Project Name: **Rhynie Soil Survey**
Project Code: **Rhynie** **Site ID:** **A1237** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (SA)**

Site Information

Desc. By: N.J. McKenzie
Date Desc.: 01/11/88
Map Ref.: Sheet No. : 6629-18 1:10000
Northing/Long.: 6216280 AMG zone: 54
Easting/Lat.: 289710 Datum: AGD66
Locality:
Elevation: 282 metres
Rainfall: No Data
Runoff: No Data
Drainage: No Data

Geology

ExposureType: Undisturbed soil core
Geol. Ref.: No Data
Conf. Sub. is Parent. Mat.: No Data
Substrate Material: No Data

Land Form

Rel/Slope Class: No Data
Morph. Type: Open depression (vale)
Elem. Type: No Data
Slope: 1 %
Pattern Type: No Data
Relief: No Data
Slope Category: No Data
Aspect: 0 degrees

Surface Soil Condition (dry): Firm

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified
Mapping Unit: N/A
Principal Profile Form: N/A
Great Soil Group: N/A

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.08 m	Dark reddish brown (5YR3/2-Moist); ; Light medium clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Rough-ped fabric; Dry; Strong consistence; Field pH 7 (Raupach); Abrupt change to -
A12	0.08 - 0.1 m	Dark reddish brown (5YR3/2-Moist); , 2.5YR44, 20-50% , 0-5mm, Distinct; , 5YR54; Fine sandy clay; Weak grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Dry; Very firm consistence; Field pH 7 (Raupach);
A12	0.1 - 0.2 m	Dark reddish brown (5YR3/2-Moist); , 2.5YR44, 20-50% , 0-5mm, Distinct; , 5YR54; Fine sandy clay; Weak grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Dry; Very firm consistence; Field pH 7 (Raupach); Clear change to -
A21	0.2 - 0.3 m	Dark reddish brown (5YR3/4-Moist); , 5YR43, 20-50% , 5-15mm, Distinct; , 5YR64; Clay loam; Massive grade of structure; Rough-ped fabric; Dry; Strong consistence; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Concretions; Field pH 7.5 (Raupach);
A21	0.3 - 0.4 m	Dark reddish brown (5YR3/4-Moist); , 5YR43, 20-50% , 5-15mm, Distinct; , 5YR64, 20-50% , 5-15mm, Distinct; Clay loam; Massive grade of structure; Rough-ped fabric; Dry; Strong consistence; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Concretions; Field pH 7.5 (Raupach); Clear change to -
A22	0.4 - 0.5 m	Reddish brown (5YR5/4-Moist); Pink (5YR7/4-Dry); , 5YR53, 20-50% , 5-15mm, Distinct; Sandy clay loam; Massive grade of structure; Rough-ped fabric; Dry; Strong consistence; Few (2 - 10 %), Ferromanganiferous, Coarse (6 - 20 mm), Concretions; Field pH 8 (Raupach);
A22	0.5 - 0.6 m	Reddish brown (5YR5/4-Moist); Pink (5YR7/4-Dry); , 5YR53, 20-50% , 5-15mm, Distinct; Sandy clay loam; Massive grade of structure; Rough-ped fabric; Dry; Strong consistence; Few (2 - 10 %), Ferromanganiferous, Coarse (6 - 20 mm), Concretions; Field pH 8 (Raupach); Sharp change to -
B21	0.6 - 0.75 m	Red (2.5YR4/5-Moist); , 5YR43, 20-50% , 15-30mm, Distinct; Medium heavy clay; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Dry; Very strong consistence; Many cutans, >50% of ped faces or walls coated, prominent; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach); Abrupt change to -

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B22	0.75 - 0.9 m	Yellowish red (5YR4/8-Moist); ; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Dry; Very strong consistence; Many cutans, >50% of ped faces or walls coated, prominent; Common (10 - 20 %), Calcareous, Very coarse (20 - 60 mm), Soft segregations; Field pH 8.5 (Raupach); Clear change to -
B23	0.9 - 1.2 m	Yellowish red (5YR5/8-Moist); ; Light medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Dry; Very strong consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach);
B23	1.2 - 1.5 m	Yellowish red (5YR4/8-Moist); ; Light medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Dry; Very strong consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach); Gradual change to -
B31	1.5 - 1.9 m	Yellowish red (5YR4/8-Moist); ; Light medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Dry; Very strong consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach);
B31	1.9 - 2.3 m	Yellowish red (5YR5/6-Moist); , 2.5YR46, 20-50% , 5-15mm, Faint; Light medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Dry; Very strong consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach); Clear change to -
B32	2.3 - 2.5 m	Yellowish red (5YR5/6-Moist); , 2.5YR46, 20-50% , 5-15mm, Faint; Light medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Dry; Very strong consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Fine (0 - 2 mm), Nodules; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (Raupach); Abrupt change to -
	2.5 - 2.9 m	Reddish yellow (7.5YR6/6-Moist); , 7.5YR72, 10-20% , 15-30mm, Faint; Heavy clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Many cutans, >50% of ped faces or walls coated, prominent; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules; Many (20 - 50 %), Calcareous, Very coarse (20 - 60 mm), Soft segregations; Field pH 8.5 (Raupach);

Morphological Notes

A21	The A2 has a fair proportion of segregations (water logging).
A22	Mottle:Some red flecks (<2%)
B21	The A2/B21 boundary is extremely sharp and there may be a silica capping on top of the B21. The A2 and B23 (dispersive) fall apart in water (strongly slaking).
B23	The carbonate profile is odd and the second metre of material is low in carbonate and very dispersive (contrast with the non-slaking layer below it).
B31	The B3 is dispersive but has the appearance of being porous and with a low BD. Compared with the clay above and below.

Observation Notes

Site Notes

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m	Cmol (+)/kg							%
0 - 0.08	5.9C	0.1A								
	6.63A									
0.08 - 0.1										
0.1 - 0.2										
0.2 - 0.3										
0.3 - 0.4	6.54C	0.05A								
	7.17A									
0.4 - 0.5										
0.5 - 0.6	7.05C	0.09A								
	8.17A									
0.6 - 0.75	7.63C	0.17A								
	8.59A									
0.75 - 0.9	8.37C	0.35A								
	9.15A									
0.9 - 1.2	8.37C	0.35A								
	9.24A									
1.2 - 1.5										
1.5 - 1.9	8.46C	0.38A								
	9.39A									
1.9 - 2.3										
2.3 - 2.5										
2.5 - 2.9	9.49A	0.4A								

Depth	CaCO3	Organic	Avail.	Total	Total	Total	Bulk	Particle Size Analysis				
		C	P	P	N	K	Density	GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.08												
0.08 - 0.1												
0.1 - 0.2												
0.2 - 0.3												
0.3 - 0.4												
0.4 - 0.5												
0.5 - 0.6												
0.6 - 0.75												
0.75 - 0.9												
0.9 - 1.2												
1.2 - 1.5												
1.5 - 1.9												
1.9 - 2.3												
2.3 - 2.5												
2.5 - 2.9												

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
m		g/g - m3/m3						mm/h	mm/h
0 - 0.08									
0.08 - 0.1									
0.1 - 0.2									
0.2 - 0.3									
0.3 - 0.4									

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0.4 - 0.5
0.5 - 0.6
0.6 - 0.75
0.75 - 0.9
0.9 - 1.2
1.2 - 1.5
1.5 - 1.9
1.9 - 2.3
2.3 - 2.5
2.5 - 2.9

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Laboratory Analyses Completed for this profile

12C2	Calcium chloride extractable boron - ICPAES
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