
Agricultural Land Classification Report

Barratt David Wilson Homes- Bourne, Lincolnshire

Prepared for:

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1. Summary

A Soil and Agricultural Land Classification Survey has been undertaken by James Bairstow of Strutt & Parker on behalf of Barratt David Wilson Homes. The site surveyed is West of Raymond Mays Way, Bourne, Lincolnshire.

The area of land assessed totalled 62.72 ha.

The survey was carried out in September 2023.

The agricultural land on the site has been classified as mainly medium textured clay loam and sandy clay loam topsoil's with a range of drainage capacity subsoils. Due to the soil properties and climactic conditions; a combination of droughtiness and soil wetness class limits the quality of land over the area to **Agricultural Grade 2- 9.45 ha (15%)** and **Agricultural Grade 3a- 47.21 ha (75%)** and **Agricultural Grade 3b- 4.11 ha (7%)**. There is also an area of non-agricultural land made up of tree a tree belt and also a piece of hard standing.

2. Background

Strutt & Parker were instructed by Barratt David Wilson Homes to determine the Agricultural Land Classification (ALC) of an area of land to the West of Bourne, Lincolnshire.

Site Centre Point: Grid Reference TF 08207 19129

This is necessary when determining the climactic conditions of the site. Centre point locations can be found on the survey map in Appendix E.

The land in question covers 62.72 hectares (ha) and is currently in agricultural use (farmed under an arable rotation).

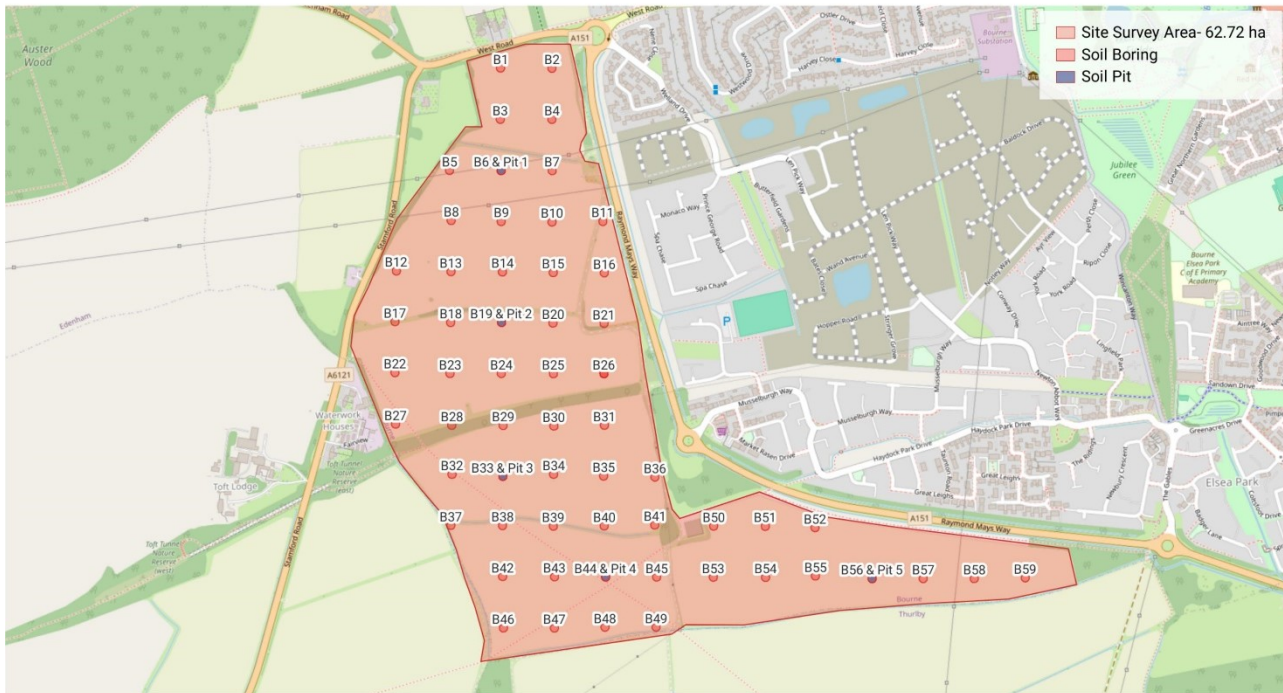
This area shall be known as 'the site' hereon in.

A site plan and study area can be found below in Figure 1.

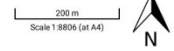
Figure 1- Site Survey Area



**BDW- Bourne, Lincolnshire- ALC
Site Survey Area**



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Published information states the soil predominantly belonging to the Denchworth 712b series- comprising dark greyish brown, slightly stoney clay loams over clayey soils with slowly permeable subsoils and slight seasonal water logging positioned to the West of the site.

There is a secondary soil type found to the East & South of the site belonging to the Curdridge 841a series.

Soil Type 1: Series: 712b Denchworth

Definition

Major soil group:	07 surface-water gley soils	Seasonally waterlogged slowly permeable soils, formed above 3 m O.D. and prominently mottled above 40 cm depth. They have no relatively permeable material starting within and extending below 1 m of the surface.
Soil Group:	1 stagnogley soils	With a distinct topsoil. They are found mainly in lowland Britain.
Soil Subgroup:	2 pelo-stagnogley soils	(clayey)
Soil Series:		swelling clayey material passing to clay or soft mudstone

These soils are typically found to the West of the site.

Soil Type 2: Series: 841a Curdridge

Definition

Major soil group:	08 ground-water gley soils	Seasonally waterlogged soils affected by a shallow fluctuating groundwater-table. They are developed mainly within or over permeable material and have prominently mottled or greyish coloured horizons within 40 cm depth Most occupy low-lying or depressional sites.
Soil Group:	4 argillic gley soils	With a distinct topsoil and a clay-enriched subsoil.
Soil Subgroup:	1 typical argillic gley soils	(with loamy topsoil)
Soil Series:		light loamy material passing to sand or soft sandstone

These Soils are typical found more to the East and South of the site.

A full detailed description of the soil series description and soil type areas can be found Appendix A and Appendix E, including maps, positioning and boundary plans in relation to the site.

Published Pre 1988 Natural England Agricultural Land Classification Maps as shown in Appendix D show the existing grade as ALC Grade 3- with no subgrade.

3. Methodology

Before the site visit, a desktop study of the location and climatological data associated with the land was undertaken. The climate data was obtained from the Met Office publication; Climatological Data for Agricultural Land Classification (1989) and was used to determine overriding site limitations and interactions with soil parameters.

The site visit took place on the 14/09/23 where a total of 59 soil auger borings were extracted to a depth of 120cm (where possible) and 5 examination pits were dug to make a detailed assessment of the soil profile and sub-soil structure. Soil auger boring and soil pit locations were carried out on a 100 x 100 m grid at a density of one per hectare to ensure an unbiased and logical gathering of data. A copy of the location of auger borings and soil pits are shown in Appendix E.

Soil texture was assessed by the consultant carrying out the survey, however, samples were sent for independent laboratory analysis to support the assessment. The results of this analysis are fully detailed in Appendix C.

4. Land Classification

The ALC assessment is undertaken in accordance with the Agricultural Land Classification for England and Wales; Revised Guidelines on Criteria for Grading the Quality of Agricultural Land 1988 and the final grade is determined by the most limiting factor present.

The MAFF Agricultural Land Classification (1988) system splits land into 5 classification grades numbered 1 to 5, with sub-grades allocated to grade 3 (Grade 3a and 3b).

The main limiting factors used in the ALC system, which influence the grade of land are:

- Climatic limitations
- Site limitations
- Soil limitations
- Interactive limitations

4.1 Climatic Conditions

The climatological data for the site has been interpolated from Meteorological Office (1989) data and is shown below in Table 1. It shows the interpolated adjustment for altitude, average annual rainfall, accumulated temperature, field capacity days and the moisture deficit for wheat and potatoes for the site.

Climatological Factor	Units	Value Site TF 08207 19129
Altitude	m	31
Average Annual Rainfall (AAR)	mm	592
Accumulated Temperature (AT0)	day ° C (Jan – Jun)	1415
Field Capacity Days	day	115
Moisture Deficit – Wheat	mm	115
Moisture Deficit - Potatoes	mm	109

Based on the Average Annual Rainfall and Accumulated Temperature, the grade according to climate at this site should be no less than **ALC Grade 1**.

4.2 Site Limitations

The assessment of site factors is primarily concerned with the way in which the topography influences the use of agricultural machinery and hence the potential cropping of the land.

4.2.1 Gradient

This can influence the ALC of a site, due to it affecting the type of machinery which can be safely and efficiently operated. Grades 1 to 3A have a gradient limit of 7 degrees. Grade 3B has a limit of 11 degrees. The gradient of Land at the site does not exceed 7 degrees and therefore, based on gradient this site should be classified no less than **ALC Grade 1**.



Image 1– Topography and Micro-relief of Land at Bourne, Lincolnshire

4.2.2 Micro-relief

Complex changes to slope angle and direction over short distances, or the presence of boulders or rock considerably limits the use of agricultural machinery. The micro-relief across the site is not a limiting factor in assessing the ALC of this site (Image 1).

4.2.3 Flooding

The risk of flooding is minimal and therefore is not a limiting factor when assessing the ALC of this site.

Risk of summer flooding as a frequency would be classed as 'very rare' for a short period of time- therefore maintaining the **ALC Grade at Grade 1**.

4.3 Soil Limitations

A detailed soil quality assessment was made over the site through a 100m x 100m grid (as detailed in Appendix E). 59 auger borings to a depth of 120cm (where possible) were taken and 5 soils pits to a depth of 120cm were dug to observe details around soil quality, drainage capacity and structural composition.

Soils did vary across the site however they could roughly be classed into two main soil groups.

4.3.1 Clay Loam Topsoil over Clay Types Subsoil

These types of soils are of the majority over the site. They are found more Westerly within the site.

A typical observation profile of this type can be seen below:

Boring B26- Appendix B & E

0-33cm	Brown (10YR 5/3) clay loam; slightly stoney; moderately developed single grain structure; firm; non-calcareous; smooth clear boundary to:
33-48cm	Brown (10YR 5/3) clay loam; weakly developed single grain; firm; smooth gradual boundary to:
48-120+ cm	Brown (10YR 5/6) clay; stoneless; weakly developed coarse prismatic structure

These are typically imperfectly draining and of soil wetness class III with a moderate capacity to absorb excess winter rainfall.

4.3.2 Sandy Loam Topsoil over Sandy Clay Loam Types Subsoil

These types of soils are of the majority over the site. They are found more Northerly and Central-Southerly within the site (Block B).

A typical observation profile of this type can be seen below:

Boring B56- Appendix B & E

0-41cm	Brown/dark brown (10YR 5/4) medium sandy loam; slightly stoney; moderately developed single grain structure; firm; non-calcareous; smooth clear boundary to:
41-61cm	Brown (10YR 5/6) medium sandy loam yellowish brown; weakly developed single grain; firm; smooth gradual boundary to:
61-120+ cm	Brown (10YR 5/6) medium sandy loam; weakly developed coarse prismatic structure

These are typically moderately draining and of soil wetness class III with a moderate capacity to absorb excess winter rainfall.

4.3.3 Soil Depth

The depth of soil can be a limiting factor within ALC, however the site had soil depths in excess of 60cm and therefore can be graded no less than **ALC Grade 1**.

4.3.4 Chemical Limitations

Sites can be graded according to chemical limitations however it is not a limiting factor for this site.

4.3.5 Soil Stone Content

Another limiting factor is stoniness, which assesses the percentage (volume) of hard stones in the top 25cm of soil, which can impact on crop growth, cultivations and harvesting.

The Land at Bourne, Lincolnshire however had between 0-5% hard stones >2cm in the top 25cm of soil therefore can be graded no less than **ALC Grade 1**.

4.4 Interactive Limitations

Interactive limitations are the physical limitations which result from interactions between climate, site and soil (MAFF, 1988). Within this, soil wetness, droughtiness, irrigation and soil erosion are assessed.

4.4.1 Soil Wetness

The soil wetness class of the site varies between Wetness Class III. Therefore, the ALC grade based on wetness class, considering that the site has topsoil textures of clay loam, sandy loam and field capacity days of 115 (Table 1), should be no higher than **ALC Grade 2 or ALC Grade 3a or ALC Grade 3b** based on site position. A full breakdown of soil wetness class per auger boring and over the site can be found in Appendix B & E.

4.4.2 Soil Droughtiness

Droughtiness needs to be assessed as available and adequate soil moisture is vital to a crop achieving its full yield potential. Two crops, a shallow and a deep rooting crop are used to provide an average drought risk assessment of the soil. Stoniness of the soil, soil type and soil structure are all used to determine the moisture balance (crop adjusted available water capacity *less* moisture deficit).

Soil droughtiness is calculated on the crops continual demand for moisture throughout the growing season and the capacity of the soil type in order to retain that moisture. Droughtiness is most likely to be a significant limitation to crop growth in areas with relatively low rainfall or high evapotranspiration. The ALC system method to calculate droughtiness is based on work by

Thomasson (1979). This is based on the average soil moisture balance using a) crop-adjusted water capacity of the soil profile and b) moisture deficit.

The soil droughtiness calculations have found to be variable based on soil types, horizon depths and stone content. The area in question is one of very low Average Annual Rainfall for England and therefore drought potential is of real consideration for this ALC.

Moisture balances for Wheat ranged between +28 (ALC Grade 2) and -15 (ALC Grade 3a).

Moisture balances for Potatoes ranged between +7 (ALC Grade 2) and -6 (ALC Grade 2).

Therefore parts of the site can be graded no higher than **ALC Grade 2** whereas other parts of the site can be graded no higher than **ALC Grade 3a** based on this being the most limiting factor. A full breakdown of the grading sites/areas can be found in Appendix B & F.

4.4.3 Soil Erosion

Soil erosion is a factor to consider when grading agricultural land. Given the presence of clay loams and sandy loams, which are not susceptible to wind blow and the sheltering effect of many hedgerows and tree belts; soil erosion is not considered significant enough to downgrade the site.

5. Conclusion

Prior to carrying out this report, the survey site at Bourne, Lincolnshire was classified by Natural England in their pre 1988 Agricultural Land Classification Map as ALC Grade Grade 3 (no sub grade, as shown in Appendix D).

Drawing on the climatological data, site limitations, soil limitations and interactive limitations investigated in the report thus far, the 62.72 ha survey site should receive the following agricultural land classification:

ALC Grade for Land at Bourne, Lincolnshire TF 08207 19129			
ALC Grade	Area (ha)	Area (%)	Limiting Factor
1	-	-	-
2	9.45	15%	Soil Wetness/Droughtiness
3a	47.21	75%	Soil Wetness
3b	4.11	7%	Soil Wetness
4	-	-	-
Non Agricultural	1.96	3%	-

Results Discussion

Grade 2- 'Blue shading on map'

There are 9.45 hectares of Grade 2 soils on the site. This is predominantly made up of sandy loam over varying sandy loam and sandy clay subsoils with a medium texture topsoil. These soils are imperfectly draining and hold wetness class of III.

These soils are generally considered good for cereal production and in some cases root crop production, due to their ability to hold nutrients, establish crops and inherent fertility. However, lower than average rainfall for England here does reduce the viability of root crop production in some areas and supplementary irrigation is generally required to make these crops viable. Therefore droughtiness is also considered in some parts of the Grade 2 area as a limitation along with Soil Wetness Class.

The final ALC grade map for these soils can be found in Appendix F.

Grade 3a- 'Light Green shading on map'

There are 47.21 hectares of Grade 3a soils on the site. This is predominantly made up of clay loams over varying clay subsoils with a medium texture topsoil. These soils are imperfectly draining and hold wetness class of III. Soil Wetness is the limiting factor.

Workability of these types of soils is likely to be restricted to Autumn or Spring cultivations. Coupled with the sites imperfectly draining soils, this limits its Agricultural use mainly to cereal rotation. The relatively dry climate does lend itself to extended agricultural use in the autumn however. The final ALC grade map for these soils can be found in Appendix F.

Grade 3b- 'Dark Green shading on map'

There are 4.11 hectares of Grade 3b soils on the site. This is predominantly made up of clay loams over varying clay subsoils with a heavier textured topsoil. These soils are imperfectly draining and hold wetness class of III. Soil Wetness is the limiting factor.

Workability of these types of soils is likely to be restricted to Autumn or Spring cultivations. Coupled with the sites imperfectly draining soils, this limits its Agricultural use mainly to cereal rotation. The relatively dry climate does lend itself to extended agricultural use in the autumn however. The final ALC grade map for these soils can be found in Appendix F.

Further Remarks

Should the site be developed, these types of soils are very prone to compaction exaggerated with heavy machinery resulting in the soil being even less permeable and therefore a reduced ability to drain. Therefore care would be advised in the use of heavy machinery. If heavy machinery is used, thought should be taken to loosen subsoil compaction before the spreading for topsoil.

Care should be taken in soil selection for landscape use. The imperfectly draining subsoils soils would be poor choice in reclamation of undeveloped areas of the site. The topsoil however would be good quality and should be stored in separate bunds recommended no higher than 3m. In order to protect them as a topsoil resource they should be kept free of vegetation and compaction.

Ideal times for workability for these types of soils should be between April and September and care should be taken to work these soils during and after heavy rainfall.

6. References

Ministry of Agriculture, Fisheries and Food, 1988, Agricultural Land Classification of England and Wales

Meteorological Office, 1989, Climatological Data for Agricultural Land Classification

Munsell Colour Chart

Cranfield University- LandIS- Land Information System

Risk of Flooding from Rivers and Sea: 1:15 000. Environment Agency

Soil Survey Field Handbook. Technical Monograph No.5. Soil Survey of England and Wales 1976.

Soil Map of England and Wales: 1:250 000. Soil Survey of England and Wales.

Butler, B E. Soil Classification for Soil Survey Monographs on Soil Survey (1980) Clarendon Press, Oxford

Soils and Their Use in Eastern England. Soil Survey of England and Wales,

Agricultural Land Classification Map 1:250 000. MAFF 1983.

Geology of Britain Viewer. Reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved

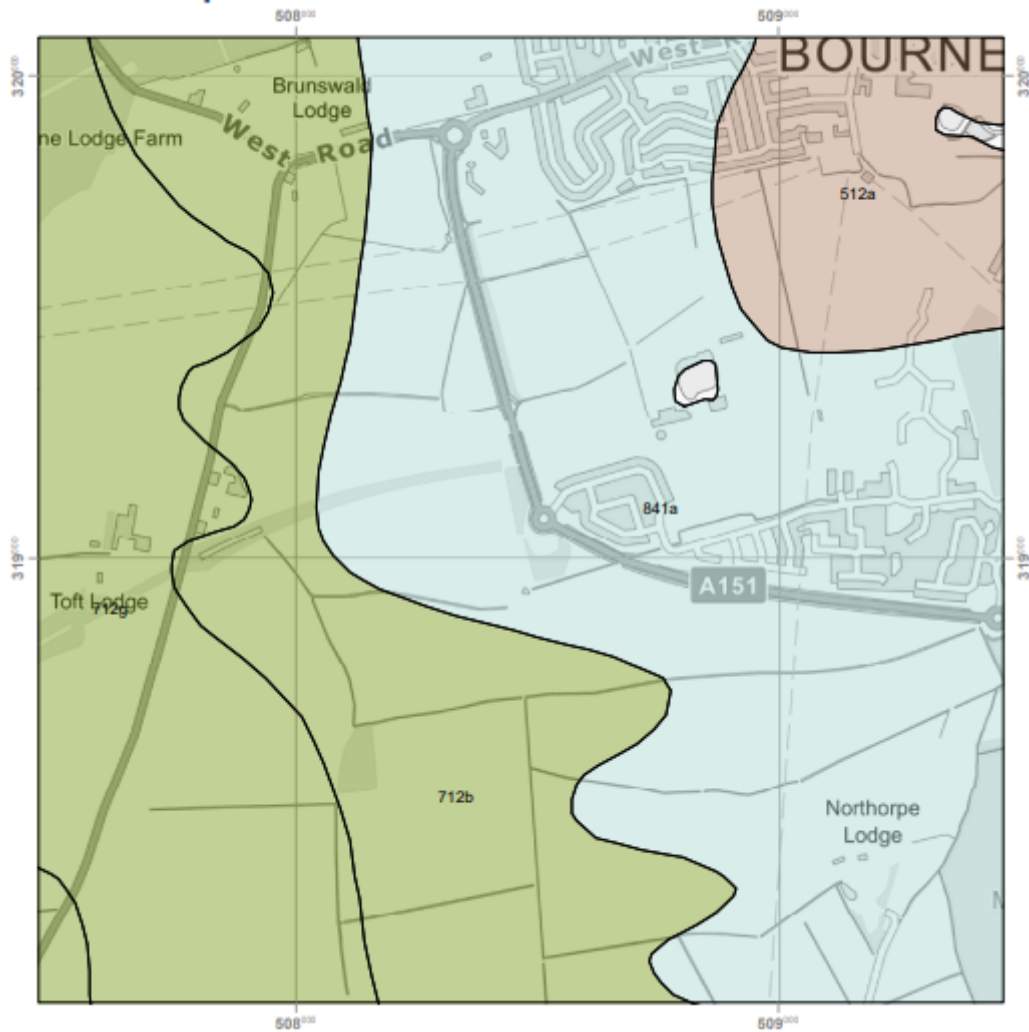
7. Statement of Competence

The agent carrying out the report is JWE Bairstow BSc (Hons). He holds a second class, upper division honours degree from Harper Adams University, Shropshire. He graduated in 2008, managed two 4000 ha farming businesses from 2009-2021 and joined Strutt & Parker in 2021. He specialises in land use management and advises private clients on the profitable and sustainable operational practice of their land. He farms in his own right on a 300 acre grassland farm on the edge of the Yorkshire Dales. He is a fully qualified agronomist (holding both FACTS and BASIS qualifications).

He is qualified through the British Association of Soil Scientists to carry out Agricultural Land Classification Surveys and has acted for a number of high profile clients in these matters. His academic credentials and experience in the industry with this particular field makes him more than suitably qualified to prepare this report.

Appendix A- Soil Series Information

1a Soils - Spatial Distribution



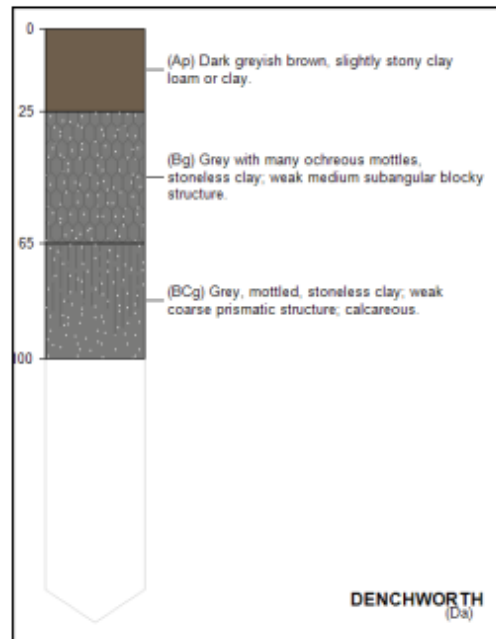
Soils - Spatial Distribution Key

-  **512a ASWARBY**
Shallow permeable calcareous fine loamy soils over limestone, some affected by groundwater.
-  **712b DENCHWORTH**
Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.
-  **712g RAGDALE**
Slowly permeable seasonally waterlogged clayey and fine loamy over clayey soils.
-  **841a Curdridge**
Deep stoneless permeable coarse loamy soils with groundwater controlled by ditches.

DENCHWORTH (712b)

Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils.

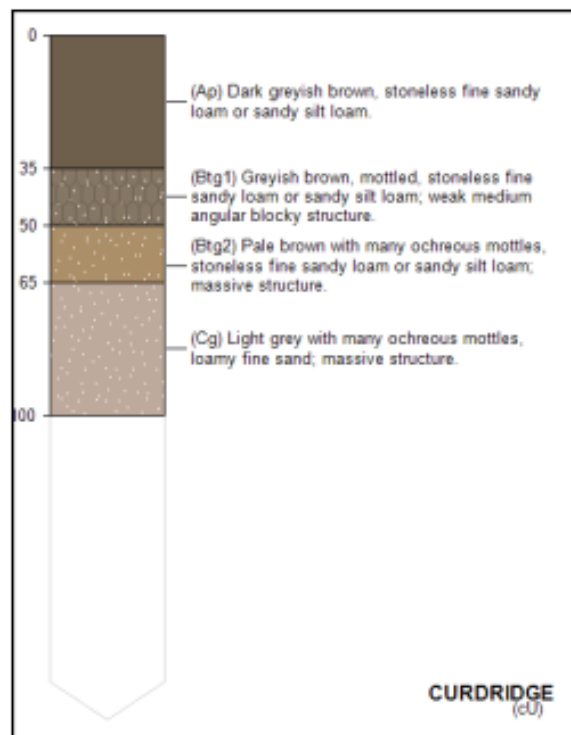
d. DENCHWORTH Component Series Profiles



Curdrige (841a)

Deep stoneless permeable coarse loamy soils with groundwater controlled by ditches.

d. Curdrige Component Series Profiles



Appendix B- Auger Boring and Soil Pit Information including Wetness & Droughtiness Assessment

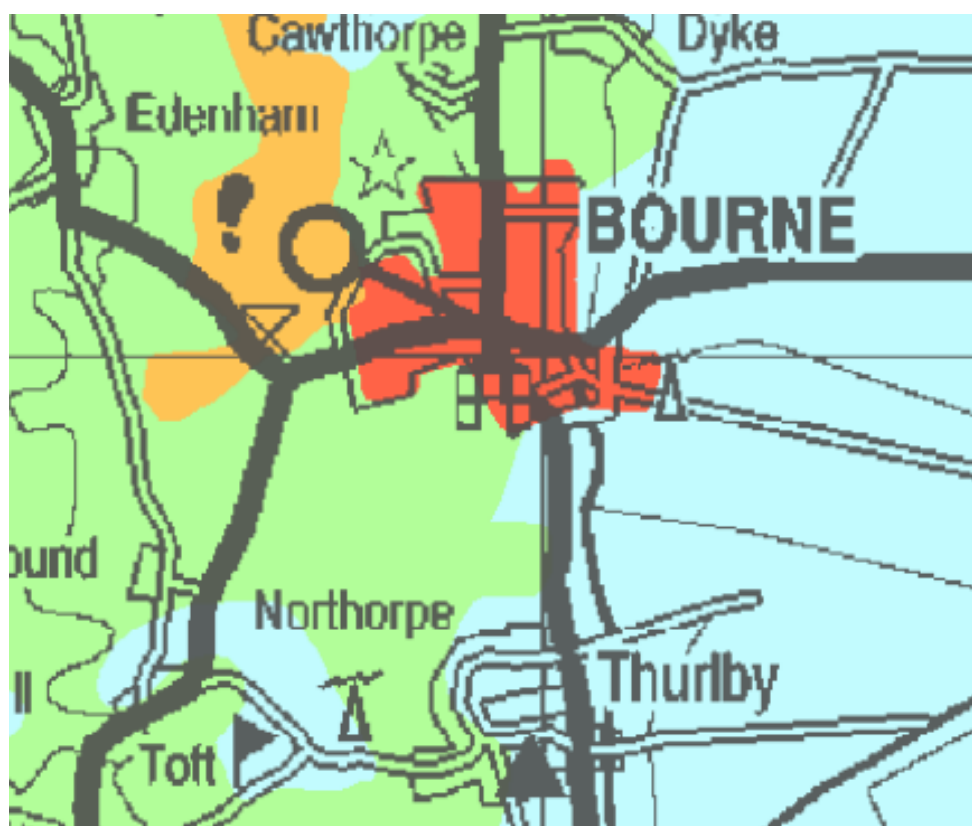
Boring /Pit (m)	Grid (m)	Horizon (m)	Horizon Thickness for Droughtiness Calculations	Texture	Calcium	Colour	Matter % (ppm)	Stones %	Stones Type	Structure	SP depth (cm)	Clayey depth (cm)	SVF Soil wetness class	Grate le (wetness)	Tw (total moisture re)	Fav (total moisture re)	STAV (stone total avail)	STAV (stone total avail)	MBW	Grate (Drought WHEAT)	Grate (Drought ROTATIES)		
To 50																							
B1	<7	1	32	0	32 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	50	50	III	3a	18	16	10	1	0.5	18	2	1	2
		2	50	18	0	18 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	50	50	III	3a	16	10	1	0.5	16	2	1	2	
		3	120	0	0 CL	N/A	10R 5/6	**	0.00 -	poor			III		13	7	0	0	0				
B2	<7	1	33	0	33 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	50	50	III	3a	18	16	10	1	0.5	18	2	1	2
		2	50	0	0 CL	N/A	10R 5/3	*	0.00 -	moderate	50	50	III	3a	16	10	1	0.5	16	2	1	2	
		3	120	0	0 CL	N/A	10R 5/6	**	0.00 -	poor			III		13	7	0	0	0				
B3	<7	1	33	0	33 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	40	40	III	3a	18	16	10	1	0.5	15	2	2	2
		2	40	7	0	0 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	40	40	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	10	70	30 C	N/A	10R 5/6	0.00 -	poor			III		13	7	0	0	0				
B4	<7	1	34	0	34 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	56	56	III	3a	18	16	10	1	0.5	20	2	3	2
		2	56	16	6	22 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	56	56	III	3a	16	10	1	0.5	16	2	3	2	
		3	120	0	0 CL	N/A	10R 5/6	**	0.00 -	poor			III		13	7	0	0	0				
B5	<7	1	35	0	35 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	49	49	III	3a	18	16	10	1	0.5	18	2	1	2
		2	49	0	0 CL	N/A	10R 5/3	*	0.00 -	moderate	49	49	III	3a	16	10	1	0.5	16	2	1	2	
		3	120	1	70	21 C	N/A	10R 5/6	0.00 -	poor			III		13	7	0	0	0				
B6/Pit 1	<7	1	30	0	30 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	56	56	III	3a	18	16	10	1	0.5	26	2	-1	2
		2	56	20	6	26 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	56	56	III	3a	16	10	1	0.5	16	2	0	2	
		3	120	0	0 CL	N/A	10R 5/6	*	0.00 -	poor			III		11	8	0	0	0				
B7	<7	1	28	0	28 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	58	58	III	3a	18	16	10	1	0.5	26	2	0	2
		2	58	0	0 CL	N/A	10R 5/3	*	0.00 -	moderate	58	58	III	3a	16	10	1	0.5	16	2	0	2	
		3	120	0	0 CL	N/A	10R 5/6	*	0.00 -	poor			III		11	8	0	0	0				
B8	<7	1	28	22	9	28 CL	N	10R 5/3	5.00 All hard rocks or stones (le Those w-	moderate	59	59	III	3a	18	16	10	1	0.5	-23	3b	-11	3a
		2	59	0	0 CL	N/A	10R 5/3	*	0.00 -	poor			III		12	7	0	0	0				
		3	120	0	61	11 CL	N/A	10R 5/6	0.00 -	poor			III		0	0	0	0	0				
B9	<7	1	35	0	35 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	60	60	III	3a	18	16	10	1	0.5	27	2	2	2
		2	60	15	10	25 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	60	60	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	0 CL	N/A	10R 5/6	*	0.00 -	poor			III		11	8	0	0	0				
B10	<7	1	38	0	38 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	65	65	III	3a	18	16	10	1	0.5	27	2	2	2
		2	60	0	0 CL	N/A	10R 5/3	*	0.00 -	moderate	60	60	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	60	10 MS	N/A	10R 5/6	0.00 -	poor			III		11	8	0	0	0				
B11	<7	1	33	0	33 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	48	48	III	3a	18	16	10	1	0.5	23	2	6	2
		2	48	15	0	0 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	48	48	III	3a	16	10	1	0.5	16	2	0	2	
		3	120	0	55	5 C	N/A	10R 5/6	0.00 -	poor			III		13	7	0	0	0				
B12	<7	1	35	0	35 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	55	55	III	3a	18	16	10	1	0.5	24	2	-4	2
		2	55	5	0 CL	N/A	10R 5/3	No	0.00 All hard rocks or stones (le Those w-	moderate	55	55	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	65	15 CL	N/A	10R 5/6	0.00 -	poor			III		12	7	0	0	0				
B13	<7	1	35	0	35 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	66	66	III	3a	18	16	10	1	0.5	-26	3b	-17	3a
		2	66	15	16	31 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	66	66	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	0 CL	N/A	10R 5/6	*	0.00 -	poor			III		11	8	0	0	0				
B14	<7	1	36	0	36 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	65	65	III	3a	18	16	10	1	0.5	28	2	5	2
		2	66	15	29 CL	N/A	10R 5/3	No	0.00 All hard rocks or stones (le Those w-	moderate	65	65	III	3a	16	10	1	0.5	16	2	0	2	
		3	120	0	5	5 MS	N/A	10R 5/6	0.00 -	poor			III		11	8	0	0	0				
B15	<7	1	31	0	31 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	64	64	III	3a	18	16	10	1	0.5	28	2	5	2
		2	64	10	33 CL	N/A	10R 5/3	No	0.00 All hard rocks or stones (le Those w-	moderate	64	64	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	6	6 MS	N/A	10R 5/6	0.00 -	poor			III		11	8	0	0	0				
B16	<7	1	35	0	35 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	60	60	III	3a	18	16	10	1	0.5	27	2	4	2
		2	60	15	10	25 CL	N/A	10R 5/3	0.00 All hard rocks or stones (le Those w-	moderate	60	60	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	0 CL	N/A	10R 5/6	*	0.00 -	poor			III		11	8	0	0	0				
B17	<7	1	31	0	31 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	45	45	III	3a	18	16	10	1	0.5	27	2	2	2
		2	45	0	0 CL	N/A	10R 5/3	No	0.00 All hard rocks or stones (le Those w-	moderate	45	45	III	3a	16	10	1	0.5	16	2	2	2	
		3	120	0	60	10 MS	N/A	10R 5/6	0.00 -	poor			III		11	8	0	0	0				
B18	<7	1	34	0	34 MS	N	10R 5/6	No	5.00 All hard rocks or stones (le Those w-	moderate	55	55	III	3a	18	16	10	1	0.5	22	3a	-6	2
		2	55	5	21 MS	N/A	10R 5/3	No	0.00 All hard rocks or stones (le Those w-	moderate	55	55	III	3a	16	10	1	0.5	16	2	0	2	
		3	120	0	65	15 MS	N/A	10R 5/6	0.00 -	poor			III		11	8	0	0	0				
B19/Pit 2	<7	1	37	0	37 CL	N	10R 5/3	No	5.00 All hard rocks or stones (le Those w-	moderate	62	62	III	3a	18	16	10	1	0.5	22	3a	-6	2
		2	62	13	0 CL	N/A	10R 5/3	No	0.00 All hard rocks or stones (le Those w-	moderate	62	62	III	3a	16	10	1	0.5	16	2	0	2	
		3	120	0	8 CL	N/A	10R 5/6	**	0.00 -	poor			III		12	7	0	0	0				

B41	<7	1	42	0	42	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	60	60	18	1	0.5	22	5	2
B42	<7	1	42	0	42	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	60	60	18	1	0.5	22	5	2
B43	<7	1	35	0	35	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	45	45	18	1	0.5	26	2	2
B44	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	50	50	18	1	0.5	19	2	2
B45	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	55	55	18	1	0.5	19	2	2
B46	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	60	60	18	1	0.5	21	2	2
B47	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	56	56	18	1	0.5	19	2	2
B48	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	86	86	18	1	0.5	31	1	9
B49	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	53	53	18	1	0.5	19	2	2
B50	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	60	60	18	1	0.5	17	2	3
B51	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	56	56	18	1	0.5	15	1	4
B52	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	61	61	18	1	0.5	18	2	0
B53	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	60	60	18	1	0.5	22	2	5
B54	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	62	62	18	1	0.5	22	2	5
B55	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	61	61	18	1	0.5	18	2	1
B56	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	61	61	18	1	0.5	24	2	3
B57	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	65	65	18	1	0.5	25	2	0
B58	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	61	61	18	1	0.5	28	2	1
B59	<7	1	32	0	32	N	10N 5/3	No	5.00 All hard rock or stones (1.e.those w moderate	56	56	18	1	0.5	15	1	0

Appendix C – Soil Laboratory Test Results

ANALYTICAL REPORT													
Report Number	97869-23			H 39		JAMES BAIRSTOW							
Date Received	27-OCT-2023			STRUTT & PARKER LLP									
Date Reported	02-NOV-2023			5 SOUTH VIEW									
Project	SOIL			TINWELL ROAD									
Reference	JAMES BAIRSTOW			STAMFORD									
Order Number				LINCOLNSHIRE PE9 2UL									
Laboratory Reference	SOIL 660837	SOIL 660838	SOIL 660839	SOIL 660840	SOIL 660841	SOIL 660842	SOIL 660843	SOIL 660844	SOIL 660845	SOIL 660846			
Sample Reference	PIT 1 TOPS	PIT 1 SUBS	PIT 2 TOPS	PIT 2 SUBS	PIT 3 TOPS	PIT 3 SUBS	PIT 4 TOPS	PIT 4 SUBS	PIT 5 TOPS	PIT 5 SUBS			
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Textural Class		Clay Loam	Sandy Loam	Sandy Loam	Sandy Loam	Clay	Clay	Clay Loam	Clay	Sandy Loam	Sandy Loam		
Sand 2.00-0.063mm	% w/w	49	67	52	73	26	5	34	19	55	67		
Silt 0.063-0.002mm	% w/w	30	15	32	15	36	31	40	41	30	19		
Clay <0.002mm	% w/w	21	18	16	12	38	64	26	40	15	14		
Notes													
Analysis Notes													
The sample submitted was of adequate size to complete all analysis requested.													
The results as reported relate only to the item(s) submitted for testing.													
The results are presented on a dry matter basis unless otherwise stipulated.													
This test report shall not be reproduced, except in full, without the written approval of the laboratory.													
Document Control													
Reported by													
Teresa Clyne													
Natural Resource Management, a trading division of Cawood Scientific Ltd.													
Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS													
Tel: 01344 886338													
Fax: 01344 890972													
email: enquires@rmm.uk.com													

Appendix D– Pre-1988 Agricultural Land Classification Map of Land at Bourne, Lincolnshire

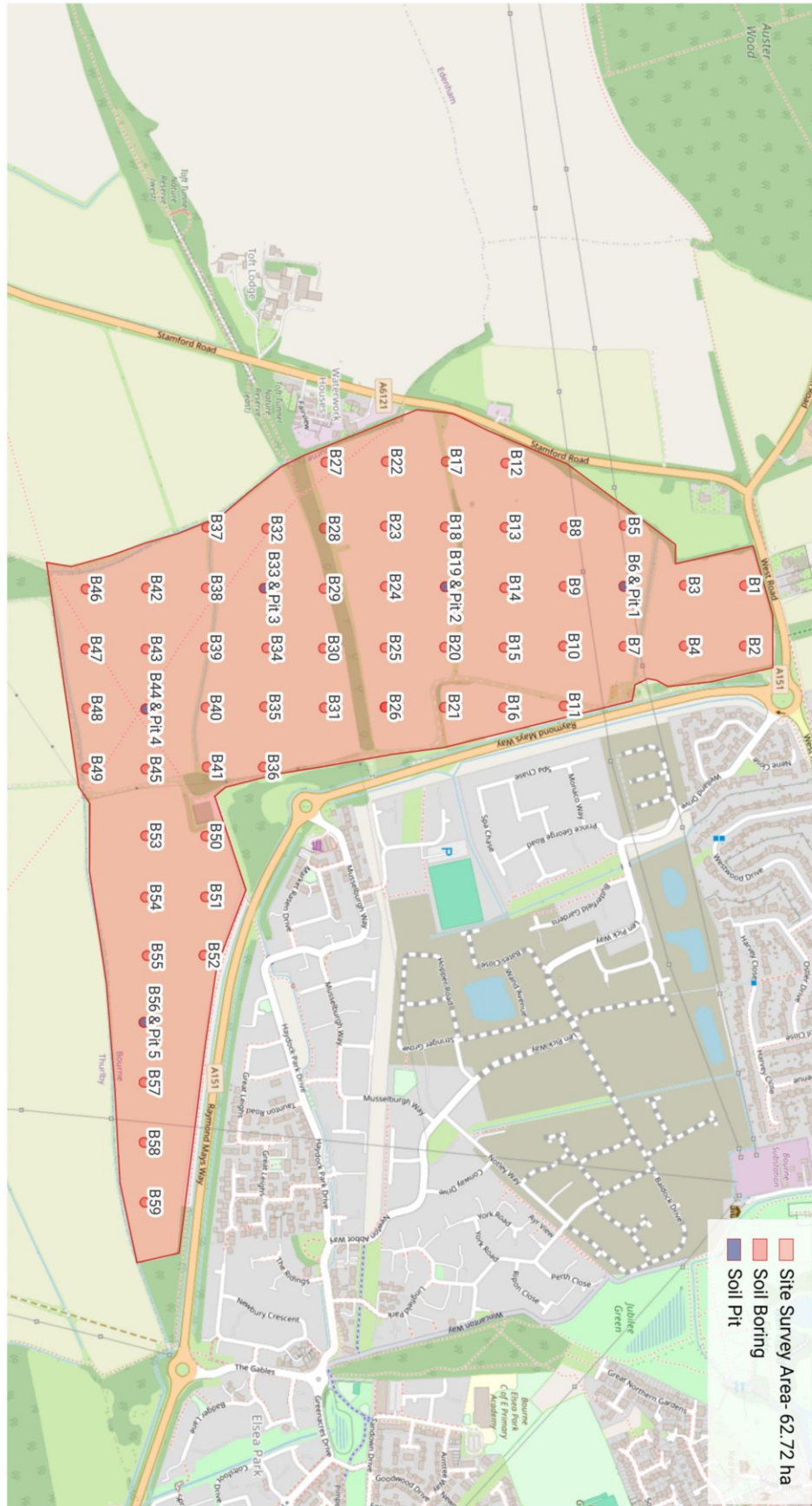


<u>Grade</u>	<u>Description</u>
1	Excellent
2	Very Good
3	Good to Moderate
4	Poor
5	Very Poor

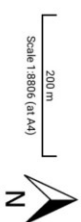
Non-Agricultural Land

	Other land primarily in non-agricultural use
	Land predominantly in urban use

BDW- Bourne, Lincolnshire- ALC Site Survey Area



Produced on Dec 4, 2023
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STRUTT
& PARKER

BHP PARIBAS GROUP



200 m

Scale 1:806 (at A4)



Soil Site Report

Soil Report



BDW- Bourne, Lincolnshire

Easting: 508466

Northing: 319080

Site Area: 2km x 2km

Prepared for: James Bairstow, Strutt and Parker

Date: 27 Nov 2023

