



**DOVE'S NEST SHAFT BOREHOLE (SOUTH)**

**ECOLOGICAL SURVEY & ASSESSMENT**

**PCAJ127/DNS/V1**

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**TABLE OF CONTENTS**

**PAGE**

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>3</b>
<b>2.0</b>	<b>ECOLOGICAL SURVEY METHODOLOGY.....</b>	<b>3</b>
2.1	Introduction .....	3
2.2	Personnel .....	3
2.3	Ecological Survey Methodology .....	3
2.4	Survey Constraints.....	4
<b>3.0</b>	<b>APPROACH TO THE ECOLOGICAL IMPACT ASSESSMENT .....</b>	<b>4</b>
3.1	Introduction .....	4
3.2	Evaluation .....	4
3.2.1	<u>Introduction</u> .....	4
3.3	Identification and Assessment of Ecological Impacts.....	5
3.3.1	<u>Defining Significance</u> .....	5
3.3.2	<u>Mitigation Requirements</u> .....	5
3.3.3	<u>Residual Impact Assessment</u> .....	5
<b>4.0</b>	<b>LEGISLATIVE &amp; POLICY CONSIDERATIONS .....</b>	<b>6</b>
4.1	Legislation .....	6
4.2	Policy .....	6
4.2.1	<u>National Policy</u> .....	6
4.2.2	<u>North York Moors National Park Authority Policy</u> .....	7
4.2.3	<u>Other – Convention on Biological Diversity</u> .....	7
<b>5.0</b>	<b>SURVEY RESULTS .....</b>	<b>8</b>
5.1	Desk Study .....	8
5.2	Statutory and Non-Statutory Sites of Nature Conservation Interest .....	8
5.2.1	<u>Statutory Designations</u> .....	8
5.2.2	<u>Non Statutory Designations</u> .....	10
5.3	Plants/Habitats.....	10
5.3.1	<u>Survey Methodology</u> .....	10
5.3.2	<u>Survey Results</u> .....	11
5.4	Breeding Birds .....	13
5.4.1	<u>Survey Methodology</u> .....	13
5.4.2	<u>Survey Results</u> .....	13
5.5	Badger.....	14

NYM/NPA  
 10 DEC 2012

NYMNPA  
10 DEC 2012

NYM / 2012 / 0828 / FL 13

Dove's Nest Shaft Borehole (South)  
Ecological Survey & Assessment  
December 2012



5.5.1	<u>Survey Methodology</u> .....	14
5.5.2	<u>Survey Results</u> .....	14
5.6	Bats.....	14
5.6.1	<u>Survey Methodology</u> .....	14
5.6.2	<u>Survey Results</u> .....	14
5.7	Other Species.....	15
<b>6.0</b>	<b>EVALUATION</b> .....	<b>15</b>
6.1	Plants/Habitats.....	15
6.2	Breeding Birds.....	15
6.3	Other Species.....	16
<b>7.0</b>	<b>IDENTIFICATION &amp; ASSESSMENT OF ECOLOGICAL IMPACTS</b> .....	<b>16</b>
7.1	Identification of Potential Impacts.....	16
<b>8.0</b>	<b>MITIGATION</b> .....	<b>16</b>
<b>9.0</b>	<b>RESIDUAL ASSESSMENT/CONCLUSION</b> .....	<b>16</b>

Figure 1 – Site Location Plan

Figure 2 – Habitat Plan

Appendix 1 – Botanical Species List

Appendix 2 – Fauna Species List

Appendix 3 – Photographic Record





## 1.0 INTRODUCTION

Paul Chester & Associates Ltd. (PCA) was commissioned by York Potash Ltd. to undertake an extended Phase 1 Habitat Survey and to compile an Ecological Impact Assessment (EclA) on land to the north-west of Dove's Nest Farm (NGR NZ 893 054). The site was previously subject to a planning application for a temporary drilling rig. Whilst this was subsequently approved, during site establishment it was realised that a larger storage area for stripped topsoil and subsoil would be required than was previously envisaged. This report is therefore an updated assessment which takes into account this larger area. Some reference is made to the land use at the time of the original survey, where appropriate.

In terms of the prepared compound for the drill rig, this covers an area of approximately 100m x 80m. The storage area is now extended to the south of the site over an additional 1.8ha. This increases the overall footprint to an area of approximately 180m x 180m. All activities associated with the borehole will be confined to the cleared compound. Access to the drill site would be via a temporary access track established off the B1416. This has been established as part of the original consent.

A site location plan is provided as Figure 1. The site previously comprised entirely of arable farmland, representing approximately the northern two-thirds a larger arable field. The site is bordered to the north by a mature field boundary, to the west by a woodland plantation to the east by a semi-defunct field boundary and to the south partly by the remainder of the same arable field as well as group of farm buildings. A series of photographs are included to illustrate the more detailed baseline description of the site. This includes both pre-construction and current conditions.

## 2.0 ECOLOGICAL SURVEY METHODOLOGY

### 2.1 Introduction

The final scope of the ecological survey was defined on the basis of known and potential ecological interest in the local area. This was defined on the basis of desk-based consultation and search as well as professional knowledge of the local area. Given the detailed surveys have been on-going at Dove's Nest Farm/Haxby Plantation in relation to the proposed minehead, these are relied upon. A site-specific updated walkover was completed on 3<sup>rd</sup> December 2012.

### 2.2 Personnel

The field survey and EclA report was completed by Mr Paul Chester, Managing Director of PCA Ltd. Mr Chester is an ecologist with some twenty years professional experience. He has been a member of the Institute of Ecology and Environmental Management since 1994. He has extensive experience in the ecological survey and assessment of sites such as this and of the survey and assessment of a comprehensive range of habitats and species.

### 2.3 Ecological Survey Methodology

The ecological survey broadly followed the standard extended phase 1 methodology. This methodology involves surveying the habitats that are present as well as the recording of field signs/evidence indicating the presence/potential presence of species that could constitute a material consideration in planning terms. The final scope of the ecological survey was defined on the basis of known and potential ecological interest in the local area and giving due consideration to potential ecological impacts associated with the temporary drill site. More detailed surveys completed as part of the EclA for the proposed minehead are relied upon, where appropriate.



## 2.4 Survey Constraints

Given that surveys have been on-going throughout 2012 in relation to the proposed minehead, there are no survey constraints.

## 3.0 APPROACH TO THE ECOLOGICAL IMPACT ASSESSMENT

### 3.1 Introduction

Following on from the establishment of the baseline ecological conditions, the ecological impacts are identified and assessed in line with guidance published by the Institute of Ecology and Environmental Management (IEEM). This involves an initial process of evaluation, followed by a process of impact identification and assessment. The methodology and approach that has been followed in this assessment is described further below.

### 3.2 Evaluation

#### 3.2.1 Introduction

Ecological value is established on the basis of the importance of the identified habitats and species. Importance relates to the overall importance of a species or habitat and forms the basis for establishing the value of a discrete population of a particular species or discrete habitat. There are many factors which contribute to such value including extent, naturalness, rarity, fragility and diversity. These along with other established criteria have been applied.

An important element of the evaluation process is that of establishing the value of a particular species or habitat within set geographical parameters. Those that have been used in the assessment are typically as follows:

- International (Europe)
- National (United Kingdom)
- Regional (North-east England)
- County (North Yorkshire)
- District/Unitary Authority area (North York Moors National Park)
- Local (Dove's Nest Farm and its surrounds)
- Site i.e. within zone of influence only (typically the planning application site although where relevant, a larger area)

In terms of attributing value, whilst clearly the presence of protected sites or species is of fundamental importance it is also important to identify those habitats and species which are of significance in the local or site-specific context. The identification of such features and species enables best practice to be followed in the detailed design of an individual proposal.

The relative sensitivity of an individual ecological receptor has also been considered and is based upon a number of factors including the extent of a particular habitat or the size of population of an individual species. Other factors include the fragility of the habitat or species both in terms of its susceptibility to disturbance and its ability to recover following such disturbance.



NYM / 2012 / 0828 / FL 1

### 3.3 Identification and Assessment of Ecological Impacts

Following on from the establishment of the baseline ecological conditions and evaluation, the ecological impacts are considered in line with guidance published by the Institute of Ecology and Environmental Management (IEEM). These include consideration of the following parameters:

- positive or negative
- magnitude
- extent
- duration
- reversibility
- timing and frequency

NYM/NPA  
 10 DEC 2012

Whether a potential impact is significant is determined by quantifying the magnitude of effect of the identified impact on each of the identified ecological receptors. Large scale effects on receptors of high or very high sensitivity and value are likely to represent a significant impact that may be unacceptable in nature conservation terms. Equally, small-scale effects on receptors of low or very low degrees of sensitivity are likely to be below significance thresholds and thereby not a significant constraint to the proposed development.

#### 3.3.1 Defining Significance

Establishing the significance of an identified ecological impact is based upon the consideration of the impact alongside the value of the impacted habitat, species or species-group. Whilst this is not necessarily straightforward, it is summarised in simple terms in the table below:

Value/Importance	Magnitude		
	Substantial	Moderate	Minor
International	Very High	High	Moderate
National	Very High	High	Moderate
Regional	Very High/High	High/Moderate	Moderate/Low
County	High	Moderate	Low
District	High	Moderate	Low
Local	High/Moderate	Low	Very Low

The lowest category of value/importance used in the assessment i.e. "site" has been deliberately excluded from the table. This is because these are impacts which are best treated on a site-specific basis, particularly when considering requirements for mitigation.

#### 3.3.2 Mitigation Requirements

The establishment of mitigation requirements is based upon the consideration of the established ecological value and magnitude of the identified impact also taking into consideration the duration of the impact where relevant.

#### 3.3.3 Residual Impact Assessment

Following through the ecological impact assessment process, the final element of the process is the re-assessment of the identified significant ecological impacts with any proposed mitigation in place.



#### 4.0 LEGISLATIVE & POLICY CONSIDERATIONS

##### 4.1 Legislation

NYM / 2012 / 0828 / FL

The Wildlife and Countryside Act (1981, as amended) provides protection for Britain's flora and fauna. Particular protection is afforded to certain species listed in schedules to the Act although the degree and nature of the protection varies. Schedule 1 of the Wildlife and Countryside Act (Part 4) lists birds which are afforded special protection. This protection is greater than for other birds and includes it being an offence to disturb a bird whilst it is building a nest or is in, on, or near a nest containing eggs or young. It is also an offence to disturb the dependent young of a Schedule 1 species. Schedule 5 lists animals which are afforded special protection. Relevant to development plans, this schedule makes it an offence to damage, destroy or obstruct access to any structure or place which any Schedule 5 animal inhabits. It is also an offence to disturb any such animal while it is occupying a structure or place which it uses for that purpose. For certain species, different levels of protection are afforded. Schedule 8 lists species of plants which are afforded special protection.

Other national legislation includes the Countryside and Rights of Way Act 2000 (CROW Act) which underpins the Government's commitment to the long term conservation of biodiversity in accordance with the Convention on Biological Diversity. More recently, the Natural Environment and Rural Communities Act 2006 was implemented primarily to implement key aspects of the Government's Rural Strategy published in July 2004. Specific to biodiversity conservation, Sections 40, 41 and 42 replace Section 74 of the CROW Act. Section 40 extends to all public authorities the existing Section 74 duty to have regard to biodiversity as far is consistent with the proper exercise of their functions. Section 41 places a duty on the Secretary of State to publish, review and revise lists of living organisms and types of habitat in England that are of principal importance for the purpose of conserving English biodiversity. At the national level, the UK Biodiversity Action Plan (BAP) sets out the broad strategy and targets for conserving and enhancing wild species and habitats over the next twenty years. The UK plan together with the individual action plans therefore provides the framework for the effective delivery of biodiversity conservation at the national level and provides the UK commitment to the Biodiversity Convention. The effective delivery of national priorities as well as the conservation of species and habitats of value at the local level is achieved through the implementation of Local Biodiversity Action Plans (LBAPs).

In relation to European legislation, the EC has adopted two Directives in relation to wildlife and nature conservation. In relation to birds, Council Directive 79/409/EEC on the conservation of wild birds provides a framework for the conservation and management of wild birds in Europe. Other habitats and species are protected through Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora which requires Member States to schedule important wildlife sites through the European Community as Special Areas of Conservation (SACs) and to give protection to habitats and species listed in the Directive as being threatened or of Community interest. The Habitats Directive was transposed into UK law by the 'Conservation (Natural Habitats, &c.) Regulations 1994'. The Regulations have been amended several times since their introduction and were recently consolidated through the Conservation of Habitats and Species Regulations 2010.

##### 4.2 Policy

###### 4.2.1 National Policy

In late March 2012, the Government published its final draft version of the National Planning Policy Framework (NPPF), which sets out the Government's planning policies for England and how they should be applied in relation to biodiversity and other matters. This replaced the guidance previously provided in Planning Policy Statement 9 – Biodiversity and Geological Conservation. In



NYM / 2012 / 0828 / FL

relation to associated guidance, ODPM Circular 06/2005: "Biodiversity and Geological Conservation - Statutory Obligations and their Impact within the Planning System (Circular 06/05)", remains an active document, although it is now to be used in conjunction with the NPPF rather than PPS9. In the longer term, it is likely that new guidance will be prepared to underpin the NPPF as it relates to biodiversity. No timetable has, however, been set for this at present.

#### 4.2.2 North York Moors National Park Authority Policy

The Local Development Framework (LDF) for the National Park consists of several different documents to guide future development whilst ensuring that its special qualities are conserved and enhanced. Of particular relevance to biodiversity is Core Policy C – Natural Environment, Biodiversity and Geodiversity of the Core Strategy and Development Policies document. This policy states that:

*"The quality and diversity of the natural environment of the North York Moors National Park will be conserved and enhanced. Conditions for biodiversity will be maintained and improved and important geodiversity assets will be protected. Protected sites and species will be afforded the highest level of protection with priority also given to local aims and targets for the natural environment.*

*All developments, projects and activities will be expected to:*

- 1. Provide an appropriate level of protection to legally protected sites and species.*
- 2. Maintain, and where appropriate enhance, conditions for priority habitats and species identified in the North York Moors Local Biodiversity Action Plan.*
- 3. Maintain and where appropriate enhance recognised geodiversity assets.*
- 4. Maintain and where appropriate enhance other sites, features, species or networks of ecological or geological interest and provide for the appropriate management of these.*
- 5. Maximise opportunities for enhancement of ecological or geological assets, particularly in line with the North York Moors Local Biodiversity Action Plan, Tees Valley and North East Yorkshire Geodiversity Action Plans and the regional Habitat Enhancement Areas.*
- 6. Mitigate against any necessary impacts through appropriate habitat creation, restoration or enhancement on site or elsewhere.*

#### 4.2.3 Other – Convention on Biological Diversity

The Convention on Biological Diversity was adopted at the Earth Summit in Rio de Janeiro, Brazil in June 1992, and came into force in December 1993. In relation to biodiversity conservation, the Convention called for the development and enforcement of national biodiversity strategies and action plans to identify, conserve and protect existing biological diversity and to enhance it wherever possible. In response to this, the UK Biodiversity Action Plan (BAP) published in 1994 sets out the broad strategy and targets for conserving and enhancing wild species and habitats over a twenty year period. A further report published in December 1995 provides detailed proposals for a large number of species and habitats which require urgent conservation action. The effective delivery of national priorities as well as the conservation of species and habitats of value at the local level is achieved through the implementation of Local Biodiversity Action Plans (LBAPs). The relevant LBAP for the application site is North York Moors National Park Authority Local Biodiversity Action Plan 2008-2012. This document sets out local priorities for biodiversity. Of particular relevance to the planning application are local priority habitats and species. In relation to species, whilst these are often associated with species which are afforded protection under relevant European and UK legislation, this is not necessarily the case. The local priority habitat types likewise include a tier of habitats which may not necessarily be protected by any higher level designation.





## 5.0 SURVEY RESULTS

### 5.1 Desk Study

As part of the EclA a detailed desk-based study has been undertaken. This has involved the consideration of a number of published documents and other information relevant to the study area. Key sources of information reviewed as part of the desk study include, in particular:

- National Biodiversity Network (NBN) Gateway.
- Various national and regional distribution atlases/reports in relation to plants, birds, etc.
- North York Moors National Park Local Biodiversity Action Plan.

In addition, all relevant ecological data within a zone extending to approximately 2km from the application site has been obtained from the North East Yorkshire Ecological Data Centre (NEYEDC).

In terms of the results of the desk study and data request, no legally protected species records were identified for the site or its immediate surrounds. In the wider local area, the NEYEDC provided records of a number of legally protected or rare/noteworthy species recorded within approximately 2km of the application site. These were:

- Adder *Vipera berus* (Various records, the closest of which is Haxby Plantation, NZ 898 051)
- Badger *Meles meles* (Various records, the closest of which is approximately 500m south of the proposed drill site)
- Birds (several UK/LBAP and British Trust for Ornithology Red List species)
- Common Frog *Rana temporaria* (NZ 80 and NZ 90)
- Common Toad *Bufo bufo* (NZ 80 and NZ 90)
- Brown Hare *Lepus europaeus* (Various records, for example, NZ 89 04)
- Palmate Newt *Lissotriton helveticus* (Several locations, the closest of which is Haxby Plantation, NZ 900 048)
- Slow-worm *Anguis fragilis* (Low Rigg Farm, NZ 915 052)
- Water Vole *Arvicola terrestris* (Buskey Beck, Sneaton, NZ 88 07)

### 5.2 Statutory and Non-Statutory Sites of Nature Conservation Interest

#### 5.2.1 Statutory Designations

The study area and its immediate surrounds are not subject to any statutory nature conservation designation. In the wider area, the closest statutory site is the North York Moors Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and Special Protection Area (SPA). This is an extensive statutory site covering much of the moorland within the North York Moors National Park. The nearest section of the designated site to the application site is associated with Ugglebarnby Moor approximately 100m to the west of the site to the west of the B1416.

In terms of the basis for these statutory designations, the site qualifies as a SAC on the basis of providing examples of the following habitat types listed in Annex 1 of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- Northern Atlantic wet heaths with Cross-leaved Heath *Erica tetralix* for which this is considered to be one of the best areas in the United Kingdom.

- European dry heaths for which this is considered to be one of the best areas in the United Kingdom.
- Blanket bogs for which the area is considered to support a significant presence (Blanket Bog is an Annex 1 priority habitat type when in its active form).

The SAC covers an extensive area extending over 44,000ha of the North York Moors National Park. The conservation objectives for the SAC are to maintain the above habitat types in a favourable condition. Maintain implies restoration where the habitat type is not in a favourable condition. The boundary is essentially that which is also adopted in relation to the SPA and SSSI designations considered further below.

In relation to the SPA designation, this site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

- Golden Plover *Pluvialis apricaria*, 526 pairs representing at least 2.3% of the breeding population in Great Britain.
- Merlin *Falco columbarius*, 40 pairs representing at least 3.1% of the breeding population in Great Britain.

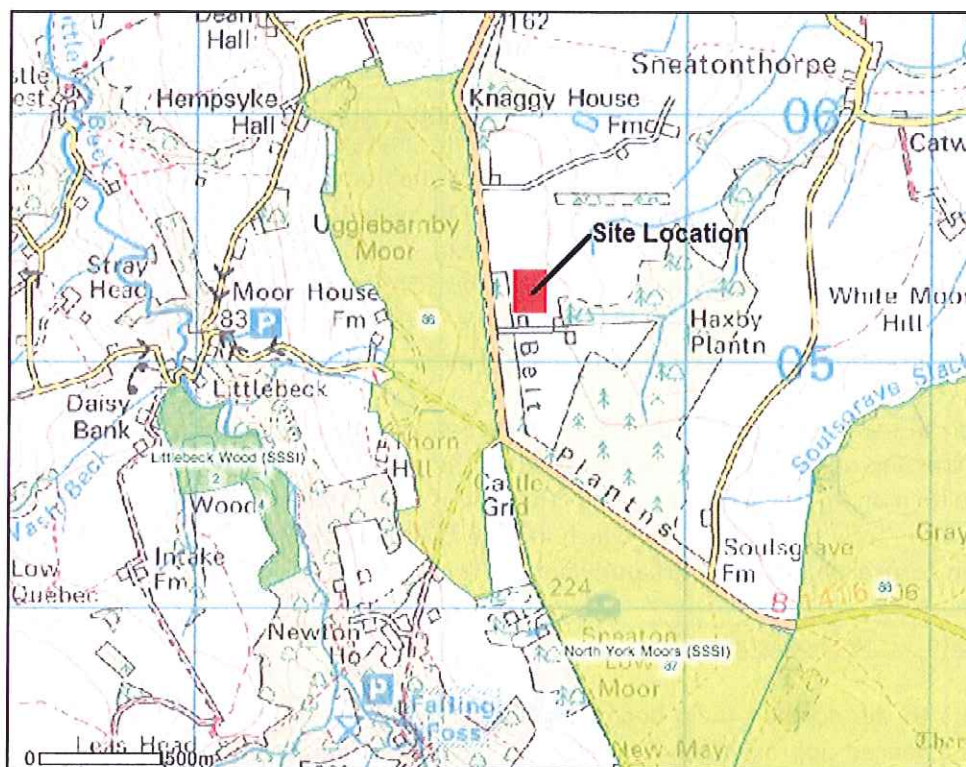
With the same boundary as the European sites, the North York Moors SSSI contains the largest continuous tract of heather moorland in England. The site is of national importance for its mire and heather moorland vegetation communities and of international importance for its breeding bird populations. The site consists of the four main moorland blocks with five smaller outlying areas.

In the wider area, Littlebeck Wood SSSI is located approximately 1km to the south-west of the application site. Little Beck Wood is situated on a steep north-east facing hillside to the west of Little Beck and is a good example of mixed deciduous woodland of ancient origin. The woodland canopy includes species such as Ash *Fraxinus excelsior*, Rowan *Sorbus aucuparia*, Sessile Oak *Quercus robur* and Wych Elm *Ulmus glabra*, with Blackthorn *Prunus spinosa*, Hawthorn *Crataegus monogyna*, Hazel *Corylus avellana* and Holly *Ilex aquifolium* in the shrub layer. The well-developed ground flora includes characteristic woodland species such as Bluebell *Hyacinthoides non-scripta*, Dog's-mercury *Mercurialis perennis* and Ramsons *Allium ursinum*. The uncommon Alternate-leaved Golden Saxifrage *Chrysosplenium alternifolium* is present in wetter parts of the woodland.

The boundary of these statutory sites in relation to the application site is shown below.

NYM/12/0828/FL  
10 DEC 2012





North York Moors SSSI, SAC & SPA and Littlebeck Wood SSSI (reproduced from Natural England, 'Nature on the Map')

### 5.2.2 Non Statutory Designations

The study area and its immediate surrounds are not subject to any non-statutory nature conservation designation. In the wider local area, Little Beck Wood is a Yorkshire Wildlife Trust Nature Reserve. This refers to the section of woodland to the east of Little Beck i.e. adjacent to the SSSI. It is approximately 800m south-west of the application site. In terms of other non-statutory designations, Great and Little Beck Woods are included on the Ancient Woodland Inventory as examples of ancient semi-natural woodland. The ancient woodland is approximately 800m south-west of the application site at its closest point. The woodland associated with Sneaton Thorpe Beck (NZ 903 057), approximately 1km to the east is also included on the Ancient Woodland Inventory as an example of ancient semi-natural woodland.

## 5.3 Plants/Habitats

### 5.3.1 Survey Methodology

The botanical survey involved a Phase 1 Habitat Survey together with more detailed description of individual areas, where relevant. A botanical species list is provided as Appendix 1. Likewise, a series of illustrative photographs are provided in Appendix 3.





### 5.3.2 Survey Results

#### General Description

With the exception of the now established temporary access to the site, the entire application site is within an intensively farmed arable field (see Photograph 1). At the time of survey, this supported very limited natural vegetation which was essentially limited to occasional arable weeds along the field margin. Species present in these marginal habitats include Broad-leaved Dock *Rumex obtusifolius*, Cleavers *Galium aparine*, Common Chickweed *Stellaria media*, Common Mouse-ear *Cerastium fontanum*, Common Nettle *Urtica dioica*, Creeping Bent *Agrostis stolonifera*, Creeping Buttercup *Ranunculus repens*, Daisy *Bellis perennis*, Groundsel *Senecio vulgaris* and Wavy Bitter-cress *Cardamine flexuosa*. The field now comprises of the prepared borehole area and surrounding stored topsoil and subsoil (see Photographs 2 and 3).

In relation to the now established temporary access, with the exception of the verge of the B1416 and the crossing of the boundary which borders the application site on its northern side, this was entirely within an improved pasture field. The field is was dominated by Perennial Rye-grass *Lolium perenne* with rarely occurring forbs which include Common Mouse-ear, Creeping Buttercup, Daisy, Dandelion *Taraxacum agg.* and Greater Plantain *Plantago major*.

#### Target Note 1 (see Photograph 4)

This refers to the northern field boundary which forms the northern boundary of the application site. It is a fenced approximately 8m wide boundary with defunct ditch on its northern side. The boundary comprises predominantly of mature trees with species such as Beech *Fagus sylvatica*, Goat Willow *Salix caprea*, Grey Willow *Salix cinerea ssp. cinerea*, Rowan *Sorbus aucuparia*, Scots Pine *Pinus sylvestris* and Silver Birch *Betula pendula*. Lower shrubs are rare and include Gorse *Ulex europaeus*, Hawthorn *Crataegus monogyna*, Holly *Ilex aquifolium*, Honeysuckle *Lonicera periclymenum* and young Rowan. The associated ground flora is typically species poor and characterised by species such as Bramble *Rubus fruticosus agg.*, Cleavers, Cock's-foot *Dactylis glomerata*, Common Bent *Agrostis capillaris*, Common Nettle, Common Sorrel *Rumex acetosa ssp. acetosa*, Cow Parsley *Anthriscus sylvestris* and Rosebay Willowherb *Chamerion angustifolium*. More rarely occurring species include Bracken *Pteridium aquilinum*, Broad Buckler-fern *Dryopteris dilatata* and Hawkweed *Hieracium agg.*

#### Target Note 2 (see Photograph 5)

This refers to a woodland plantation to the west of the application site. The woodland forms part of a larger linear plantation which borders long sections of the B1416. Approximately 70m wide, the plantation is mixed with mature Alder *Alnus glutinosa*, Downy Birch *Betula pubescens*, Scots Pine and Silver Birch along with rarely occurring European Larch *Larix decidua* and Pedunculate Oak *Quercus robur*. The shrub layer is sparse with occasional Holly, Rhododendron *Rhododendron ponticum* and rarely occurring Gorse. The woodland is open and grazed at times and has a typically grass dominated and species-poor ground flora. Characteristic species includes grasses such as Creeping Soft-grass *Holcus mollis*, Sweet Vernal-grass *Anthoxanthum odoratum* and Yorkshire-fog *Holcus lanatus* along with more rarely occurring Bramble, Broad Buckler-fern, Broad-leaved Dock, Common Sorrel, Hedge Bedstraw *Galium album* and Hogweed *Heracleum sphondylium*. Characteristic woodland species although typically rare are present locally, for example, Hairy Wood-rush *Luzula pilosa*, Lords-and-Ladies *Arum maculatum*, Wood Sage *Teucrium scorodonia* and Wood-sorrel *Oxalis acetosella*. A grassed track is present at the eastern boundary of the woodland (see Photograph 5) and forms a boundary between the woodland and proposed drill site. The track is





typically grass dominated with species such as Annual Meadow-grass *Poa annua*, Creeping Bent and Perennial Rye-grass along with rarely occurring forbs such as Broad-leaved Dock, Common Chickweed, Common Mouse-ear, Common Nettle, Creeping Buttercup, Dandelion and Greater Plantain. The track is locally bare as a result of trampling by cattle and/or vehicle disturbance.

#### Target Note 3 (see Photograph 6)

Forming the northern boundary of the woodland, Target Note 3 is essentially a continuation of the ditch referred to in Target Note 1 above. The ditch remains semi-defunct whilst the ground flora is better-developed than in the main woodland block with species such as Bracken, Bramble, Broad Buckler-fern, Bush Vetch *Vicia sepium*, Common Bent, Common Dog-violet *Viola riviniana*, Common Sorrel and Hard-fern *Blechnum spicant*. Ruderals are locally prominent with locally frequent Common Nettle and Rosebay Willowherb.

#### Target Note 4 (see Photograph 7)

This refers to the eastern boundary of the B1416 through which the site access has been established. The boundary comprises of a 2-2.5m wide roadside verge with associated dry stone wall and fence. The verge supports a typical flora with grasses such as Red Fescue *Festuca rubra sens. lat.*, Yorkshire-fog and more rarely occurring Cock's-foot and Tufted Hair-grass *Deschampsia cespitosa ssp. cespitosa*. Forbs include occasional Common Knapweed *Centaurea nigra*, Common Nettle, Cow Parsley, Creeping Thistle *Cirsium arvense*, Curled Dock *Rumex crispus*, Dandelion, Meadow Buttercup *Ranunculus acris*, Ribwort Plantain *Plantago lanceolata* and Yarrow *Achillea millefolium*. Occasional Gorse is present alongside the wall.

#### Target Note 5 (see Photograph 8)

Forming the eastern boundary of the application site, this is an open fenced field boundary with occasional Bramble and Gorse along with rare or very rarely occurring Dog-rose, Grey Willow and Hawthorn. The field boundary has an associated semi-defunct ditch was cleared in 2012 and supported a re-establishing vegetation with species such as Common Water-starwort *Callitriche stagnalis sens. lat.*, Great Willowherb *Epilobium hirsutum* and Soft-rush. The narrow ditch banks support species such as occasional Cock's-foot, Common Nettle and Rosebay Willowherb *Chamerion angustifolium*.

#### Target Note 6 (see Photograph 9)

This relates to a group of farm buildings which comprises of cattle sheds along with areas of hardstanding and other bare ground with occasional ruderals including species such as Annual Meadow-grass, Broad-leaved Dock, Cleavers, Common Nettle, Greater Plantain, Pineappleweed and Knotgrass. The buildings have a perimeter fence adjacent to the application area with occasional planted Hawthorn and Silver Birch. The boundary is open with significant evidence of nutrient enrichment and a ground flora characterised by dominant stands of Common Nettle.

#### Target Note 7 (see Photograph 10)

This refers to the access track to Dove's Nest Farm. This has an open mown grass verge 1m wide on its southern side. The northern side also has a narrow mown trackside verge with





scattered mature Beech and other lower growing trees and shrubs including Apple *Malus sylvestris sens. lat.* and Gorse.

#### Other Habitats

Although not impacted by the proposed borehole, to the west of the B1416, Ugglebarnby Moor which forms part of the wider North York Moors SSSI, SAC and SPA comprises of an initial dense band of trees and shrubs alongside the road. After approximately 30-40m, the habitat becomes more open with scattered trees and a mosaic of wet heath and Purple Moor-grass *Molinia caerulea* dominated mire. The habitat is apparently ungrazed and large tussocks of Purple Moor-grass *Molinia caerulea* are a feature throughout the moor. Other species include typical wet heath and moorland species such as Carnation Sedge *Carex panicea*, Compact Rush *Juncus conglomeratus*, Green-ribbed Sedge *Carex binervis*, Heather *Calluna vulgaris*, Soft-rush *Juncus effusus* and Tormentil *Potentilla erecta*. Sections of drier Heather dominated moorland are also present (see Photograph 11).

#### Invasive Species

There was no evidence of any invasive species such as Japanese Knotweed *Fallopia japonica* on or in the vicinity of the application site. Rhododendron is present in the adjacent plantation woodland. This species would not, however, be disturbed by the proposal.

### **5.4 Breeding Birds**

#### 5.4.1 Survey Methodology

Dove's Nest Farm/Haxby Plantation has been surveyed on three separate occasions for breeding birds with adventitious records made at other times. All birds either seen or noted by call were recorded. Observations were likewise made in relation to confirmation of breeding, for example, identifying nest sites, birds carrying nest material, alarm calling, etc.

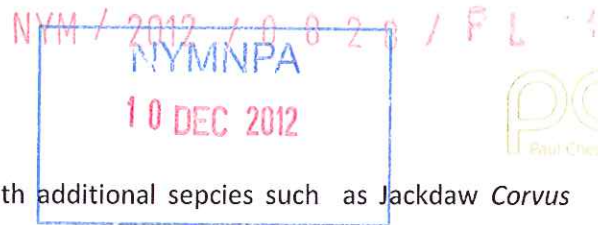
#### 5.4.2 Survey Results

The application site provides a potential breeding habitat for ground nesting species only. Specific to such species, whilst Skylark *Alauda arvensis* was present in the arable field to the north-east in 2012, it was not present in the application site. Several Meadow Pipit *Anthus pratensis* were present in the application site at times although were considered to be feeding as opposed to nesting.

With regard to the northern field boundary, this was found to support small numbers of breeding birds with nesting Carrion Crow *Corvus corone*, Chaffinch *Fringilla coelebs*, Starling *Sturnus vulgaris* and Woodpigeon *Columba palumbus* present. A greater diversity of species was associated with the plantation woodland to the south of the access track. This yielded further records of Carrion Crow, Chaffinch and Woodpigeon along with additional species such as Blackbird *Turdus merula*, Blackcap *Sylvia atricapilla*, Blue Tit *Cyanistes caeruleus*, Chiffchaff *Phylloscopus collybita*, Coal Tit *Periparus ater*, Dunnock *Prunella modularis*, Goldcrest *Regulus regulus*, Pheasant *Phasianus colchicus*, Robin *Erithacus rubecula*, Song Thrush *Turdus philomelos* and Wren *Troglodytes troglodytes*, all of which breed in the plantation.

To the south of the application sites, birds nesting around the group of cattle sheds were Pied Wagtail *Motacilla alba* and House Sparrow *Passer domesticus*. Tree Sparrow *Passer montanus* was recorded from the main access to Dove's Nest Farm, whilst the habitats around the main farmhouse





and associated buildings supported these along with additional species such as Jackdaw *Corvus monedula*, Starling and Swallow *Hirundo rustica*.

The scrub and woodland on the western side of the B1416 was also found to support a similar range of species. Slightly better-structured, this also provided a habitat for additional species, for example, Goldfinch *Carduelis carduelis*, Willow Warbler *Phylloscopus trochilus* and Yellowhammer *Emberiza citrinella*. Further to the west, the heathland/scattered tree habitats supported the declining Tree Pipit *Anthus trivialis*. This habitat also appeared to be apparently suitable for Nightjar *Caprimulgus europaeus* although no evidence of this species was found. No evidence of Golden Plover or Merlin was found from this adjacent moorland.

## 5.5 Badger

### 5.5.1 Survey Methodology

A standard badger survey was undertaken involving a detailed walkover survey of the entire site to record evidence of setts as well as field signs such as paths, hairs, latrines, etc. The survey was likewise extended into the wider local area.

### 5.5.2 Survey Results

Whilst no Badger setts were noted on or in close proximity to the application site, Badger paw prints were noted along the southern boundary of the application site with a well-used path and latrine site towards the northern edge of the plantation woodland. This path crosses the B1416 and continues west across Ugglebarnby Moor; whilst to the east it continues across Dove's Nest Farm to two further latrine sites at the edge of Whinny Wood. It is possible that this path along with associated latrine site represents a territorial boundary. In terms of the origin of these field signs, they are likely to be associated with one of two main setts which are present in the wider local area, one of which is approximately 1km to the north-east, and a second which is approximately 400m to the south-east (exact locations not specified).

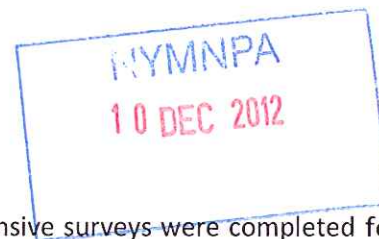
## 5.6 Bats

### 5.6.1 Survey Methodology

Whilst there is no potential roosting habitat within the application site, dusk foraging surveys have been completed as part of the wider EclA and are relied upon.

### 5.6.2 Survey Results

Foraging surveys confirmed occasional Common Pipistrelle *Pipistrellus pipistrellus* commuting and feeding along the southern field boundary. This forms a distinctive corridor linking woodland to the east with the B1416. Foraging bats were also noted along the eastern edge of the woodland to the south-west with a particular concentration of feeding around the adjacent farm buildings at the southern end of the woodland. Foraging Common Pipistrelle along with occasional Myotis (probably Brown Long-eared *Plecotus auritus*) were also noted along the boundaries of the plantation adjacent to the B1416.



## 5.7 Other Species

As part of the surveys for the proposed minehead, comprehensive surveys were completed for the full range of key rare or legally protected species which could be present within Dove's Nest Farm/Haxby Plantation. Specific to this application, it is located with a part of the Dove's Nest Farm which is a low value supporting no significant additional species.

In relation to amphibians, the closest pond lies in excess of 500m to the south-east. With regard to reptiles, a small population of Common Lizard *Zootoca vivipara* is present adjacent to the access to Dove's Nest Farm, approximately 90m south-west of the application site. Adder *Vipera berus* and Common Lizard are also present on Ugglebarnby Moor. The application site itself is, however, a hostile habitat for reptiles.

With regard to other mammals, small numbers of Brown Hare *Lepus europaeus* are present at Dove's Nest Farm and in other farmland locally. There is, however, nothing to suggest that the proposed drill site or its surrounds are of any particular value to this species.

No other locally important species, for example, Hedgehog *Erinaceus europaeus*, were noted during the field surveys.

## 6.0 EVALUATION

### 6.1 Plants/Habitats

The application site supports an extremely limited range of species typical of an arable field. In terms of individual species, no nationally or regionally rare or scarce plants were encountered during the surveys and all species are common or very common in the habitats encountered on the site.

In the wider area, the most valuable habitats are those associated with Ugglebarnby Moor. Forming part of the designated SSSI and SAC, this moorland provides a habitat of national importance and forms part of larger site of European importance. These habitats are not, however, of any relevance to the proposed drill site.

### 6.2 Breeding Birds

The application site is currently a breeding bird habitat of no value. Higher value habitats locally are associated with the plantation woodland to the west of the site and scrub/woodland sections on the eastern edge of Ugglebarnby Road. Whilst the range of species recorded was typical of the habitats found locally, several of the species are declining and therefore of conservation concern. In particular, House Sparrow, Song Thrush, Skylark, Starling, Tree Sparrow and Yellowhammer, are UK BAP Priority Species which are also included on the British Trust for Ornithology (BTO) Red List of birds of high conservation concern. The Red List refers to species which have typically seen a severe decline in the UK breeding population size of more than 50% over the last 25 years or over the entire period used for assessments since the first Birds of Conservation Concern (BoCC) review in 1969. They are also priority species of the North York Moors BAP which contains a specific SAP for farmland birds. The presence of these species is indicative of a locally important farmland bird population in the wider local area. Tree Pipit which was recorded from moorland to the west is also a BTO Red List species.

With regard to other species, whilst all are common in habitats such as those provided by the site and its surrounds, Dunnock and Willow Warbler are included on the BTO Amber List. This refers to





species which have seen a moderate decline (by more than 25% but less than 50%) in breeding numbers over the last 25 years.

### 6.3 Other Species

On the basis of the current survey there is nothing to suggest that the survey area is of any value to any other individual species or species group.

## 7.0 IDENTIFICATION & ASSESSMENT OF ECOLOGICAL IMPACTS

### 7.1 Identification of Potential Impacts

In terms of the impacts associated with the proposed borehole, given that the works have begun under the original consent, any impacts associated with the establishment of the site are no longer relevant. Given the low value of the habitat throughout the application site and adjacent to the proposed drill site and in the absence of sensitive receptors in the relevant zone of influence, there are unlikely to be any significant adverse impacts as a result of the borehole works. With the exception of an extension to the temporary loss of the arable field, no other habitats are impacted by the revised application.

In terms of operations considerations, the borehole rig will operate 24 hours a day, 7 days per week and would be minimally illuminated at night time. The rig would drill to a depth of approximately 1700m. Arisings would be transported from site using large articulated lorry sized vehicles. Approximately 5 vehicle journeys would be made to/from the site when operational. Potential impacts are therefore essentially restricted to localised disturbance to birds and other species in the immediate wider local area. Whilst some disturbance is inevitable, this is not regarded as a significant impact, there being significant areas of alternative habitat for any displaced birds/animals in the wider local area. Paths which are utilised by the local Badger population may be subject to some disturbance although these are distant from main setts and access would be maintained during the operation of the borehole site.

### 8.0 MITIGATION

Given that the site is effectively established, there are no advanced or other mitigation requirements.

### 9.0 RESIDUAL ASSESSMENT/CONCLUSION

In summary, the ecological survey and assessment has shown that the application site is a poor habitat of negligible ecological value. The site will quickly be restored to its previous farmland use on completion of the operations. Residual effects of the use of this area as a temporary borehole site are therefore considered to be negligible.

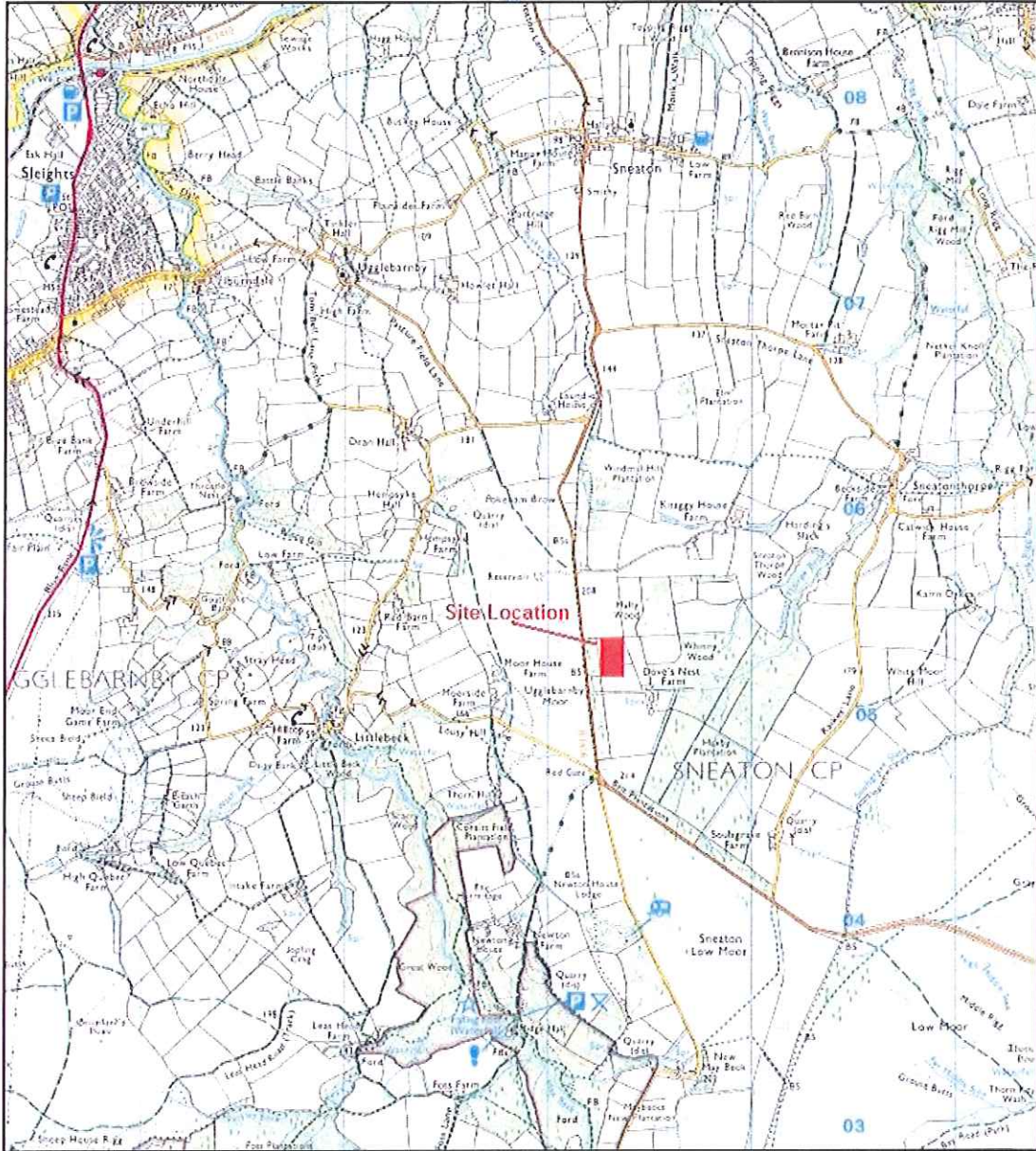
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**FIGURE 1 – SITE LOCATION PLAN**



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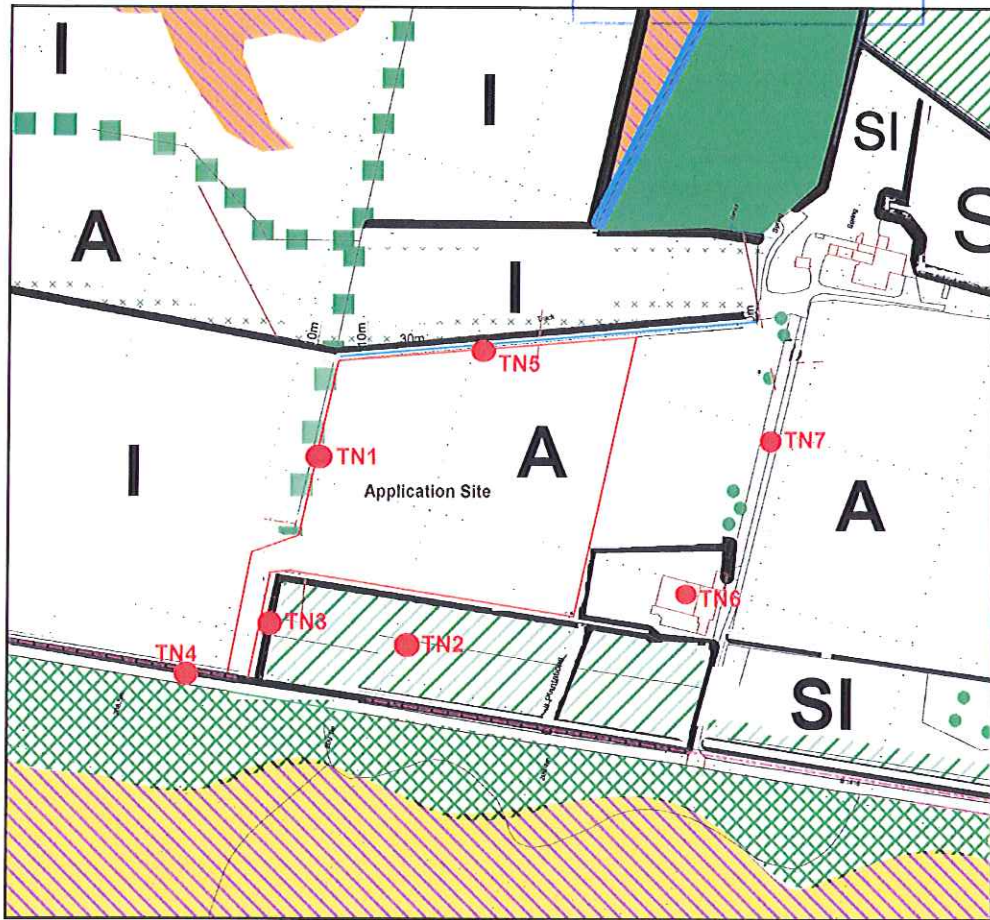
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**FIGURE 2 – HABITAT PLAN**



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KEY	
A	Arable
I	Improved Grassland
SI	Poor Semi-improved Grassland
—	Fence
—	Ditch
■ ■ ■	Mature Tree/shrub Line
●	Target Note
■	Broadleaved Woodland
■	Marshy Grassland
X X X	Scattered Scrub
■	Wet Dwarf Shrub Heath
■	Dense Scrub
■	Mixed Woodland
●	Scattered Trees

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## APPENDIX 1 – BOTANICAL SPECIES LIST

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**Scientific Name**

*Achillea millefolium*  
*Agrostis capillaris*  
*Agrostis stolonifera*  
*Alnus glutinosa*  
*Anthoxanthum odoratum*  
*Anthriscus sylvestris*  
*Arrhenatherum elatius*  
*Arum maculatum*  
*Bellis perennis*  
*Betula pendula*  
*Betula pubescens*  
*Blechnum spicant*  
*Cardamine flexuosa*  
*Centaurea nigra*  
*Cerastium fontanum*  
*Chamerion angustifolium*  
*Cirsium arvense*  
*Cirsium palustre*  
*Cirsium vulgare*  
*Crataegus monogyna*  
*Dactylis glomerata*  
*Deschampsia cespitosa ssp. cespitosa*  
*Dryopteris dilatata*  
*Elytrigia repens*  
*Epilobium ciliatum*  
*Epilobium hirsutum*  
*Equisetum arvense*  
*Fagus sylvatica*  
*Festuca rubra sens. lat.*  
*Fraxinus excelsior*  
*Galium aparine*  
*Galium saxatile*  
*Geranium dissectum*  
*Glechoma hederacea*  
*Hedera helix*  
*Heracleum sphondylium*  
*Hieracium agg.*  
*Holcus lanatus*  
*Holcus mollis*  
*Ilex aquifolium*  
*Juncus effusus*  
*Lamium purpureum*  
*Larix decidua*  
*Lolium perenne*  
*Lonicera periclymenum*  
*Luzula pilosa*  
*Oxalis acetosella*  
*Pinus sylvestris*  
*Plantago lanceolata*  
*Plantago major*

**Common Name**

Yarrow  
Common Bent  
Creeping Bent  
Alder  
Sweet Vernal-grass  
Cow Parsley  
False Oat-grass  
Lords-and-Ladies  
Daisy  
Silver Birch  
Downy Birch  
Hard-fern  
Wavy Bitter-cress  
Common Knapweed  
Common Mouse-ear  
Rosebay Willowherb  
Creeping Thistle  
Marsh Thistle  
Spear Thistle  
Hawthorn  
Cock's-foot  
Tufted Hair-grass  
Broad Buckler-fern  
Common Couch  
American Willowherb  
Great Willowherb  
Field Horsetail  
Beech  
Red Fescue  
Ash  
Cleavers  
Heath Bedstraw  
Cut-leaved Crane's-bill  
Ground-ivy  
Common Ivy  
Hogweed  
Hawkweed  
Yorkshire-fog  
Creeping Soft-grass  
Holly  
Soft-rush  
Red Dead-nettle  
European Larch  
Perennial Rye-grass  
Honeysuckle  
Hairy Wood-rush  
Wood-sorrel  
Scots Pine  
Ribwort Plantain  
Greater Plantain



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<i>Poa annua</i>	Annual Meadow-grass
<i>Poa trivialis</i>	Rough Meadow-grass
<i>Polygonum aviculare</i>	Knotgrass
<i>Pteridium aquilinum</i>	Bracken
<i>Quercus robur</i>	Pedunculate Oak
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Rhododendron ponticum</i>	Rhododendron
<i>Rosa canina</i>	Dog-rose
<i>Rubus fruticosus agg.</i>	Bramble
<i>Rumex acetosa ssp. acetosa</i>	Common Sorrel
<i>Rumex crispus</i>	Curled Dock
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Salix caprea</i>	Goat Willow
<i>Salix cinerea ssp. cinerea</i>	Grey Willow
<i>Sambucus nigra</i>	Elder
<i>Senecio vulgaris</i>	Groundsel
<i>Sorbus aucuparia</i>	Rowan
<i>Stellaria media</i>	Common Chickweed
<i>Taraxacum agg.</i>	Dandelion
<i>Teucrium scorodonia</i>	Wood Sage
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Ulex europaeus</i>	Gorse
<i>Urtica dioica</i>	Common Nettle
<i>Veronica persica</i>	Common Field-speedwell
<i>Vicia sepium</i>	Bush Vetch
<i>Viola riviniana</i>	Common Dog-violet

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## APPENDIX 2 – FAUNA SPECIES LIST

**Birds**

<b>Scientific Name</b>	<b>Common Name</b>
<i>Anthus pratensis</i>	Meadow Pipit
<i>Anthus trivialis</i>	Tree Pipit
<i>Alauda arvensis</i>	Skylark
<i>Carduelis carduelis</i>	Goldfinch
<i>Columba palumbus</i>	Woodpigeon
<i>Corvus corone</i>	Carrion Crow
<i>Cyanistes caeruleus</i>	Blue Tit
<i>Emberiza citrinella</i>	Yellowhammer
<i>Erithacus rubecula</i>	Robin
<i>Fringilla coelebs</i>	Chaffinch
<i>Hirundo rustica</i>	Swallow
<i>Larus argentatus</i>	Herring Gull
<i>Motacilla alba</i>	Pied Wagtail
<i>Parus major</i>	Great Tit
<i>Passer domesticus</i>	House Sparrow
<i>Passer montanus</i>	Tree Sparrow
<i>Pariparus ater</i>	Coal Tit
<i>Phasianus colchicus</i>	Pheasant
<i>Phylloscopus collybita</i>	Chiffchaff
<i>Phylloscopus trochilus</i>	Willow Warbler
<i>Pica pica</i>	Magpie
<i>Prunella modularis</i>	Duncock
<i>Regulus regulus</i>	Goldcrest
<i>Sylvia atricapilla</i>	Blackcap
<i>Sturnus vulgaris</i>	Starling
<i>Troglodytes troglodytes</i>	Wren
<i>Turdus merula</i>	Blackbird
<i>Turdus philomelos</i>	Song Thrush

**Mammals**

<i>Lepus europaeus</i>	Brown Hare
<i>Meles meles</i>	Badger (Latrine and paw prints only)
<i>Oryctolagus cuniculus</i>	Rabbit

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### APPENDIX 3 – PHOTOGRAPHIC RECORD

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Photograph 1 – Application Site, Viewed North-west from South-east Corner



Photograph 1 – Borehole Platform viewed from North-west Corner





Photograph 3 – Spoil Storage Viewed from Mid-western Boundary



Photograph 4 – Target Note 1 (Northern Field Boundary)



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Photograph 5 – Target Note 2 (Woodland West of Application Site)



Photograph 6 – Narrow Strip/Track Between Application Site and Woodland TN2



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Photograph 7 – Target Note 3



Photograph 8 – Target Note 4, Eastern Side of B1416 Providing Temporary Access



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Photograph 9 – Target Note 5



Photograph 10 – Target Note 6





Photograph 11 – Target Note 6



Photograph 12 – Ugglebarnby Moor, Section in Close Proximity to the B1416