0.24 - 0.4 m	Brown (7.5YR4/4-Moist); Mottles, 5YR34, 10-20% , 0-5mm, Distinct; Clay loam (Light); structure, 5-10 mm, Subangular blocky; Weak grade of structure, 2-5 mm, Subangular blocky; Earthy fabric; Few (<1 per 100mm2) Fine (1-2mm) macropores, Very weak consistence; Slightly plastic; Normal plasticity; Very sticky; 0-2%, coarse gravelly, 20-60mm, angular, dispersed, coarse fragments; Many (20 - 50 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 7.4 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B21c	0.4 - 0.63 m	Brown (7.5YR4/4-Moist); Mottles, 5YR34, 10-20% , 0-5mm, Distinct; Clay loam (Light); structure, 10-20 mm, Subangular blocky; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Few (<1 per 100mm2) Fine (1-2mm) macropores, Very weak consistence; Slightly plastic; Normal plasticity; Very sticky; 2-10%, cobbly, 60-200mm, angular, dispersed, coarse fragments; Many (20 - 50 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 7.4 (pH meter); Sharp, Smooth change to -

B22 0.63 - 1.2 m Dark yellowish brown (10YR4/6-Moist); Mottles, 2.5YR44, 20-50% , 15-30mm, Prominent; Medium clay (Light); Massive grade of structure; Weak grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Weak consistence; Very plastic; Normal plasticity; Very sticky; 0-2%, coarse gravelly, 20-60mm, subrounded, dispersed, coarse fragments; Many cutans, >50% of ped faces or walls coated, prominent; Field pH 7.8 (pH meter);

### Morphological Notes

Ap Gritty Loam. Penetration Resistance: Soft. Newly cultivated, clods with grass roots incorporated into Ap.  
B1c Light Gritty Clay Loam. Penetration Resistance: Very Stiff  
B21c Light Gritty Clay Loam. Penetration Resistance: Very Stiff. Soil sampled 40-63cm labelled N21C  
B22 Penetration Resistance: Very Stiff. Soils sampled 65-95 labelled N21D

### Observation Notes

Substrate not reached but likely to be tertiary sediments (mudstone and lateritic gravels). Recently fertilised in preparation for onions to be sown next day.

### Site Notes

Soil Class: Cressy Shaley Loam. Vegetation: Cultivated on morning of description. Inundation frequency: non inundation. Geomorphic Activity was eroded by over-bank stream wash.

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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	5.6C 6.3A	0.095A	8.55A	1.5	0.41	0.12	0.03D 0G 0.05A		10.63B	
0 - 0.24	6.1C 6.6A	0.172A	10.25A	2.14	0.54	0.15	0.01237D 0G 0.02055A		13.10055B	
0.2 - 0.275	5.6C 6.3A	0.114A	8.5A	1.68	0.3	0.16	0.02D 0G 0.05A		10.69B	
0.24 - 0.4	5.9C 6.4A	0.042A	3.09A	2.99	0.11	0.21	0D 0G 0.01A		6.41B	
0.4 - 0.63	6C 6.7A	0.064A	3.59A	4.19	0.11	0.29	0.01D 0G 0.02A		8.2B	
0.63 - 1.2	6C 6.5A	0.049A	6.02A	8.69	0.14	0.54	0.01D 0G 0.044425A		15.43443B	

Depth m	CaCO3 %	Organic C Clay %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle GV	Size CS	Analysis FS	Silt
0 - 0.075		1.96B	57H 18.3I		0.16D						
0 - 0.24		2.13B	72H 24.9I		0.17D						

0.2 - 0.275	1.59B	36H 10I	0.15D
0.24 - 0.4	0.35B	6H 2.4I	0.05D
0.4 - 0.63	0.41B	8H 2.9I	0.05D
0.63 - 1.2	0.33B	3H 1.5I	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 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
15A1_K 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

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15A1_MG 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
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