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Our Ref: P9697/CEP/MRA-2  
Date: 29<sup>th</sup> April 2021

Catesby Estates PLC  
Arena Business Centre  
First Floor, The Square  
Basing View  
Basingstoke  
RG21 4EB  
**By email only**

Dear Sirs,

**Re: Mineral Assessment – Moat Road, Headcorn, Kent TN27 9NT**

**Introduction**

GRM Development Solutions Limited (GRM) has been instructed by Catesby Estates Plc to produce a Mineral Assessment (MA) for a proposed residential development at Moat Road, Headcorn.

The purpose of the report is to determine the presence of valuable mineral resources below the site and the viability of extraction prior to development.

Published information that has been consulted in the production of this MRA is listed below:

- Kent Minerals and Waste Local Plan (KMWLP), 2013-30, Adopted September 2020.
- KMWLP – Maidstone Borough Council - Mineral Safeguarding Areas (MSA).
- Kent County Council, Updated Mineral and Waste Safeguarding Supplementary Planning Document, March 2021.
- BGS Mineral Resource Information Report in Support of National, Regional and Local Planning – Kent (comprising Kent, Medway and London Boroughs of Bexley and Bromley), 2002.
- BGS Mineral Resource Map for Kent (comprising Kent, Medway and London Boroughs of Bexley and Bromley), 1:100,000 scale.
- Internet and archive research referenced within text.



**Land Appraisal | Environmental | Geotechnical | Design | Mining | Inspections**

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## General Site Description, Brief History and Geological Settings

### Location

The site, where it is proposed to development new homes along with a range of community facilities, is located on the western boundary of Headcorn some 17km from Ashford town centre and may be generally located by Grid Reference TQ 827 444. A Site Location and Boundary Plan is included in Appendix A. An outline development plan has not been provided at this time.

### Site Description

The site currently comprises three parcels of land, an agricultural field in the north, a smaller parcel of agricultural land in the southwest and the buildings and domestic areas around Moat Farm in the southeast. The northern field occupies an area of some 4.357ha and is bound in the east by existing residential properties of Headcorn on the western side of Mill Bank, a residential development under construction to the north and Black Mill Farm buildings to the west. The south western agricultural parcel occupies an area of some 1.967ha and is bound by agricultural land and an electricity distribution site to the west, Moat Farm to the east and Moat Road to the south, whilst the buildings of Moat Farm in the south eastern corner occupy an area of some 0.849ha.

### Historical Findings

A review of readily available online historical mapping and historical aerial photography (Google Earth Pro), indicates that the site has remained relatively unchanged from 1889 to the present day, apart from the appearance of a square shaped boundary/excavation approximately 14.5m by 14.5m, 210m<sup>2</sup>, on the eastern part of the northern field, present between circa 1960 and 1981-85. The boundary/excavation is not labeled throughout the map history and its purpose is unclear. The approximate location of the boundary/excavation is shown on the Site Features Plan and Historical Aerial Photograph provided in Appendix B.

In the surrounding area the electricity distribution site was also apparent on the 1960 aerial photograph, the residential housing to the east present by 1990 and the new development under construction to the north present by 2018.

Historical maps contained within a Desk Study report for the new development to the north of the subject site, available on the Maidstone Planning Portal (planning ref. 15\_507424\_OUT), have been reviewed as part of this report. These sources indicate that the boundary/excavation appears on historical maps 1969-70 and 1970-71. The environmental data within this desk study report also provides an assessment of the likelihood of mining, extraction and natural cavities within 500m of the report site, and was given as rare, but that localised small scale mining of Iron Ore may have occurred. The report data also confirmed that no quarries or mineral pits had been present in proximity to the site, apart from a group of historical pits some 500m northeast, Hazel Pits, which are mapped as Saw Pits and used historically during the production of timbers for ship building.

## **BGS Geological Mapping**

British Geological Society (BGS) 1:50,000 geological Solid and Drift Map No 288, Maidstone, published 1976 indicates the site to be underlain by the Weald Clay Formation, comprising dark grey thinly-bedded mudstones (shales) and mudstones with subordinate siltstones, fine- to medium-grained sandstones, including calcareous sandstone (e.g. Horsham Stone Member), shelly limestones (the so called "Paludina Limestones") and clay ironstones, with the southern c. 60% of the site underlain by mudstone and the northern c. 40% of the site underlain by limestone.

## **BGS Boreholes and Ground Investigations in the Public Domain**

There are no BGS boreholes in proximity of the site which are located within the same geological sequence. However a ground investigation centred around National Grid Reference TQ826452, available on the Maidstone Planning Portal, undertaken on the northern periphery of the potential limestone outcrop, encountered the Weald Clay Formation. The stratum generally comprised firm brown and grey becoming firm to very stiff reddish brown silty to very silty clay with subordinate beds of silt and rare reddish brown mudstone to 4m below ground level (bgl). Deposits of limestone were not encountered and dynamic cone penetrometer tests were able to penetrate to depths of up to 8.5m bgl suggesting no hard (limestone) layers were present.

## **BGS Mineral Resource Information for Kent**

The following deposits are indicated as being of potential importance by the BGS and are shown on the BGS Resource Map for Kent provided in Appendix C.

### **Weald Clay - Limestone**

Described as thin fossiliferous limestone beds within the Lower Cretaceous Weald Clay Formation, known variously as small and large 'Paludina' limestones or 'Bethersden' and 'Sussex Marbles', which were once the basis of an important decorative stone/paving industry, but are no longer quarried.

### **Other Web-based Information on the Paludina limestone**

The Weald Clay succession also includes a number of thin, fossiliferous limestones which formed part of a once locally important decorative stone industry similar to the Purbeck Marble industry of Dorset, though on a much smaller scale. These fossiliferous limestones were quarried at a large number of small pits across the Weald Clay outcrop and consequently have a variety of local 'trade' names including Sussex Marble, Bethersden Marble, Petworth Marble, Laughton Stone and Charlwood Stone. It has been claimed that at Kirdford, slabs of the marble up to 0.9m thick and 2.1m long have been extracted in the distant past. Commonly, however, the limestones are rarely more than 0.15m thick. The limestones range from shell fragmental types in which much of the shell debris is broken and fragmented to the units that include abundant uncompact, whole gastropod shells. The latter limestones were usually the ones preferred for marble production. Core.ac.uk, accessed on 30.04.2021.

Paludina Limestone is a rock made up almost entirely of fossils. This is found in beds in the Weald Clay in the Weald of Kent, Sussex and Surrey. Laid down during the Cretaceous Period, this is a fossil gastropod that lived in shallow freshwater lakes and marshes. The rock takes a high polish and has been used in churches and other buildings in decorative work. The shells also contain calcite crystals that show up well when the stone is polished up. There is a step at Thakeham on the way up to the church. Flagstones and steps are a common place to see these stones in use and there is a lot at this location along with many places locally. Blipfoto accessed on 30.04.21.

As the material is not in regular supply, much restoration of earlier Sussex Marble work takes place using Purbeck Marble from Dorset, which is considered a more stable stone. An example of this practice occurred as early as 1870, when the font, at St Margaret's Church in West Hoathly had to be restored but the original Sussex Marble, quarried in Petworth, had run out (ref. Hannah, Ian C. (1935). "West Hoathly Church". Sussex Archaeological Collections. Oxford: Sussex Archaeological Society/Oxford University Press. 35: 203). The industry and workings are long gone although small new rural development around the Surrey/Sussex border occasionally brings up new seams of the stone.

Whilst currently the Limestone has no economic use it is used by some artists for its aesthetic qualities.

### **Kent Minerals and Waste Local Plan (KMWLP), 2013-30, Adopted September 2020**

The Kent Minerals and Waste Local Plan Policy CSM 5, Land-won Mineral Safeguarding, identifies known areas of specific mineral resources that are, or may in the future, be of sufficient economic value to warrant protection for future generations. The Policy Map for Maidstone covering the subject site is provided in Appendix D and indicates that the northern part of the site, c. 40% of the area is within an MSA for Limestone.

Policy DM7 – Safeguarding Mineral Resources, states that planning permission will only be granted for non-mineral development that is incompatible with minerals safeguarding, where it is demonstrated that either:

1. The mineral is not of economic value or does not exist.
2. That extraction of the mineral would not be viable or practicable.
3. The mineral can be extracted satisfactorily, having regard to Policy DM9, prior to the non-minerals development taking place without adversely affecting the viability or deliverability of the non-mineral development.
4. Material considerations indicate that the need for the development overrides the presumption for mineral safeguarding such that sterilisation of the mineral can be permitted following the exploration of opportunities for prior extraction.

Therefore, in line with the requirements of the KMWLP the above scenarios have been considered within this Mineral Assessment report.

It is considered that the proposed development does not conform to the following additional exemptions and no further consideration will be given to these:

5. The development is of a temporary nature.
6. It constitutes development that is exempt from mineral safeguarding policy.
7. It constitutes development on a site allocated in the adopted development plan.

Policy DM9 – Prior Extraction of Minerals in Advance of Surface Development states that when development is proposed within an MSA, promoters will be encouraged to extract the mineral in advance of the main development. Policy DM9 aims to manage situations where built development located on a safeguarded mineral resource is to be permitted, so as to avoid the needless sterilisation of economic mineral resources.

Planning permission for, or incorporating, mineral extraction in advance of development will be granted where the resources would otherwise be permanently sterilised provided that:

- The mineral extraction operations are only for a temporary period; and
- The proposal will not cause unacceptable adverse impacts to the environment or communities.

## Summary

This assessment has been based entirely on information gathered from the desk top resources indicated and no intrusive investigation has been undertaken to confirm these findings.

It has been shown that part of the subject site does fall within an MSA of the KMWLP, development of which has the potential to sterilise a small quantity of the Weald Clay – Limestone (Paludina).

Historical aerial photographs and maps have shown an unknown square shaped boundary/excavation in the northern part of the site, the purpose of which is unclear though may have been a test excavation, small scale extraction or for agricultural purposes. Apart from which a review of the historical data, readily available in the public domain, has shown no mineral extraction/quarrying to have taken place locally.

The BGS Resource Report and Map, together with web based research, indicates the 'Paludina' limestones are rarely more than 0.15m thick and were once locally important in the decorative stone industry but as the material is not in regular supply anymore restoration works have now taken place using the Purbeck Marble, which is considered a more stable limestone. Apart from as a decorative material the 'Paludina' limestones appear to have no importance as a construction material.

Since there is not a defined economic value the tonnage calculations that follow are somewhat academic, but add weight to the final conclusion of this assessment. Any extraction prior to commencement of the development, undertaken in accordance with Policy DM9 above, will be limited by the site boundary conditions, being the existing and under construction residential properties to the east, west and north. An approximation of the area available for extraction is c. 30150m<sup>2</sup>, which might yield a general tonnage of 11800t, assuming a 0.15m thick bed of material and a typical density for marble of 2.6Mg/m<sup>3</sup>. Quarrying of better quality Limestones (i.e. Purbeck) create about 50% wastage and the thin bedding and character of this Limestone could increase the wastage considerably to maybe 75% (not far short of the 95% of slate quarrying). So realistically a tonnage of 3000t is more likely and far from economic to extract.

## Conclusion

These findings suggest that the mineral identified within the MSA, 'Paludina' limestones, is of little current use and extraction prior to development, given the limit area available and confining boundary conditions, would not be a viable proposition for a commercial quarry.

Therefore, for the reasons outlined above, and in accordance with requirements 1. and 2. of Policy DM7, there is considered to be no merit in the commercial extraction of the mineral prior to development.

We trust this is suitable for your current requirements, should you require any further information or need clarification of any of the points raised please do not hesitate to contact us.

Yours sincerely,  
for GRM Development Solutions Ltd

**Deborah Ashton (Mrs)**  
**BSc (Hons), MSc, CGeol FGS RoGEP**

A handwritten signature in black ink, appearing to read 'Deborah Ashton', written in a cursive style.

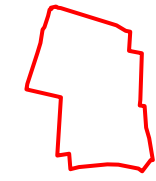
**Dr W S Peacock**  
**BSc (Hons), MSc, PhD, CGeol FGS**

Appendix A - Site Location and Boundary Plan  
Appendix B - Site Features Plan  
Appendix C - BGS Mineral Resources Map - Kent  
Appendix D - Maidstone Policies Map 9 - Mineral Safe Guarding Areas

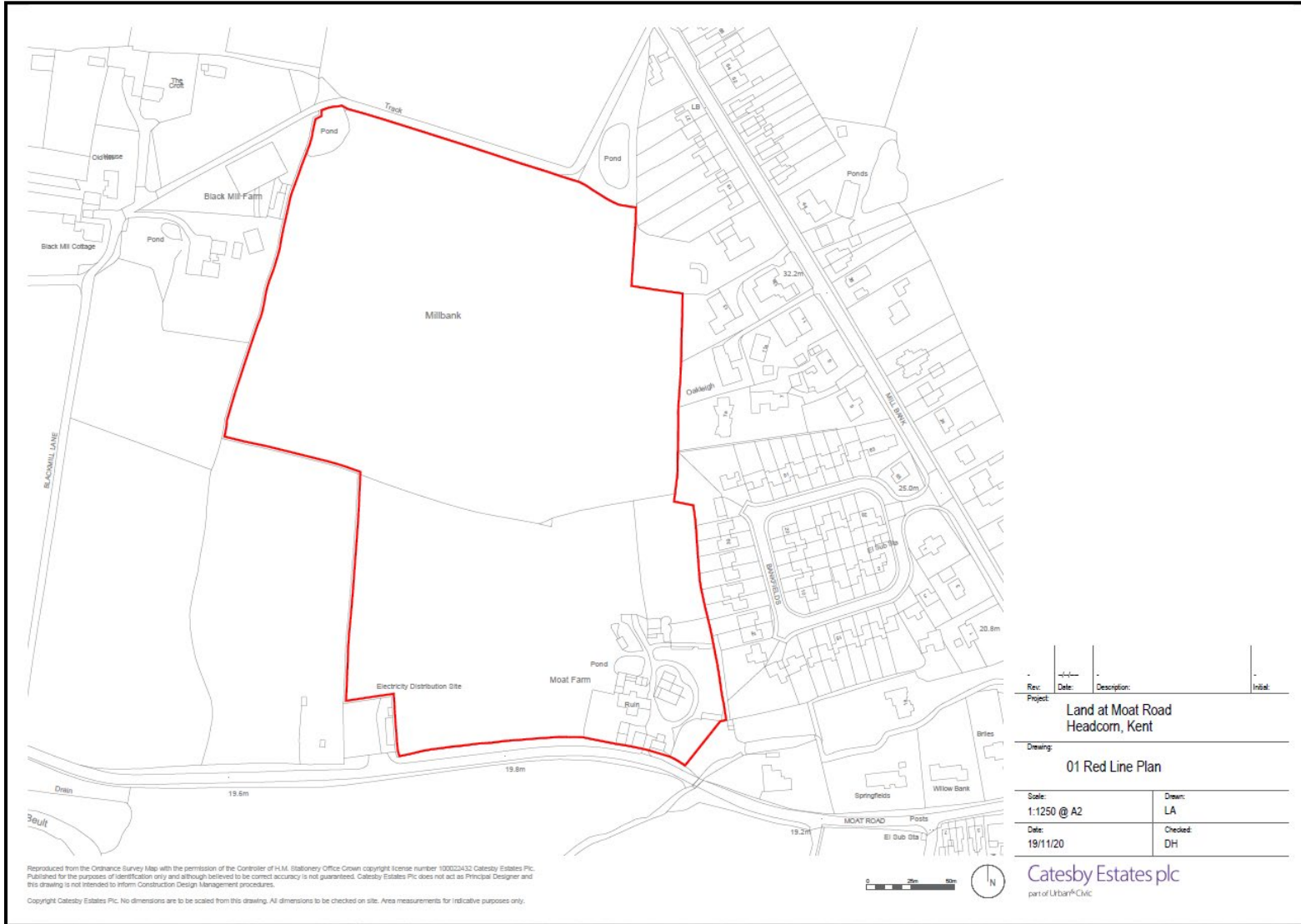


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NOTES:



**Approximate Site Boundary**



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Rev:	Date:	Description:	Initia:

Project: Land at Moat Road Headcorn, Kent

Drawing: 01 Red Line Plan

Scale: 1:1250 @ A2	Drawn: LA
Date: 19/11/20	Checked: DH

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CLIENT:  
**Catesby Estates Plc**

PROJECT:  
**Moat Road, Headcorn**

TITLE:  
**Site Location and Boundary Plan**

SCALE@SIZE : NTS	ISSUE: FINAL
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DESIGN/DRAWN by :	DATE: April, 2021
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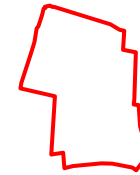
PROJECT No: P9697	DRAWING No: Appendix A
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**Catesby Estates Plc**

PROJECT:

**Moat Road, Headcorn**

TITLE:

**Site Features Plan**

SCALE@SIZE :

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ISSUE:

FINAL

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DATE:

April, 2021

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P9697

DRAWING No:

Appendix B

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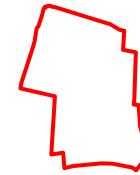
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PROJECT:

**Moat Road, Headcorn**

TITLE:

**Historical Photograph Extract**

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DATE:

April, 2021

PROJECT No:

P9697

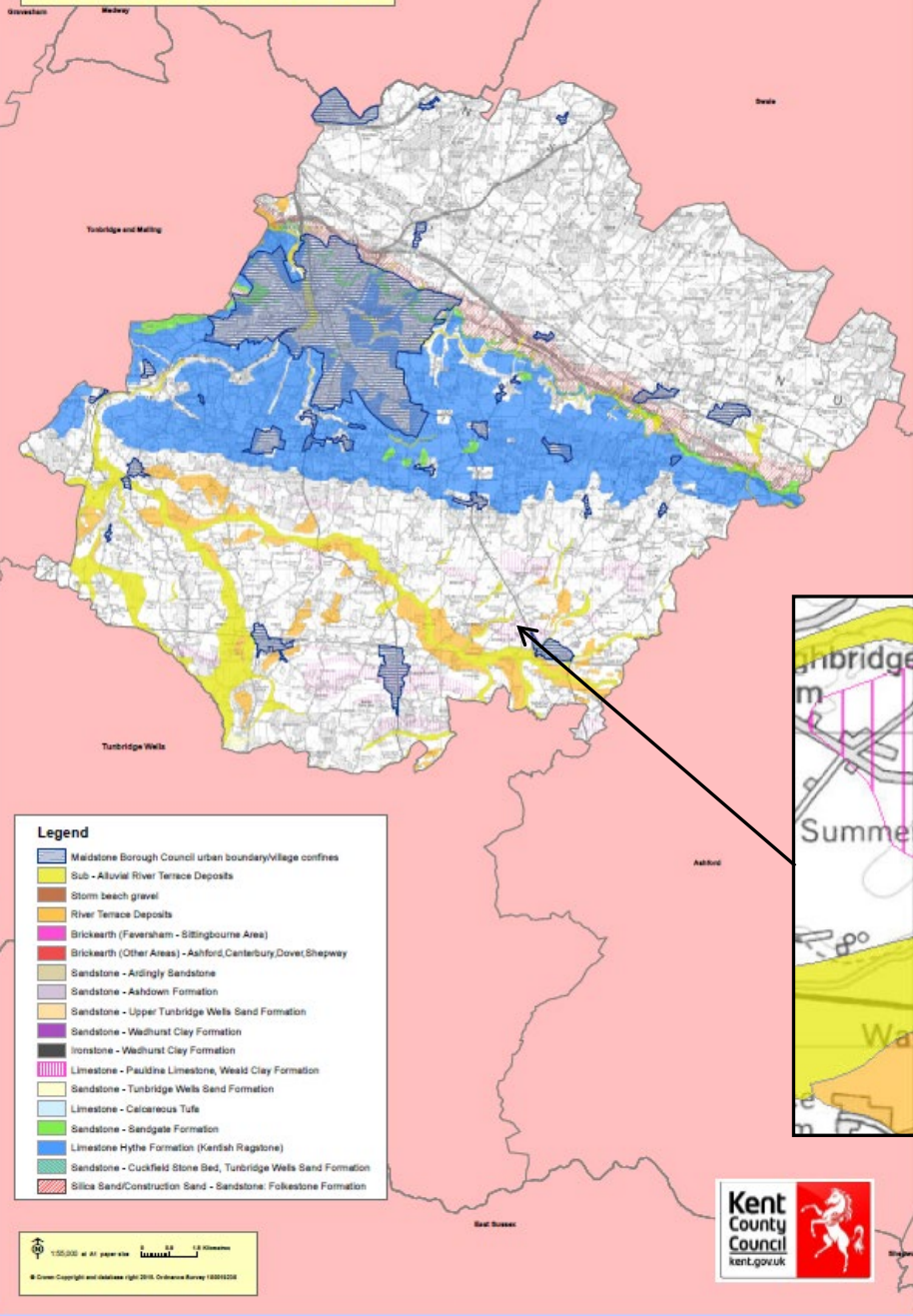
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Appendix C

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**Kent Minerals and Waste Local Plan  
Maidstone Borough Council - Mineral Safeguarding Areas**



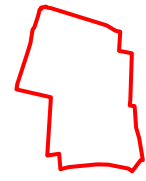
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- Maidstone Borough Council urban boundary/village confines
  - Sub - Alluvial River Terrace Deposits
  - Storm beach gravel
  - River Terrace Deposits
  - Bricks earth (Faversham - Sittingbourne Area)
  - Bricks earth (Other Areas) - Ashford, Canterbury, Dover, Shepway
  - Sandstone - Airding Sandstone
  - Sandstone - Ashdown Formation
  - Sandstone - Upper Tunbridge Wells Sand Formation
  - Sandstone - Wadhurst Clay Formation
  - Ironstone - Wadhurst Clay Formation
  - Limestone - Paulines Limestone, Weald Clay Formation
  - Sandstone - Tunbridge Wells Sand Formation
  - Limestone - Calcareous Tuff
  - Sandstone - Sandgate Formation
  - Limestone Hythe Formation (Kendish Ragstone)
  - Sandstone - Cuckfield Stone Bed, Tunbridge Wells Sand Formation
  - Silica Sand/Construction Sand - Sandstone, Folkestone Formation

1:50,000 at A1 paper size  
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CLIENT:

**Catesby Estates Plc**

PROJECT:

**Moat Road, Headcorn**

TITLE:

**Maidstone Polices Map: Mineral Safeguarding Areas**

SCALE@SIZE :

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ISSUE:

FINAL

DESIGN/DRAWN by :

DATE:

April, 2021

PROJECT No:

P9697

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Appendix D

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