

Project Name: SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania
Project Code: SCEAM **Site ID:** N18 **Observation ID:** 1
Agency Name: TAS Department of Primary Industries and Fisheries

Site Information

Desc. By: R. Moreton **Locality:** Nearest town, Fingal. Soil Pit 1 metre north of Transect

Date Desc.: 26/09/05 **Elevation:** start point.
Map Ref.: GPS S.A. Off **Rainfall:** 235 metres
Northing/Long.: 5394053 AMG zone: 55 **Runoff:** 700
Easting/Lat.: 581837 Datum: GDA94 **Drainage:** Slow
 Poorly drained

Geology

Exposure Type: Soil pit **Conf. Sub. is Parent. Mat.:** No Data
Geol. Ref.: Qa **Substrate Material:** Soil pit, Alluvium

Landform

Rel/Slope Class: Gently undulating plains <9m 1-3% **Pattern Type:** Terrace (alluvial)

Morph. Type: Flat **Relief:** No Data
Elem. Type: Terrace flat **Slope Category:** Level
Slope: 1 % **Aspect:** 160 degrees

Surface Soil Condition Soft

Erosion

Soil Classification

Australian Soil Classification: Mapping Unit: N/A
 Ferric-Sodic Eutrophic Grey Dermosol Medium Non-gravelly Clay-loamy Clayey Deep **Principal Profile Form:** N/A
ASC Confidence: Great Soil Group: N/A
 All necessary analytical data are available.

Site Disturbance

Vegetation

Surface Coarse Fragments No surface coarse fragments

Profile Morphology

1Ap 0 - 0.18 m Distinct; Clay 5 mm, Moderately sticky;	Very dark greyish brown (10YR3/2-Moist); Biological mixing, 10YR42, 2-10% , 5-15mm, loam; Moderate grade of structure, 10-20 mm, Polyhedral; Moderate grade of structure, 2-Polyhedral; Earthy fabric; Moist; Weak consistence; Slightly plastic; Normal plasticity; Common, very fine (0-1mm) roots; Clear, Irregular change to -
1B1t 0.18 - 0.4 m Mottles, 7.5YR44, Subangular blocky; mm crack; plastic; change to -	Dark greyish brown (10YR4/2-Moist); Mottles, 10YR44, 10-20% , 5-15mm, Distinct; 0-2% , 0-5mm, Prominent; Light clay; Moderate grade of structure, 50-100 mm, Moderate grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moist; Weak consistence; Slightly Normal plasticity; Moderately sticky; Few, very fine (0-1mm) roots; Abrupt, Smooth
1B2t 0.4 - 0.5 m Light medium mm crack; Moderately plastic; distinct; Many (20 - change to -	Dark greyish brown (10YR4/2-Moist); Mottles, 10YR56, 10-20% , 5-15mm, Prominent; clay; Weak grade of structure, 10-20 mm, Angular blocky; Earthy fabric; Medium, (5 - 10) Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moist; Weak consistence; Normal plasticity; Very sticky; Common cutans, 10-50% of ped faces or walls coated, 50 %), Ferromanganiferous, Medium (2 -6 mm), Soft segregations; Abrupt, Smooth
2A1t 0.5 - 0.7 m 10YR53, 2-10%	Very dark grey (10YR3/1-Moist); Mottles, 10YR44, 10-20% , 5-15mm, Distinct; Mottles,

blocky; Earthy
macropores, Moist; Weak
to -

, 0-5mm, Distinct; Light medium clay; Moderate grade of structure, 10-20 mm, Angular fabric; Medium, (5 - 10) mm crack; Common (1-5 per 100mm²) Fine (1-2mm) consistence; Moderately plastic; Normal plasticity; Very sticky; Gradual, Tongued change

2B1b 0.7 - 0.95 m Dark yellowish brown (10YR4/4-Moist); Mottles, 10YR56, 2-10% , 0-5mm, Distinct;
Mottles, 10YR53, 2-
Angular blocky;
sticky; Common

10% , 0-5mm, Distinct; Fine sandy clay loam; Weak grade of structure, 20-50 mm, Smooth-ped fabric; Moist; Weak consistence; Slightly plastic; Normal plasticity; Very cutans, 10-50% of ped faces or walls coated, prominent; Gradual, Smooth change to -

2B2b 0.95 - 1.04 m (10YR4/4-Moist); Mottles, 10YR56, 2-10% , 0-5mm, Distinct; Sandy light clay; Massive
grade of
Moderately

structure; Smooth-ped fabric; Moist; Weak consistence; Slightly plastic; Normal plasticity; sticky;

Morphological Notes

1B2t Cutans of organic - humus nature. Sampled from .40 to .50m, Label N18C.
2A1t Sampled from .50 to .65m, Label N18D.
2B1b Colour of Clay skins, Hue 10YR Value 3 Chroma 1. Sampled from .75 to .90m, Label N18E.

Observation Notes

Young wheat crop ~60cm in height. Urea applied aerially 3 days prior. Substrate not reached, however, a suspected buried profile of alluvial sediments was found. Most likely river sands and clays.

Site Notes

Property owner, Ian Herbert. Property name, Malahide.

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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				Na	Cmol (+)/kg			%
0 - 0.075	5.1C 5.7A	0.171A	9.6A	2.28	0.47	0.23	0.28D 0.02G 0.34A		12.92B	
0.2 - 0.275	4.5C 5.3A	0.119A	5.54A	2.09	0.3	0.23	0.3D 0.18G 0.84A		9B	
0.4 - 0.5	5.4C 6.9A	0.046A	3.57A	6.44	0.16	1.25	0.04D 0.03G 0.06A		11.48B	
0.5 - 0.65	6.3C 7.6A	0.065A	5.22A	9.36	0.22	2.16	0.01D 0G 0.02A		16.98B	
0.75 - 0.9	6.7C 7.9A	0.103A	3.92A	6.37	0.13	2.25	0.01D 0G 0.02A		12.69B	

Depth	CaCO ₃	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis
m	%	Clay %	mg/kg	%	%	%	Mg/m ³	GV CS FS Silt %
0 - 0.075		3.62B	110H 36.7I		0.29D			
0.2 - 0.275		2.11B	39H		0.18D			

0.4 - 0.5	0.69B	16.8l 3H 1.5l	0.08D
0.5 - 0.65	0.69B	3H 2.1l	0.09D
0.75 - 0.9	0.49B	7H 3.7l	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 ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment
15A1_K for soluble	salts Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment
15A1_MG for soluble	salts Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment
15A1_NA for soluble	salts Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment
15G_C_AL2 By AAS	salts Exchangeable aluminium - meq per 100g of soil - Aluminium By KCl extraction and detremination
15G1	Exchange acidity (hydrogen and aluminium) by 1M potassium chloride

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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