AGRICULTURAL QUALITY

OF LAND AT FORMER RAF MELBOURNE

Report 2218/1

6th February 2024

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M W Palmer PhD, CSci, MISoilSci
L Thomas, MSc, MISoilSci

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Land Research Associates Ltd
Lockington Hall,
Lockington,
Derby
DE74 2RH
www.lra.co.uk

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1.0 Introduction

1.1 This report provides information on the agricultural quality of 310.8 ha of land near Melbourne, East Riding of Yorkshire. The report is based on a survey of the land between October 2023 and February 2024.

1.2 The land is divided into four blocks: the main block comprises the former RAF Melbourne Airfield, bordered to the east by industrial units and residential properties at Seaton Ross village, and on other sides by adjoining agricultural land. A second block to the west is separated by from the Airfield by a narrow strip of land. The third and fourth blocks are situated to the north-west, either side of Ash Lane.

1.3 The site is mainly level at an average elevation of approximately 7 m AOD.

1.4 At the time of survey the land was mainly under maize crops, with smaller areas of cereals and oilseed rape, and some grass fields.

1.5 British Geological Survey 1:50,000 scale information records the underlying geology of the land as Mercia Mudstone, but entirely covered by surface drift deposits: the land in the south and west is recorded as underlain by Thorganby Clay Member. This material consists largely of laminated clays and silts. The land in the north and east is recorded as underlain by Bielby Sand Formation. This material consists of mainly fine sands and coarse silts, interpreted as originally glacio-fluvial outwash material, often reworked by wind-blow.

1.6 The National Soil Map (published at 1:250,000 scale) records the following:

- Foggathorpe 2 Association covering land in the south and west. These are dominantly poorly-draining clays. Patches with loamy upper layers are reported in hollows, with sandier soils on elevated areas associated with glacio-fluvial or wind-blown deposits[1].
- Sessay Association is mapped in the central and south-eastern portion of the airfield, as well as an area in the north-west. These soils form a complex mixture of fine and coarse loams (and some sands) affected by shallow groundwater, formed in glacial outwash deposits[1].
- Everingham Association covering the northern section of the airfield:

[1]Jarvis, R.A., *et al*., 1984. *Soils and their use in Northern England*. Soil Survey of England and Wales Bulletin No. 10, Harpenden.

mainly fine sands affected by shallow groundwater, formed in wind-blown deposits[1].

1.7 No detailed Agricultural Land Classification surveys of the land (to the current Guidelines) have previously been published. Provisional mapping from the 1970s shows most of the land as Grade 3 and the land in the west as Grade 4.

2.0 Soils

2.1 A detailed soils and agricultural quality survey was carried out in January 2024 in accordance with MAFF (1988) guidelines[2]. It was based on observations at intersects of a 100 m grid, giving a density of one observation per hectare. During the survey, soils were examined by a combination of pits and augerings to a maximum depth of 1.2 m. A log of the sampling points and a map (Map 1) showing their locations are in an appendix to this report.

SURVEY RESULTS

2.1 Soils at the site were found to vary according to underlying geology: most of the land is underlain by clays, but soil variation occurs where surface layers are formed of overlying sandy and silty material, as described below.

Slowly permeable clays

2.2 The land is dominantly highly uniform, comprising clay soils formed in lacustrine deposits. The topsoils are mainly clays or heavy clay loams, mainly directly over dense poorly-structured clay with evidence of seasonal waterlogging (gleying comprising greyish colours with ochreous mottles). The lower layers are sometimes reddish, but more commonly blueish grey. These soils are judged poorly-draining (Soil Wetness Class IV) under the local climate.

2.3 Example profiles from observation points 3, 171 and 268 (see Map 1) are fully described in an appendix to this report.

Sandy soils

2.4 There are two types: in the east of the airfield soils are loamy medium sands or medium sands; in the north of the airfield these soils are fine loamy sands, sandy loams or sandy silt loams. In most areas the subsoils are greyish and mottled indicating historically shallow groundwater, but these soils are easily drained for agriculture (via field edge ditches) and are judged freely-draining (Soil Wetness Class I).

2.5 Example profiles from observation points 57 and 226 (see Map 1) are fully described in an appendix to this report.

[2]MAFF, (1988).*Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

Loamy soils over clay

2.6 On the boundary between the soil types described above, intermediate soils occur with sandy clay loam or sand loam textured topsoil, over slowly permeable clay at intermediate depth. The upper subsoil layer is usually coarse loamy or sandy These soils are judged to be freely to imperfectly-draining (Soil Wetness Class II to III).

2.7 An example profile from observation point 116 is fully described in an appendix to this report.

3.0 Agricultural land quality

3.1. The agricultural climate is an important factor in assessing the agricultural quality of land and has been calculated using the Climatological Data for Agricultural Land Classification[3]. Separate interpolated climatic values are shown for the main site and the land in the north-west below.

Main site: grid reference: SE 763,419 (7 m)

- Average annual rainfall: 640 mm
- January-June accumulated temperature >0°C 1396 day°
- Field capacity period 147 days
- Summer moisture deficits for: wheat: 107 mm
  potatoes: 98 mm

North-west: grid reference: SE 741,428 (7 m)

- Average annual rainfall: 623 mm
- January-June accumulated temperature >0°C 1396 day°
- Field capacity period 143 days
- Summer moisture deficits for: wheat: 107 mm
  potatoes: 99 mm

3.2. The survey results were used in conjunction with the agro-climatic data above to classify the site using the revised guidelines for ALC issued in 1988 by MAFF[4]. There are no overriding climatic limitations to agricultural land quality at this locality.

3.3. The land was found to be mainly limited for agriculture by wetness/workability constraints and droughtiness. Other factors were assessed but do not limit the land grade. Land of grades 1, 2 and 3 quality has been identified.

[3]Meteorological Office, (1989).*Climatological Data for Agricultural Land Classification*.
[4]MAFF, (1988).*Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

LAND GRADES

Grade 1

3.4. This land occurs in patches in the north of the airfield where fine sands and coarse loamy soils occur. This land has no significant drainage issues once land drains are installed. The soils supply adequate moisture to prevent droughtiness restricting crop yields. This land has no significant limitations to agriculture.

Grade 2

3.5. This grade is mapped in the north-west and includes areas with medium or coarse loamy topsoil and slight drainage impedance (Soil Wetness Class II or III). Slight wetness workability limitations apply, usually only restricting field operations in winter. Many of these soils also have slightly sub-optimal subsoil moisture storage, either due to sandy or poorly structured clay layers at depth. Yields of arable crops are likely to be reduced in dry summers.

Subgrade 3a

3.6. This includes land in the east of the main airfield land with medium sandy subsoil which store limited moisture. Moderate summer droughtiness is likely to reduce average yields of arable crops on this land. Some variability occurs in the degree of droughtiness of these soils, with some profiles marginally of lower grade (Subgrade 3b) and some less droughty (Grade 2). However, as these areas could not realistically be mapped or managed separately, it is judged most appropriate to grade all of this soil type with the average degree of droughtiness limitation (Subgrade 3a).

3.7. Also included is land with medium loamy topsoils and imperfect drainage (Soil Wetness Class III). These soils typically occur on the boundary between sandy soils and slowly permeable clays. The moderately high clay content of the topsoil, combined with subsoil drainage restrictions means that wetness/workability limitations usually restrict machinery land access in winter and early spring, although late spring (as well as autumn) cultivations are usually possible.

Subgrade 3b

3.8. This land has slowly permeable clay soils, either with high topsoil clay content and imperfect or poor drainage (Soil Wetness Class III or IV), or with moderately high topsoil clay content and poor drainage (Soil Wetness Class IV). This land is generally too wet and difficult to work in spring, and arable use is therefore limited to a narrow range of crops, chiefly autumn-sown cereals, with oilseed rape or beans as break crops. Relatively high yields of these crops can be

achieved on a regular basis, but wet autumns cause difficulties with late harvests and sowings and crop failures can occur in these years.

3.9. Patches of slightly lighter soils occur in some areas, which have greater potential but are small and hard to predict. They could not be mapped or managed separately and are judged to be most appropriately graded with the wetter surrounding land.

Other land (non-agricultural)

3.10. This land includes metalled tracks and other hard standings, water bodies and wooded areas.

Table 3.1: Land grade areas (ha)

Grade/subgrade	*Total*	*% of land*
Grade 1	14.3	5
Grade 2	7.7	2
Subgrade 3a	60.1	19
Subgrade 3b	209.9	68
Other land	18.8	6
Total	310.8	100

APPENDIX

MAPS AND DETAILS OF OBSERVATIONS

INTERPOLATED CLIMATIC DATA

SELECTED DROUGHTINESS CALCULATIONS

Melbourne Airfield: Soils and ALC survey – Details of observations at each sampling point

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
1	0-33	C	<5	33-80+	C	xxx				1	IV	3b	W
2	0-30	C	<5	30-38	C	xxx	38-60 60-80+	C C	xxx xxx	1	IV	3b	W
3	0-24	C	<5	23-50	C	xxx	50-80+	C	xxx	1	IV	3b	W
4	0-27	HCL	<5	27-60	C	xxx	60-80+	C	xxx	1	IV	3b	W
5	0-24	C	<5	24-50	C	xxx	50-75 75-80+	MSL C	xxx	1	IV	3b	W
6	0-28	SCL	<5	28-45	SCL	xxx	45-80+	C	xxx	1	III	3a	W
7	0-24	C	<5	24-40	C	xxx	40-80+	C	xxx	1	IV	3b	W
8	0-24	C	<5	24-50	C	xxx	50-80+	C	xxx	1	IV	3b	W
9	0-24	C	<5	24-55	C	xxx	55-80+	C	xxx	1	IV	3b	W
10	0-26	C	<5	26-40	C	xxx	40-80+	C	xxx	1	IV	3b	W
11	0-26	HCL	<5	26-80+	C	xxx				1	IV	3b	W
12	0-23	C	<5	23-50	C	xxx	50-80+	C	xxx	0	IV	3b	W
13	0-25	C	<5	25-50	C	xxx	50-80+	C	xxx	0	IV	3b	W
14	0-23	C	<5	23-40	C	xxx	40-80+	C	xxx	1	IV	3b	W
15	0-24	C	<5	24-80+	C	xxx				1	IV	3b	W
16	0-25	HCL / C	<5	25-80+	C	xxx				1	IV	3b	W
17	0-30	C	<5	30-80+	C	xxx				1	IV	3b	W
18	0-25	C	<5	25-37	SCL	xxx	37-60 60-80+	C C	xxx xxx	1	IV	3b	W
19	0-28	C	<5	28-75	C	xxx	75-80+	LMS	xxx	1	IV	3b	W
20	0-28	HCL	<5	28-37	SCL	xxx	37-60 60-80	C C	xxx xxx	1	IV	3b	W
21	0-24	C	<5	24-50	C	xxx	50-80+	C	xxx	1	IV	3b	W
22	0-25	C	<5	25-80+	C	xxx				1	IV	3b	W
23	0-26	MSL	<5	26-51	MSL	xxx	51-120	C	xxx	1	III	2	D/W
24	0-23	C	<5	23-40	C	xxx	40-80+	C	xxx	0	IV	3b	W
25	0-35	C	<5	35-80+	C	xxx				1	IV	3b	W
26	0-24	C	<5	24-45	C	xxx	45-80+	C	xxx	1	IV	3b	W
27	0-24	HCL / C	<5	24-47	C	xxx	47-80+	C	xxx	1	IV	3b	W
28	0-28	HCL / C	<5	28-80+	C	xxx				1	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
29	0-32	C	<5	32-80+	C	xxx				1	IV	3b	W
30	0-30	HCL / SCL	<5	30-50	SCL	xxx	50-80+	C	xxx	1	III	3a/b	W
31	0-28	HCL	<5	28-65	C	xxx	65-80+	C	xxx	1	IV	3b	W
32	0-28	HCL	<5	28-35	SC	xxx	35-80+	C	xxx	1	IV	3b	W
33	0-28	C	<5	28-60	C	xxx	60-80+	C	xxx	1	IV	3b	W
34	0-28	SCL	<5	28-80+	C	xxx				1	IV	3b	W
35	0-28	C	<5	28-80+	C	xxx				1	IV	3b	W
36	0-23	C	<5	23-80+	C	xxx				1	IV	3b	W
37	0-30	HCL	<5	30-80+	C	xxx				1	IV	3b	W
38	0-25	C	<5	25-50	C	xxx	50-80+	C	xxx	1	IV	3b	W
39	0-30	C	<5	30-80+	C	xxx				1	IV	3b	W
40	0-23	C	<5	23-35	C	xxx	35-80+	C	xxx	0	IV	3b	W
41	0-28	HCL / C	<5	28-55	C	xxx	55-80+	C	xxx	0	IV	3b	W
42	0-27	C	<5	27-50	C	xxx	50-80+	C	xxx	0	IV	3b	W
43	0-27	C	<5	27-80+	C	xxx				1	IV	3b	W
44	0-24	C	<5	24-80+	C	xxx				1	IV	3b	W
45	0-26	SCL	<5	26-40	SCL / SC	xxx	40-100+	C	xxx	<1	III / IV	3a/b	W
46	0-25	HCL	<5	25-50	C	xxx	50-100+	C	xxx	1	IV	3b	W
47	0-30	SCL	<5	30-80+	C	xxx				1	IV	3b	W
48	0-25	MCL	<5	25-80+	C	xxx				<1	IV	3b	W
49	0-30	C	<5	30-80+	C	xxx				<1	IV	3b	W
50	0-28	SCL	<5	28-40	MSL	xxx	40-80+	C	xxx	1	III	3a	W
51	0-30	MSL	<5	30-45	LMS	xxx	45-100+	C	xxx	<1	III	2	D / W
52	0-28	MSL	<5	28-80+	C	xxx				1	IV	3a	W
53	0-35	MSL	<5	35-70	LMS	xxx	70-100+	C	xxx	<1	II	2	D
54	0-32	SCL/ HCL	<5	32-90	C	xxx	90-100+	LMS	xxx	1	IV	3b	W
55	0-38	HCL	<5	38-45	SCL	xxx	45-100+	C	xxx	1	III	3b	W
56	0-30	HCL	<5	30-80+	C	xxx				<1	IV	3b	W
57	0-32	MSL	<5	32-60	LMS	xxx	60-120	C	xxx	1	III	2	D / W
58	0-25	C	<5	25-80+	C	xxx				1	IV	3b	W
59	0-30	HCL	<5	30-85	LMS	xxx	85-100+	C(r)	xxx	<1	I	2	D
60	0-30	HCL	<5	30-36	HCL	xxx	36-80+	C	xxx	<1	IV	3b	W
61	0-35	MSL	<5	35-70	MSL	xxx	70-100+	C	xxx	1	III	2	W
62	0-30	MSL	<5	30-48	SCL	xxx	48-100+	C	xxx	1	III	2	D / W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
63	0-30	C	<5	30-80	C	xxx				1	IV	3b	W
64	0-26	HCL	<5	26-70	C	xxx	70-80+	C	xxx	<1	IV	3b	W
65	0-32	HCL	<5	32-40	SC	xxx	40-65 65-80+	C C	xxx xxx	1	IV	3b	W
66	0-31	HZCL	<5	31-60	C	xxx	60-80+	C	xxx	1	IV	3b	W
67	0-28	C	<5	28-50	C	xxx	50-80+	C	xxx	1	IV	3b	W
68	0-30	HCL	<5	30-65	C	xxx	65-80+	C	xxx	<1	IV	3b	W
69	0-24	SCL	<5	24-35 35-38	SCL SCL	xx xxx	38-80+	C	xxx	<1	III / IV	3a/b	W
70	0-26	SCL	<5	26-35	SCL	xxx	35-67 67-80+	C C	xxx	1	IV	3b	W
71	0-25	C	<5	25-80+	C	xxx				1	IV	3b	W
72	0-26	C	<5	26-80+	C	xxx				1	IV	3b	W
73	0-30	M/HCL	<5	30-60	C	xxx	60-80+	C	xxx	<1	IV	3b	W
74	0-36	SC	<5	36-80+	C	xxx				1	IV	3b	W
75	0-28	SCL	<5	28-70	C	xxx	70-80+	C	xxx	1	IV	3b	W
76	0-30	C	<5	30-60	C	xxx	60-80+	C	xxx	<1	IV	3b	W
77	0-35	C	<5	35-70	C	xxx	70-80+	C	xxx	<1	IV	3b	W
78	0-25	C	<5	25-65	C	xxx	65-80+	C	xxx	1	IV	3b	W
79	0-25	C	<5	25-65	C	xxx	65-80+	C	xxx	1	IV	3b	W
80	0-28	SCL	<5	28-34	SCL	xxx	34-70 70-80+	C C	xxx xxx	1	IV	3b	W
81	0-30	SCL	<5	30-50	SC	xxx	50-80+	C	xxx	1	III/IV	3a/b	W
82	0-25	HCL	<5	25-80+	C	xxx				1	IV	3b	W
83	0-32	SCL	<5	32-80+	C	xxx				1	IV	3b	W
84	0-25	C	<5	25-80+	C	xxx				1	IV	3b	W
85	0-27	HCL	<5	27-80+	C	xxx				1	IV	3b	W
86	0-25	HCL	<5	25-80+	C	xxx				1	IV	3b	W
87	0-33	HCL	<5	33-70	C	xxx	70-80+	C	xxx	1	IV	3b	W
88	0-30	HCL / C	<5	30-50	C	xxx	50+	Stopped (drain?)		<1	IV	3b	W
89	0-28	C	<5	28-65	C	xxx	65-80+	C	xxx	<1	IV	3b	W
90	0-33	C	<5	33-50	C	xxx	50-80+	C	xxx	<1	IV	3b	W
91	0-32	HCL	<5	32-80+	C	xxx				1	IV	3b	W
92	0-30	SC	<5	30-50	SC	xxx	50-80+	C	xxx	1	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
93	0-29	C	<5	29-80+	C	xxx				1	IV	3b	W
94	0-30	SC	<5	30-48	C	xxx	48-70 70-80+	LMS C	xxx xxx	1	IV	3b	W
95	0-33	SCL	<5	33-50	C	xxx	50-80+	Gr C	xxx	1	IV	3b	W
96	0-30	C	<5	30-80+	C	xxx				1	IV	3b	W
97	0-28	C	<5	28-65	C	xxx	65-80+	C	xxx	1	IV	3b	W
98	0-31	FSZL	0	31-65+	FSZL topsoil?	o				0	-	-	-
99	Former runway												
100	Former runway												
101	0-33	FSZL	0	33-100+	FS	xxx				0	I	1	-
102	0-40	FSZL	<5	40-95+	FSL/FSZL	xxx				0	I	1	-
103	Former runway												
104	0-28	FLS/FSL	0	28-49	LFS/FSL	xxx	49-100+	LFS	xxx	0	I	1	-
105	0-40	FSZL	0	40-90+	FS	xx				0	I	1	-
106	0-28	FSZL	<5	28-40	FSZL	xxx	40-100+	FS	xxx	0	I	1	-
107	Former runway												
108	0-26	LFS	0	26-38	LFS	o	38-100+	LFS	xxx	0	I	1	-
109	0-50+	LFS(dist)	0							0	-	-	-
110	0-35	MSL	<5	35-100+	FSZL	xxx				0	I	1	-
111	Former runway												
112	0-30	LFS	0	30-56	LFS	o	56-100+	FS	o	1	I	1	-
113	0-25	LMS	0	25-34	MS	o	34-100+	MS	xxx	0	I	3b/3a	D
114	0-25	LMS	0	25-76	MS	xxx	76-100+	MSL	xxx	0	I	3b/3a	D
115	0-30	MCL	<5	30-46	FSZL	xxx	46-100+	C	xxx	0	III	3a	W
116	0-30	MCL	<5	30-47	SCL	xxx	47-100+	C	xxx	0	III	3a	W
117	0-33	MZCL	<5	33-90+	MZCL	xxx				1	II	2	W
118	0-30	MCL	<5	30-47	SCL/MSL	xxx	47-100+	C	xxx	0	III	3a	W
119	Former runway												
120	0-31	LFS	0	31-57	LFS	xxx	57-100+	MSL	xxx	0	I	1	-
121	0-30	LMS	0	30-58	MS	xxx	58-100+	MSL	xxx	0	I	3b/3a	D
122	0-24	LMS	0	24-40	LMS	x	40-100+	LMS	xxx	1	I	3a	D
123	0-25	MSL	0	25-45	MS	xxx	45-90+	C	xxx	1	III	3a	D
124	0-33	MCL	<5	33-100+	C	xxx				0	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
125	0-30	MCL	<5	30-60+	C	xxx				0	IV	3b	W
126	0-32	SCL	0	32-63	SCL	xxx	63-90+	C	xxx	0	III	3a	W
127	0-33	MSL/SCL	<5	33-100+	MSL	xxx				0	I	1	-
128	0-30	MCL	<5	30-90+	C wet	xxx				1	IV	3b	W
129	Former runway												
130	0-27	MSL	0	27-43	MSL	xxx	43-80+	C	xxx	0	III	2	W
131	0-25	MSL	0	25-57	LMS	xxx	57-95 95-100+	MS C	xxx xxx	0	I	3a	D
132	0-26	MSL	0	26-46	MSL	xxx	46-72 72-100+	LMS MS	xxx xxx	1`	I	2	D
133	0-34	SCL	0	34-56	SCL	xxx	56-100+	MSL(wet)	xxx	1	II	2	W
134	0-32	MSZL	0	32-72	LMS	xxx	72-90+	C	xxx	0	II	2/3a	D
135	0-28	MCL	<5	28-40	MCL	xxx	40-100+	C	xxx	0	III/IV	3a/3b	W
136	0-31	MCL	<5	31-95+	C	xxx				0	IV	3b	W
137	0-37	SCL	0	37-72	HCL	xxx	72-90+	C	xxx	0	IV	3b	W
138	Former runway												
139	0-30	M/HCL	<5	30-100+	C	xxx				0	IV	3b	W
140	Former runway												
141	0-25	HCL	0	25-47	C(dist)	-	47-80+	C	xxx	0	IV	3b	W
142	0-28	SCL	0	28-60+	C(dist)	-				0	-	-	-
143	0-60+	MSL(dist)	0							0	-	-	-
144	0-27	MSL	0	27-59	LMS	xxx	59-90+	C		1	III	2	D
145	0-30	HCL	<5	30-90+	C	xxx				0	IV	3b	W
146	0-30	HCL	0	30-80+	C	xxx				0	IV	3b	W
147	0-30	HCL	0	30-80+	C	xxx				0	IV	3b	W
148	0-32	HCL	<5	32-100+	C with sand incl.	xxx				0	IV	3b	W
149	0-27	HCL	0	27-80+	C	xxx				0	IV	3b	W
150	Former runway												
151	0-31	MCL	<5	31-90+	C	xxx				0	IV	3b	W
152	Former runway												
153	0-36	SCL	0	36-46	SCL	xxx	46-90+	C	xxx	1	III	3a	W
154	0-30	SCL	0	30-40	SCL	xxx	40-80+	C	xxx	0	III/IV	3a/3b	W
155	0-29	HCL	<5	29-100+	C	xxx				0	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
156	0-30	MCL	<5	30-95+	C	xxx				0	IV	3b	W
157	0-30	HCL	0	30-80+	C	xxx					IV	3b	W
158	0-30	HCL	0	32-49	HCL	xxx	49-90+	C	xxx		IV	3b	W
159	0-31	HCL	<5	31-100+	C	xxx				0	IV	3b	W
160	0-31	HCL	<5	31-100+	C	xxx				0	IV	3b	W
161	0-28	HCL	<5	28-90+	C	xxx				1	IV	3b	W
162	0-32	HCL	<5	32-100+	C	xxx				0	IV	3b	W
163	Former runway												
164	0-34	SCL	0	34-90+	C	xxx				0	IV	3b	W
165	0-30	HCL	<5	30-90+	C	xxx				0	IV	3b	W
166	0-28	MCL	<5	28-36	M/SCL	xxx	36-100+	C	xxx	0	IV	3b	W
167	0-30	HCL	<5	30-100+	C	xxx				1	IV	3b	W
168	0-32	SCL	<5	32-60	SCL with clay bands	xxx	60-100+	C	xxx	1	IV/III	3a/b	W
169	0-29	HCL	0	29-65+	C	xxx				0	IV	3b	W
170	0-28	HCL	<5	28-100+	C	xxx				0	IV	3b	W
171	0-28	HCL	0	28-45	C	x	45-90+	C		0	IV	3b	W
172	0-28	HCL	0	28-90+	C	xxx				0	IV	3b	W
173	0-27	SCL	0	27-39	SCL	xxx	39-90+	C		0	III/IV	3a/b	W
174	0-28	HCL	<5	28-100+	C	xxx				0	IV	3b	W
175	0-30	SCL	<5	30-48	MSL	xxx	48-100+	C	xxx	0	III	3a	W
176	0-30	HCL	<5	30-90+	C	xxx				1	IV	3b	W
177	0-34	HCL/MCL	<5	34-50	SCL	xxx	50-100+	C	xxx	0	III	3a/b	W
178	0-28	HCL wet	<5	28-50+	C	xxx	50+	Waterlogged (stopped)		0	IV	3b	W
179	0-30	HCL	<5	30-95+	C	xxx				0	IV	3b	W
180	0-31	HCL	0	31-90+	C	xxx				0	IV	3b	W
181	0-33	HCL	0	33-80+	C	xxx				0	IV	3b	W
182	0-30	HCL	<5	30-90+	C	xxx				0	IV	3b	W
183	0-34	HCL	<5	34-100+	C	xxx				0	IV	3b	W
184	0-40	HCL (ditch)	<5	40-90+	C	xxx				0	IV	3b	W
185	0-32	HCL	<5	32-100+	C	xxx				0	IV	3b	W
186	0-30	HCL	<5	30-41	HCL	xxx	41-100+	C	xxx	0	III	3b	W
187	0-25	SCL	<5	25-50	C	xxx	50+	Waterlogged (stopped)		0	IV	3b	W
188	0-31	HCL	0	31-70+	C	xxx				0	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
189	0-31	HCL	<5	31-100+	C	xxx				0	IV	3b	W
190	0-50+	HCL/C dist.	<5							0	-	-	-
191	0-31	MCL	<5	31-69	MCL	xxx	69-100+	C	xxx	0	II	2	W
192	0-60+	SCL(dist)	0							0	-	-	-
193	0-30	SCL	0	30-45	SCL	xxx	45-90+	C	xxx	0	III	3a	W
194	0-34	HCL	<5	34-46	HCL	xxx	46-100+	C	xxx	0	III	3b	W
195	Ditch												
196	0-30	MCL	<5	30-50	MCL	xxx	50-100+	C	xxx	0	III	3a	W
197	Made ground (edge of runway)												
198	0-26	LMS	0	26-100+	MS	xxx				1	I	3b	D
199	0-32	MSL	0	32-100+	MS	xxx				1	I	3a/3b	D
200	0-51	LMS(dist)	0	51-100+	MS(wet)	o				0	I	3a	D
201	0-32	LMS	0	32-71	MS	xxx	71-100+	LMS	xxx	0	I	3a/3b	D
202	0-28	LMS	0	28-100+	MS	xxx				1	I	3b/3a	D
203	0-32	MSL	0	32-48	MSL	xxx	48-100+	MS	xxx	1	I	2	D
204	0-28	slstSCL	<5	28-60+	LMS topsoil	-				0	I	-	-
205	0-33	LMS	0	33-100+	MS	xx(x)				0	I	3a	D
206	0-30	LMS	0	30-64	LMS	o	64-100+	LMS	xxx	0	I	3a	D
207	0-31	SCL	0	31-90+	HCL	xxx				0	IV	3b	W
208	0-36	MSL	0	36-60	LMS	xxx	60-90+	C	xxx	0	III	3a	D
209	Not recorded												
210	0-31	LMS	0	31-90+	MS	o				0	I	3b/3a	D
211	0-33	HCL	0	33-54	LMS	o	54-62 62-90+	MS LMS	xxx xxx	0	I	3a/2	D
212	0-32	SCL/MSL	0	32-60	MSL	xxx	60-90+	C	xxx	0	III	3a/2	W
213	0-32	MSL	0	32-52	MSL	xxx	52-80+	C	xxx	0	III	2	W
214	0-25	SCL	0	25-100+	C	xxx				0	IV	3b	W
215	0-27	MSL	0	27-60	LMS	xxx	60-90+	C	xxx	1	III	2/3a	W
216	0-33	LMS	0	33-84	MS	xxx	84-100+	SCL	xxx	0	I/II	3a	D
217	0-31	MSL	0	31-53	MS	o	53-100+	MS	xxx	0	I	3a	D
218	0-42	MSL	0	42-100+	LMS	x				0	I	2	D
219	0-37	SCL	0	37-90+	C	xxx				0	IV	3b	W
220	0-35	MSL	0	35-64	LMS	xxx	64-100+	MS	xxx	0	I	3a	D

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
221	0-31	MSL	0	31-73	LMS	xxx	73-100+	C	xxx		III	3a/2	D
222	0-32	SCL	0	32-80+	C	xxx				0	IV	3b	W
223	0-34	MSL	0	34-67	LMS	o	67-90+	MS	xxx	0	I	3a	D
224	0-32	LMS	0	32-81	MS	xxx	81-100+	C	xxx	0	II	3a/3b	D
225	0-37	LMS	0	37-100+	MS	o				0	I	3a	D
226	0-35	LMS	0	35-58	MS	o	58-120	MS	xxx	0	I	3a	D
227	0-31	LMS	0	31-100+	MS	o				0	I	3b/3a	D
228	0-32	SCL	0	32-50	C	xxx	50+	Waterlogged (stopped)		0	IV	3b	W
229	0-28	SCL	0	28-55	C	xxx	55+	Waterlogged (stopped)		0	IV	3b	W
230	0-30	HCL	0	30-54	MSZL(dist)	-	54-80+	C	xxx	0	III	3b	W
231	0-28	MSL	0	28-65	LMS	xxx	65-90+	C	xxx	0	III	3a/2	D
232	0-26	LMS	0	26-52	MS	o	52-100+	MS	xxx	0	I	3b	D
233	0-33	MSL	0	33-96	MS	xxx	96-100+	SCL	xxx	0	I	3a	D
234	0-26	SCL/MCL	0	26-90+	C	xxx				0	IV	3b	W
235	0-23	MCL/SCL	0	23-90+	C	xxx				0	IV	3b	W
236	0-28	SCL	0	22-50	C	xxx	50+	Waterlogged (stopped)		0	IV	3b	W
237	0-28	SCL	0	28-90+	C	xxx				0	IV	3b	W
238	0-30	MSL	0	30-42	LMS	xxx	42-90+	C	xxx	0	III	2	W/D
239	0-37	MSL	0	37-70	C	xxx	70+	Waterlogged (stopped)		0	IV	3a	W
240	0-27	HCL	0	27-42	SCL	xxx	42-90+	C	xxx	0	III	3b	W
241	0-25	SCL	0	25-37	MSL	xxx	37-80+	C	xxx	0	IV	3b	W
242	0-26	M/FSL	0	26-55+	dist	-				0	-	-	-
243	0-35	HCL	<5	35-60	MSL	xxx	60-100+	C	xxx	0	III	3b	W
244	0-32	HCL	<5	32-60+	C with sand dist?	xxx				0	IV	3b	W
245	0-30	LMS	0	30-100+	MS	xxx				0	I	3b	D
246	0-38	HCL	0	38-90+	C	xxx				0	IV	3b	W
247	0-29	HCL	0	29-80+	C	xxx				0	IV	3b	W
248	0-28	SCL	0	28-45	SCL	xxx	45-90+	C	xxx	0	III	3a	W
249	Hard standings												
250	0-33	M/HCL	<5	33-100+	C	xxx				0	IV	3b	W
251	0-34	MCL	<5	34+	Stopped on stones					0	-	-	-
252	0-33	HCL	<5	33-100+	C	xxx				0	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
253	0-28	MCL	<5	28-100+	C	xxx				0	IV	3b	W
254	0-23	FSL	0	23-58	MS	xxx	58-90+	C	xxx	1	III	3a	D
255	0-32	HCL	0	32-70+	C	xxx				0	IV	3b	W
256	0-26	HCL	0	26-90+	C	xxx				0	IV	3b	W
257	0-32	HCL	0	32-90+	C	xxx				0	IV	3b	W
258	0-29	HCL	0	29-90+	C	xxx				0	IV	3b	W
259	0-31	SCL	0	31-90+	C	xxx				0	IV	3b	W
260	0-31	HCL	<5	31-100+	C	xxx				0	IV	3b	W
261	0-31	HCL	<5	31-40	H/SCL	xxx	40-100+	C	xxx	0	III/IV	3b	W
262	0-30	CL	<5	30-60+	C	xxx	60+	Waterlogged (stopped)		0	IV	3b	W
263	0-31	HCL	<5	31-90+	C	xxx				0	IV	3b	W
264	0-29	HCL	<5	29-90+	C	xxx				0	IV	3b	W
265	0-30	HCL	0	30-90+	C	xxx				0	IV	3b	W
266	0-35	HCL	0	35-53	dist	-	53-90+	C	xxx	0	IV	3b	W
267	0-27	HCL	0	27-55	C	xxx	55+	Waterlogged (stopped)		0	IV	3b	W
268	0-28	HCL	0	28-120+	C	xxx				0	IV	3b	W
269	0-28	HCL	<5	28-100+	C	xxx				0	IV	3b	W
270	0-34	MCL	<5	34-45	SCL	xxx	45-100+	C	xxx	0	III	3a	W
271	0-30	HCL	<5	30-100+	C	xxx				0	IV	3b	W
272	0-25	FSL	0	25-68	FSL	xxx	68-80+	C	xxx	0	II/III	2	W
273	0-27	SCL	0	27-38	SCL	xxx	38-90+	C	xxx	0	IV/III	3b/3a	W
274	0-30	HCL	0	30-90+	C	xxx				0	IV	3b	W
275	0-39	HCL	0	39-90+	C	xxx				0	IV	3b	W
276	0-31	HCL	0	31-60+	C	xxx				0	IV	3b	W
277	Woodland												
278	0-31	MCL	<5	31-55	S/HCL	xxx	55-100+	C	xxx	0	III	3a	W
279	0-31	MCL	<5	31-100+	C	xxx				0	IV	3b	W
280	0-24	MCL/SCL	0	24-90+	C	xxx				0	IV	3b	W
281	0-34	HCL	0	34-80+	C	xxx				0	IV	3b	W
282	0-31	MCL/HCL	<5	31-90+	C	xxx				0	IV	3b	W
283	0-27	slstSCL	<5	27-55	C(dist)	-	55-90+	C	xxx	0	IV	3b	W
284	0-30	HCL	<5	30-50+	C	xxx	50+	Compacted		0	IV	3b	W
285	0-30	HCL	<5	30-50+	C	xxx	50+	Waterlogged (stopped)		0	IV	3b	W
286	0-28	HCL	<5	28-90+	C	xxx				0	IV	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones >20 mm (%)	Depth (cm)	Texture and stoniness	Mottling	Depth (cm)	Texture and stoniness	Mottling	(°)	Class	Grade	Main limitation
287	0-28	HCL	<5	28-90+	C	xxx				0	IV	3b	W
288	0-28	HCL	<5	28-100+	C	xxx				1	IV	3b	W
289	0-30	HCL	<5	30-100+	C with sand incl.	xxx				0	IV	3b	W
290	0-33	HCL	<5	33-90+	C	xxx				1	IV	3b	W

Soil survey log key

Gley indicators[1]

o	unmottled
x	1-2% ochreous mottles and brownish matrix (or a few to common root mottles (topsoils))[3]
xx	>2% ochreous mottles and brownish matrix and/or dull structure faces (slightly gleyed horizon)
xxx	>2% ochreous mottles and greyish or pale matrix (gleyed horizon) or reddish matrix and >2% greyish, brownish or ochreous mottles and pale ped faces
xxxx	mottles or f-m concentrations (gleyed horizon) dominantly blueish/greenish matrix, often with some reddish mottles (gleyed horizon)

Texture[2]

C – clay
ZC - silty clay
SC - sandy clay
CL - clay loam (H-heavy, M-medium)
ZCL - silty clay loam (H-heavy, M-medium)
SZL - sandy silt loam (F-fine, M-medium,C-coarse)
LS - loamy sand (F-fine, M-medium, C-coarse)
SL - sandy loam (F-fine, M-medium, C-coarse)
S - sand (F-fine, M-medium, C-coarse)
SCL - sandy clay loam
P - peat (H-humified, SF-semi-fibrous, F-fibrous)
LP - loamy peat; PL - peaty loam

Limitations:

W - wetness/workability
D - droughtiness
De - depth
F - flooding
St – stoniness
G - gradient
T – topography/microrelief
C - Climate

Suffixes & prefixes:

o - organic

(vsl, sl, m, v, x)**st** – (very slightly, slightly, moderately, very, extremely) **stony**[6]

(vsl, sl, m, v, x)**ca** (very slightly, slightly, moderately, very, extremely) **calcareous**[7]

Slowly permeable layers[4]

a depth underlined (e.g. 50) indicates the top of a slowly permeable layer

A wavy underline (e.g. 50 indicates the top of a layer borderline to slowly permeable

Wetness Class[5]

I (freely drained) to VI (very poorly drained)

Other abbreviations

fmn - ferri-manganiferous concentrations
dist - disturbed soil layer; chky - chalky
R – bedrock (CH – chalk, SST – sandstone LST – limestone, MST – Mudstone)
r-reddish, gn – greenish

[1]Gley indicators in accordance with Hodgson, J.M., 1997. Soil Survey Field Handbook (third edition). Soil survey technical monograph No. 5

[2]Texture in accordance with particle size classes in Hodgson (1997)

[3] Occasionally recorded in the texture box

[4]Permeability is estimated for auger borings and must be confirmed by full pit observations in accordance with the definitions in: Revised Guidelines for grading the quality of Agricultural Land (Maff 1988)

[5]Soil Wetness Classes are defined in Hodgson (1997)

[6]stoniness classes as defined in Hodgson (1997)

[7]calcareous classes as defined in Hodgson (1997)

Grades shown as intergrade e.g. **3a**/3b are close to the grade boundary. The estimate of which side of the boundary the grading falls is the shown first (in bold here)

grades in brackets eg. (3a) raised by one grade due to calcareous topsoil

Soil pit descriptions

Observation 3 (see Map 1)

0-24 cm	Very dark grey (10YR 3/1) clay; stoneless; weakly developed coarse subangular blocky structure; moderately firm; common very fine fibrous roots; non-calcareous; smooth clear boundary to:
24-50 cm	Grey (N 5/1) clay with common medium yellowish brown (10YR 4/6) and common fine brownish yellow (10YR 6/6) mottles; stoneless; moderately developed coarse prismatic structure; very firm; <0.5% macropores; common very fine fibrous roots; non-calcareous; wavy clear boundary to:
50-80+ cm	Dark grey (N 4/1) clay with many coarse brown (10YR 5/3) and many coarse yellowish brown (10YR 5/6) mottles; stoneless; strongly developed very coarse prismatic structure; very firm; <0.5% macropores; common very fine fibrous roots; non-calcareous.

Observation 57 (see Map 1)

0-32 cm	Very dark grey (10YR 3/1) medium sandy loam; stoneless; weakly developed coarse subangular blocky structure; moderately firm; a few fine fibrous roots; non-calcareous; wavy clear boundary to:
32-60 cm	Light brownish grey (10YR 6/2) loamy medium sand with strong brown (7.5YR 5/6) mottles; stoneless; weakly developed fine sub-angular blocky structure; loose; a few fine fibrous roots; non-calcareous; smooth clear boundary to:
60-120 cm	Dark grey (10YR 4/1) clay with many medium strong brown (7.5YR 4/6) mottles; stoneless; massive (structureless); very firm; no roots; non-calcareous.

Observation 116 (see Map 1)

0-30 cm	Dark brown (7.5YR 3/2) medium clay loam; very slightly stony small subangular stones; moderately developed fine to medium subangular blocky structure; friable; 2-5% pores; smooth clear boundary to:
30-47 cm	Brown (7.5YR 4/2) sandy clay loam with 5% fine distinct reddish yellow (7.5YR 6/8) and grey (7.5YR 6/1) mottles; well developed fine subangular blocky structure; friable; stoneless; porous; smooth sharp boundary to:
47-100 cm+	Light brown (7.5YR 6/3) clay with 10% large reddish yellow (7.5YR 6/8) and grey (10YR 6/1) mottles; stoneless; weakly developed very coarse prismatic structure; very firm; <0.5% biopores.

Observation 171 (see Map 1)

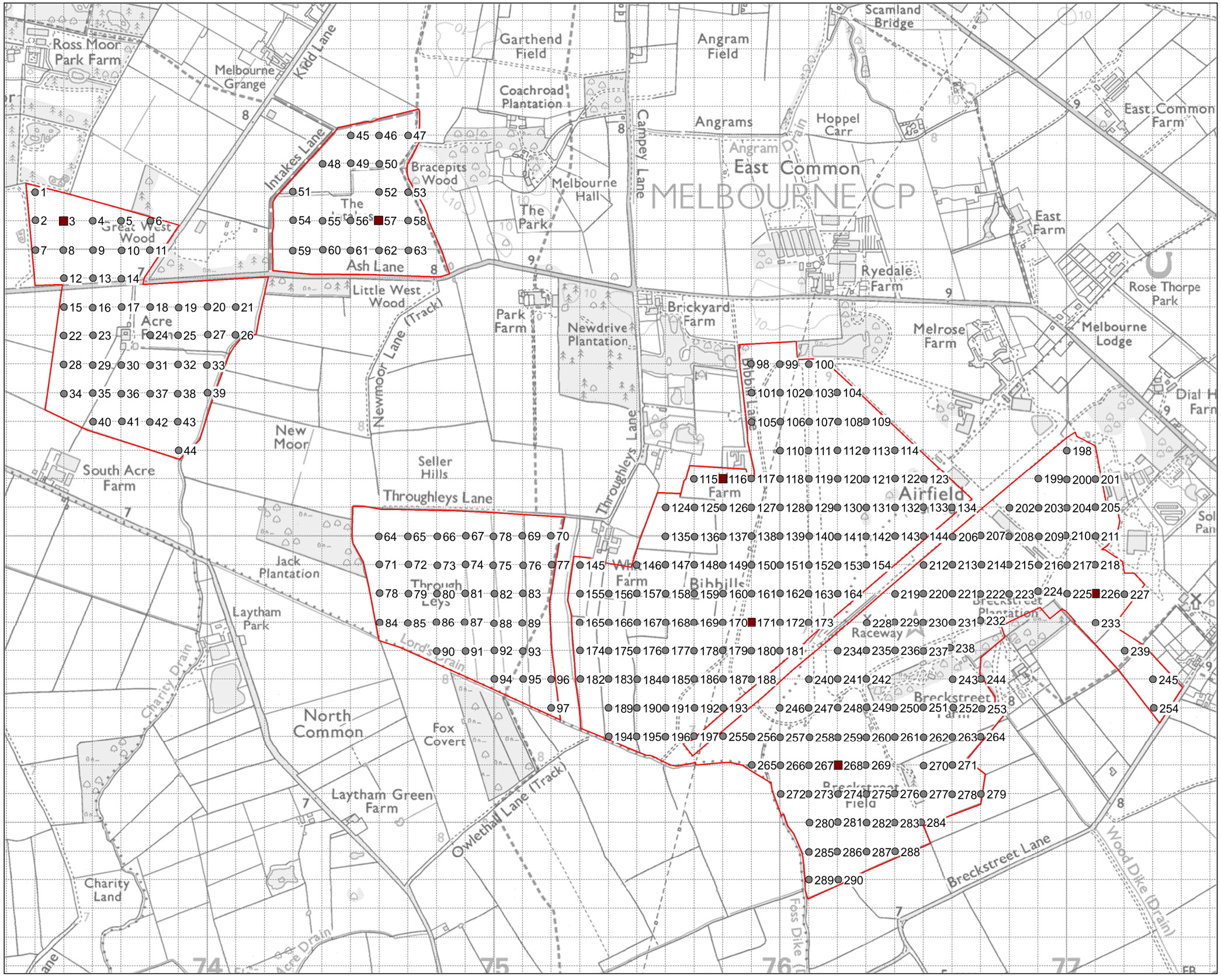
0-28 cm	Dark greyish brown (10YR 4/2) heavy clay loam; stoneless; weakly developed very coarse sub-angular blocky structure; firm (wet and plastic); smooth gradual boundary to:
28-45 cm	Light brownish grey (10YR 6/2) clay with 5% distinct fine strong brown (7.5YR 4/6) mottles; stoneless; weakly developed very coarse sub-angular blocky structure; firm; <0.5% macropores; medium packing density; smooth diffuse boundary to:
45-100 cm+	Blueish grey (5B 5/1) clay with 20% distinct fine and medium strong brown (7.5YR 5/8) mottles; stoneless; weakly developed coarse prismatic structure to structureless (massive); <0.5% macropores; high packing density.

Observation 226 (see Map 1)

0-35 cm	Dark brown (7.5YR 3/2) loamy medium sand; stoneless; weakly developed medium to fine sub-angular blocky structure; very friable; smooth clear boundary to:
35-58 cm	Greyish brown (10YR 5/2) medium sand; stoneless; structureless (single grain) smooth gradual boundary to:
58-120 cm	Light brownish grey (10YR 6/2) medium sand with 15% medium diffuse brownish yellow (10YR 6/6) mottles; stoneless; structureless (single grain); water table at 90 cm.

Observation 268 (see Map 1)

0-28 cm	Dark greyish brown (10YR 4/2) heavy clay loam; stoneless; moderately developed very coarse sub-angular blocky structure; firm; perched water at base; smooth clear boundary to:
28-48 cm	Grey (10YR 5/1) clay with 20% distinct fine and medium yellowish brown (10YR 5/8) mottles; stoneless; weakly developed very coarse angular blocky structure; very firm; <0.5% macropores; high packing density; smooth diffuse boundary to:
45-120 cm	Blueish grey (5B 5/1) clay with 20% distinct fine and medium strong brown (7.5YR 5/6) mottles; stoneless; weakly developed coarse prismatic structure to structureless (massive); <0.5% macropores; high packing density.


KEY
Auger observations
Pits
Site boundary
Site:
Melbourne
Map title:
MAP 1
Observations
Land Research ASSOCIATES
Tapton Innovation Centre
Brimington Road
Chesterfield
S41 0TZ
www.lra.co.uk
Date: 06/02/2024
Scale: 1:12,500@A3
MELBOURNE CP
East Common
Angrams
Angram Field
Garthend Field
Coachroad Plantation
Melbourne Hall
The Park
Park Farm
Newdrive Plantation
Brickyard Farm
Ryedale Farm
East Farm
Rose Thorpe Park
Melbourne Lodge
Melrose Farm
Dial H Farm
Scamland Bridge
East Common Farm
Hoppel Carr
Angram Drain
Campey Lane
Ross Moor Park Farm
Melbourne Grange
Kidd Lane
Intakes Lane
Bracepits Wood
Great West Wood
Little West Wood
Ash Lane
Newmoor Lane (Track)
Throughleys Lane
Seller Hills
New Moor
Acre Farm
South Acre Farm
Jack Plantation
Through Leys
Wh Farm
Bibhills
Airfield
Raceway
Breckstreet Plantation
Breckstreet Farm
Breckstreet Field
Breckstreet Lane
Wood Dike (Drain)
Foss Dike (Drain)
Laytham Park
Laytham Green Farm
Owlethaul Lane (Track)
Lord's Drain
Charity Drain
Charity Land
North Common
Fox Covert
Acre Drain
Ibbb Lane
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 27 26 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
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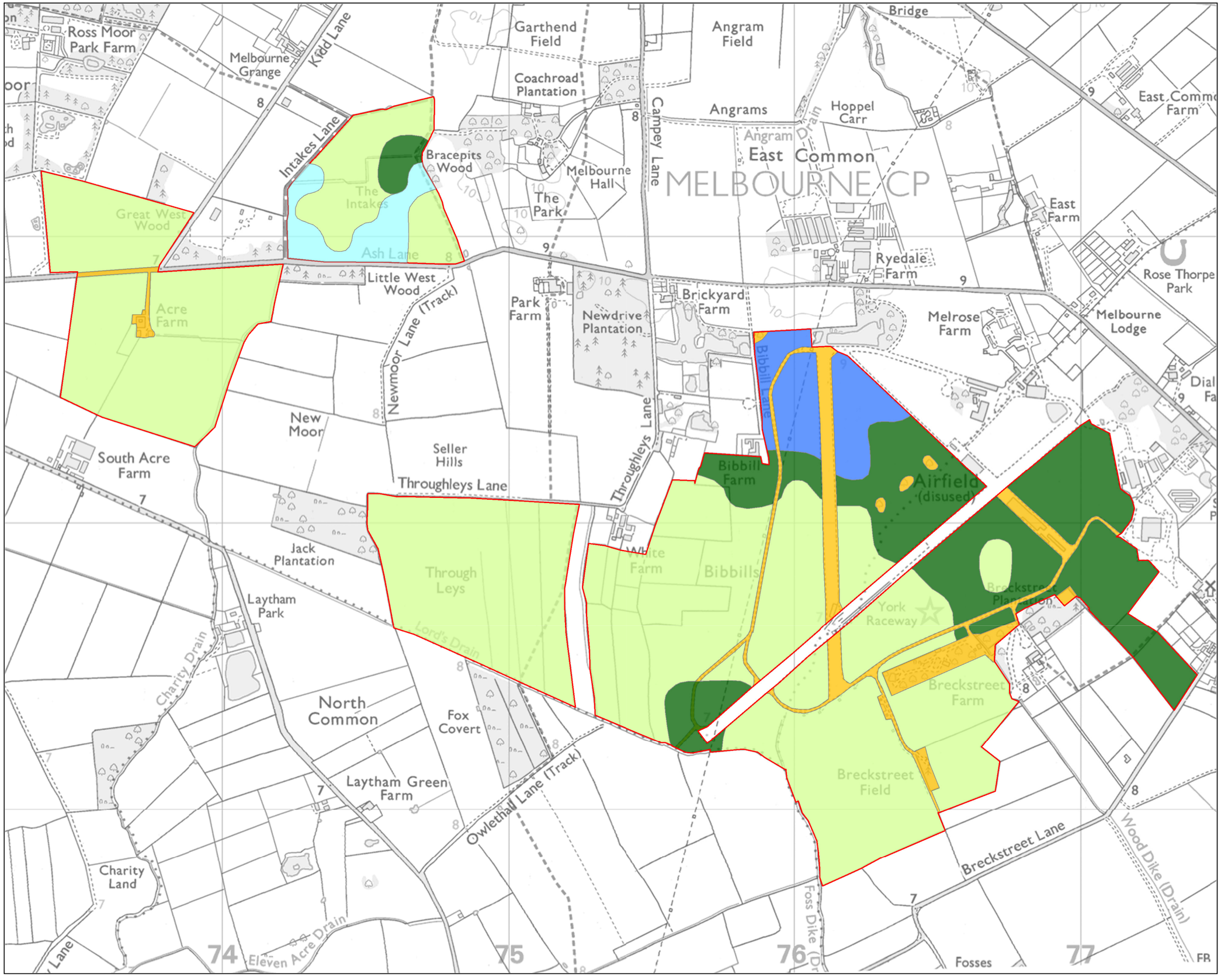
78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96
98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254
198 199 200 201 202 203 204 205



KEY

- Grade 1
- Grade 2
- Subgrade 3a
- Subgrade 3b
- Other land
- Site boundary

Site:

Melbourne

Map title:

MAP 2
Agricultural Land Classification

Land Research ASSOCIATES
Tapton Innovation Centre
Brimington Road
Chesterfield
S41 0TZ
www.lra.co.uk

Date: 06/02/2024

Scale: 1:12,500@A3

SITE:	Melbourne
Location:	57

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	32	MSL		0	1
Subsoil 1	60	LMS	g	0	1
Subsoil 2	120	C	p	0	1
Subsoil 3	120	STOP	m	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	17	1
Subsoil 1 TAv	12	1
Subsoil 1 EAv	9	0.5
Subsoil 2 TAv	13	1
Subsoil 2 EAv	7	0.5
Subsoil 3 TAv	0.1	1
Subsoil 3 EAv	0.1	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	544.0	544.0
Subsoil 1	0.0	0.0
Subsoil 1	336.0	306.0
Subsoil 2	130.0	0.0
Subsoil 2	0.0	420.0
Subsoil 3	0.0	0.0
TOTAL AP (mm)	101	127
MD (mm)	99	107
AP-MD (mm)	2	20

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2	*	*
3a		
3b		
4		

SITE:	Melbourne
Location:	101

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	33	FSZL	m	0	1
Subsoil 1	76	FS	m	0	1
Subsoil 2	120	FS	m	0	1
Subsoil 3	120	STOP	m	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	22	1
Subsoil 1 TAv	14	1
Subsoil 1 EAv	12	0.5
Subsoil 2 TAv	14	1
Subsoil 2 EAv	12	0.5
Subsoil 3 TAv	0.1	1
Subsoil 3 EAv	0.1	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	726.0	726.0
Subsoil 1	518.0	0.0
Subsoil 1	0.0	550.0
Subsoil 2	0.0	0.0
Subsoil 2	0.0	528.0
Subsoil 3	0.0	0.0
TOTAL AP (mm)	124	180
MD (mm)	98	107
AP-MD (mm)	26	73

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1	*	*
2		
3a		
3b		
4		

SITE:	Melbourne
Location:	116

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	30	CL	g	2	1
Subsoil 1	47	SCL	p	0	1
Subsoil 2	120	C	m	0	1
Subsoil 3	120	STOP		0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	18	1
Subsoil 1 TAv	19	1
Subsoil 1 EAv	14	0.5
Subsoil 2 TAv	13	1
Subsoil 2 EAv	7	0.5
Subsoil 3 TAv	0.1	1
Subsoil 3 EAv	0.1	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	529.8	529.8
Subsoil 1	0.0	323.0
Subsoil 1	323.0	0.0
Subsoil 2	299.0	0.0
Subsoil 2	0.0	511.0
Subsoil 3	0.0	0.0
TOTAL AP (mm)	115	136
MD (mm)	98	107
AP-MD (mm)	17	29

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1	*	
2		*
3a		
3b		
4		

SITE:	Melbourne
Location:	226

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	35	LMS	m	0	1
Subsoil 1	58	MS	m	0	1
Subsoil 2	120	MS	m	0	1
Subsoil 3	120	STOP	m	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	13	1
Subsoil 1 TAv	7	1
Subsoil 1 EAv	5	0.5
Subsoil 2 TAv	7	1
Subsoil 2 EAv	5	0.5
Subsoil 3 TAv	0.1	1
Subsoil 3 EAv	0.1	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	455.0	455.0
Subsoil 1	0.0	0.0
Subsoil 1	161.0	145.0
Subsoil 2	84.0	0.0
Subsoil 2	0.0	310.0
Subsoil 3	0.0	0.0
TOTAL AP (mm)	70	91
MD (mm)	98	107
AP-MD (mm)	-28	-16

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2		
3a	*	*
3b		
4		