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Windy Ridge Quarry Extension

Preliminary Ecological Appraisal

Prepared for Windy Ridge Recycling Ltd

September 2022



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Report Status	Authorised for Release	Date	Position
Draft	Rob Frith	26 May 2022	Principal Ecologist
Final	Rob Frith	17 September 2022	Principal Ecologist
Final (PAB Updated)	Rob Frith	27 September 2022	Principal Ecologist

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EXECUTIVE SUMMARY

Windy Ridge Recycling Ltd is seeking planning permission to vary conditions 2 (to extend the life of the planning permission to the end of 2044), 6 (to increase vehicle numbers), and 10 (to increase the depth of excavation) attached to planning permission 2020/70/92410/W; to excavate a former landfill to recover recyclable materials; to temporarily store soils on part of the restored quarry area; to form a new access road and to extend the Quarry at Windy Ridge Quarry, Cartworth Moor Road, Holmfirth HD9 2RL

RDF Ecology were appointed to undertake a desktop study, extended phase I habitat and protected species walkover survey of the proposed quarry extension area and report on the findings.

The site comprises two fields of improved agricultural grassland adjacent to the existing Windy Ridge Quarry.

Assessment Summary

Survey Item	Conclusions
Designated Sites	No direct impacts upon designated sites are predicted and no further survey and assessment work are recommended. The site lies close to the South Pennine Moors SPA and contains habitat which may be of limited value to nocturnal feeding golden plovers Further survey and assessment work is recommended to quantify the use of the site by golden plover.
Habitats	The habitats within the site have no intrinsic botanical value and the loss of the area of improved agricultural grassland would have negligible ecological effects and therefore no compensation or mitigation measures are proposed and no further survey or assessment work is recommended with regard to their botanical value.
Bats—Buildings and Structures	There are no buildings within the site. No impacts upon roosting bats in buildings are predicted and no further survey or assessment work is recommended
Bats—Trees and Habitats	There are no large trees with potential roost features to be removed or directly affected by the proposed development and no commuting routes would be disrupted. No significant impacts upon commuting or feeding bats or upon bats roosting in trees are predicted and no further survey and assessment work is recommended
Badger	No evidence of badger activity was recorded and no impacts upon badgers are predicted and no further survey or assessment work is recommended.
Otter	The site does not contain any habitats of potential value to otters, no evidence of otter activity was recorded during the field survey. No impacts upon otters are predicted and no further survey or assessment work for otters is recommended
Water Vole	The site does not contain any habitats of potential value to water vole, no evidence of water vole activity was recorded during the field survey. No impacts upon water vole are predicted and no further survey or assessment work for water vole is recommended
Breeding Birds	No significant impacts upon nesting birds are predicted and no further ornithological survey work is recommended
Amphibians	No impacts upon amphibians are predicted and no further survey work is recommended
Reptiles	No significant impacts upon reptiles are predicted and no further survey work is recommended

Recommendations	
Designated Sites	The site lies close to the South Pennine Moors SPA and contains habitat which may be of limited value to nocturnal feeding golden plovers Further survey and assessment work is recommended to quantify the use of the site by golden plover.
Breeding Birds	That removal of trees, shrubs and surface vegetation should be completed outside of the bird breeding season (March to September inclusive). Where this is not possible a suitably qualified and experienced ecologist should complete a survey of the site immediately prior to completion of the proposed works to search for nesting birds and to advise on exclusion zones or timing of works if nesting birds are recorded

1. INTRODUCTION

1.1. Project Background

- 1.1.1. Windy Ridge Recycling Ltd is seeking planning permission to vary conditions 2 (to extend the life of the planning permission to the end of 2044), 6 (to increase vehicle numbers), and 10 (to increase the depth of excavation) attached to planning permission 2020/70/92410/W; to excavate a former landfill to recover recyclable materials; to temporarily store soils on part of the restored quarry area; to form a new access road and to extend the Quarry at Windy Ridge Quarry, Cartworth Moor Road, Holmfirth HD9 2RL (hereafter referred to as 'the site') whose location and extent is shown in Figure 1.

1.2. Ecological Background

- 1.2.1. There have been no previous ecological surveys of the site.

1.3. Project Brief and Objectives

- 1.3.1. **RDF** Ecology has been appointed to undertake a desktop study, extended phase I habitat and protected species walkover survey of the proposed quarry extension area and report on the findings.
- 1.3.2. The objectives of the commission were to:
- To complete a desk-top study to review any existing information regarding protected or notable species and designated sites within a 2 kilometre (km) radius of the site, extended to 10km for International and European conservation sites including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites;
 - To undertake an extended phase 1 habitat and protected species walkover survey to describe and map the habitats on the site and to identify the presence or potential presence of any protected or notable species;
 - To identify and assess potential ecological constraints to the proposed development;
 - To prepare a preliminary ecological appraisal report
 - To provide recommendations for further ecological surveys where necessary; and,
 - Recommend appropriate mitigation measures to enable compliance with wildlife legislation, offset potential negative ecological effects and enhance biodiversity where possible.

- 1.3.3. This report describes the findings of the desktop study and field survey work, considers the potential impacts arising from the proposed development and proposes appropriate mitigation measures.

2. THE DEVELOPMENT PROPOSALS

- 2.1. The proposal considered by this assessment are for an extension of the quarry into areas of improved agricultural grassland to the west of the existing quarry along with the creation of a new quarry access road from Cartworth Moor Road to the south and the existing access would revert to a bridleway and field access track.
- 2.2. The development would result in the loss of all habitats within the site boundary. Quarry restoration after mineral extraction would be back to low input grazed grassland.
- 2.3. Restoration proposals could include the following
 - Retention of boundary dry stone walls where possible
 - Re-seeding of the former access track verges with a suitable wildflower seed mix
 - Restoration of the new access road verges to wildflower grassland
 - Restoration of the site to low input agricultural grassland supporting a wider diversity of native species
- 2.4. The existing quarry operations for which amendments are being sought are already permitted under Planning permission 2020/70/92410/W

3. SURVEY METHODOLOGY

3.1. Desktop Study

- 3.1.1. A desk study was undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Preliminary Ecological Appraisal' (2017). Records of any protected or notable species, habitats and designated nature conservation sites within a 2 km radius of the site were obtained and reviewed. This radius was extended to 10km for International and European conservation sites including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites.
- 3.1.2. The following organisations were contacted for protected sites and species data:
 - West Yorkshire Ecology (WYE)
- 3.1.3. Additional information on sites and species of nature conservation interest was obtained from:
 - Multi Agency Geographic Information for the Countryside (MAGIC) website;
 - Natural England web site and online SSSI database;

3.2. Field Survey

- 3.2.1. The extended phase I habitat study area covered the whole site and extended 50m beyond the site boundary where access was possible.

3.2.1. Extended Phase I Habitat Survey Methodology

- 3.2.1.1. An extended phase 1 habitat survey of the site was completed on 18 April 2022. All habitats within the site were surveyed.
- 3.2.1.2. Habitats present on the site were classified and mapped according to the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat survey methodology (JNCC, 2010).
- 3.2.1.3. A phase 1 habitat survey provides sufficient information on the composition of the vegetation present to enable it to be characterised and assessed.
- 3.2.1.4. Fauna and flora present at the time of survey were recorded and the site was assessed for its potential to support notable and/or protected species that could be impacted by development following CIEEM guidance (CIEEM, 2017 and 2018).
- 3.2.1.5. Target notes were prepared for any features of ecological interest and their locations noted in Figure 3. Plant species were recorded following the

nomenclature in Stace (1997) and lists of species are included in Appendix 1.

3.3. Protected Species

3.3.1. Badger

- 3.3.1.1. Areas of suitable habitat on site and within 50m of the site boundary (where accessible) were searched for evidence of badger with reference to the methodology defined in Harris et al. (1991). The following field signs were recorded, if encountered, during the protected species walkover survey:
- Setts;
 - Latrines;
 - Prints and paths or trackways;
 - Hairs caught on rough wood or fencing; and
 - Other evidence including snuffle holes, feeding remains and scratching posts.
- 3.3.1.2. Where setts were recorded, their status and level of activity was noted. Sett status is broadly categorised as follows:
- Main: generally the largest sett within a badger clan's territory, with a relatively large number of sett entrances with well-worn pathways between them, and conspicuous spoil mounds. This type of sett will be occupied throughout the year and used for breeding;
 - Annexe: normally found within 150m of the main sett comprising many entrances, this type of sett may not be occupied throughout the year, and can be used for breeding if there is more than one breeding sow within the clan;
 - Subsidiary: similar to an annexe sett, but typically located further from the main sett. This type of sett will not be occupied throughout the year and lacks the well-worn paths associated with main and annexe setts; and
 - Outlier: consisting of one or two entrances, this type of sett will be found furthest from the main sett and will only be used sporadically throughout the year.
- 3.3.1.3. The suitability of the existing habitats on site, as badger breeding and foraging habitat, was assessed.

3.3.2. Otter

- 3.3.2.1. Areas of suitable habitat on site and within 50m of the site boundary (where accessible) were searched for evidence of otter (*Lutra lutra*). The following field signs were recorded, if encountered, during the protected species walkover survey:

- Sightings of Otters
- Otter Holts
- Otter footprints
- Otter spraints
- Otter slides

3.3.2.2. The suitability of the existing habitats on site, as otter breeding and foraging habitat, was assessed.

3.3.3. Water Vole

3.3.3.1. Areas of suitable habitat on site and within 50m of the site boundary (where accessible) were searched for evidence of water vole (*Arvicola amphibius*). The following field signs were recorded, if encountered, during the protected species walkover survey:

- Sightings of Water Voles
- Water Vole tunnel entrances
- Water Vole “lawns”
- Water Vole feeding stations
- Water Vole latrines
- Waterside paths
- Runs in vegetation
- Water Vole footprints
- Sounds of Water Voles 'plopping' into the water

3.3.3.2. The suitability of the existing habitats on site, as water vole breeding and foraging habitat, was assessed.

3.3.4. Bats

3.3.4.1. Whilst completing the extended phase I habitat survey a preliminary bat roost assessment was undertaken in accordance with best practice guidelines (Collins 2016 and Hundt, 2012).

Tree Assessment

3.3.4.2. There are no large trees within the site boundary.

Buildings Assessment

3.3.4.3. There are no buildings or other structure suitable for roosting or hibernating bats with the site boundary

Habitat Assessment

3.3.4.4. Habitat within and adjacent to the site boundary was assessed for its suitability for commuting and feeding bats in accordance with current guidance (Table 4.1 in Collins, 2016) with habitats categorised as having negligible, low, moderate or high suitability for commuting and feeding bats and are summarised in Table 3 below:

Table 1— Criteria for habitat suitability assessments (based on interpretation of Collins 2016 and Hundt, 2012)

Habitat Suitability	Description
High	Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, stream, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses and grazed parkland Site is close to and connected to known roosts.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland setting) or a patch of scrub.
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.

3.3.5. Wild Birds

- 3.3.5.1. Habitat within and adjacent to the site boundary was assessed for its suitability for nesting birds. Bird species seen or heard during the survey were recorded.
- 3.3.5.2. On the evening of the phase 1 habitat survey, a nocturnal vantage point survey was completed (22.30 to 23.45) in accordance with the required survey effort prescribed in the WYE methodology (WYE).
- 2.1.3.5. During the surveys birds were observed using binoculars and a field telescope with a 70mm objective lens to gather as much light as possible in low light conditions. In darkness, observations were made with a generation 2 image intensifier supported with an infra-red floodlight where required. The observer also listened for the distinctive calls of golden plover.
- 2.1.3.6. At the end of the survey the recorder undertook a short transect survey around the application site to look for any feeding golden plover within the application site boundary or the adjacent fields.
- 2.1.3.7. In addition at the start of the survey a brief survey of fields south of the application site where golden plover have been previously recorded was completed, in particular looking at fields south of Moorfield House and around Elysium Farm.

3.3.6. Amphibians

Habitat Suitability Index Assessment

- 3.3.6.1. All accessible water bodies within 500m of the site, which are not separated from the site by significant barriers to amphibian movement, were assessed for their suitability as aquatic habitat for Great Crested Newts (*Triturus cristatus*) (GCN) using the criteria in the HSI assessment method developed by Oldham et al (2000) and modified further by the Amphibian and Reptile Groups of the United Kingdom (ARG 2010).

3.3.7. Reptiles

- 3.3.7.1. Any casual observations of reptiles within the site were recorded and the habitats within the site were assessed for their potential value for reptiles.

3.4. Limitation of Field Survey

- 3.4.1. The extended phase 1 habitat survey was undertaken on 18 April 2022 within the period generally considered to be the optimal vegetation survey period (i.e. April to September). Given the timings of the survey and the nature of the highly modified habitats recorded on site it is considered that no limitations are present in the assessment of the site for protected/notable species and habitats. However, an extended phase 1 habitat survey does not comprise a full botanical assessment of all species present within a site; therefore species lists are indicative only.
- 3.4.2. The baseline conditions described in this report are accurate at the time at which the survey was undertaken. Should a considerable time pass (e.g. more than 2 years) and/or conditions/land-use on the site change prior to the commencement of works, it is recommended that an up-date survey is undertaken.

4. DESKTOP STUDY RESULTS

4.1. Introduction

- 4.1.1. The desk study results are summarised below and include a review of data provided by West Yorkshire Ecology (WYE)
- 4.1.2. Data older than 10 years is considered to be less important than more recent data due to the length of time that has elapsed since being collected (and the chance that they are no longer valid for a current assessment) and these have therefore been excluded from the protected species summary unless the historical records are the sole record for that particular species.

4.2. Designated Sites

- 4.2.1. Nature Conservation designations within 2km of the site are shown in Figure 2.
- 4.2.2. The Site is not covered by any statutory nature conservation designations. However there is a single site covered by statutory nature conservation designations within 2km of the Site boundary and 3 sites covered by European designations within 10km of the Site boundary and these are summarised in Table 3 below.

Table 2—Statutory Designations within 2km and 10km of the Site

Site Name	Designation	Distance from Site (at nearest point)
Statutory Designations within 2km		
Dark Peak	SSSI	1.2km S
European Designations within 10km		
South Pennine Moors	SAC, SSSI	1.2km S
Peak District Moors (South Pennine Moors Phase 1)	SPA, SSSI	1.2km S
Key SAC = Special Area of Conservation SPA = Special Protection Area SSSI = Site of Special Scientific Interest		

South Pennine Moors SAC

- 4.2.3. Annex I habitats that are a primary reason for selection of the south Pennine moors SAC include, European dry heaths, Blanket bogs and Old sessile oak woods with *Ilex* and *Blechnum* whilst the Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site include Northern Atlantic wet heaths with *Erica tetralix* and Transition mires and quaking bogs.

South Pennine Moors SPA

- 4.2.4. The South Pennine Moors SPA is a phased designations that comprises Peak District Moors (South Pennine Moors Phase 1) and South Pennine Moors Phase 2. The SPA 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:

Table 3— Qualifying Criteria under Article 4.1 - During the Breeding Season

Species	Qualifying Interest
Golden Plover (<i>Pluvialis apricaria</i>)	752 pairs representing at least 3.3% of the breeding population in Great Britain (Count as at 1990)
Merlin (<i>Falco columbarius</i>)	77 pairs representing at least 5.9% of the breeding population in Great Britain
Peregrine (<i>Falco peregrinus</i>)	16 pairs representing at least 1.4% of the breeding population in Great Britain
Short-eared Owl (<i>Asio flammeus</i>)	25 pairs representing at least 2.5% of the breeding population in Great Britain

- 4.2.5. This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species.

Table 4— Qualifying Criteria under Article 4.2 - During the Breeding Season

Species	Qualifying Interest
Dunlin (<i>Calidris alpina schinzii</i>)	140 pairs representing at least 1.3% of the breeding Baltic/UK/Ireland population

4.2.1. Non-Statutory Designated Sites

Wildlife Sites

- 4.2.1.1. This is the new term for locally designated sites being adopted across West Yorkshire. Districts are currently going through a process of merging old, designated nature conservation sites (SEGI, SSI, Bradford Wildlife Areas (BWA), Leeds Nature Areas (LNA), Kirklees Sites of Wildlife Significance (SWS) and Wakefield Nature Areas (WNA)) into a single Local Wildlife Site (LWS) designation. Sites should be given the same protection as SEGIs/SSIs as set out in UDPs/LDFs.

Sites of Scientific Interest (SSI)

- 4.2.1.2. SSI are an old system of designated sites which are gradually being reviewed and reassessed against new LWS selection criteria and where they qualify will be replaced by LWS designation.

Sites of Wildlife Significance (SWS)

- 4.2.1.3. Kirklees SWS are sites are an old system of designated sites, designated by the local authority on the basis of their wildlife and amenity value. Many of these sites have recently been resurveyed and are being assessed against new LWS criteria and where they qualify will be replaced by LWS designation.
- 4.2.1.4. The Site is not covered by any non-statutory nature conservation designations; however the desktop study indicates that there are five Local Wildlife Sites (LWS's) within 2km of the site boundary and these are summarised in table 5 below.

Table 5—Non-Statutory Designations

Site Name	Interest	Designation	Distance from Site (at nearest point)
Malkin House Wood	Species rich acid woodland	LWS	900m N
Yateholme Reservoirs & Plantations	Mixed habitats including standing and running water, woodland, heath, acid grassland and mire	LWS	1.1km W
Digley Reservoir/Marsden Clough	Mixed habitats including standing and running water, woodland, heath and acid grassland	LWS	1.2km W
Carr Green Meadows Holmbridge	MG5 Grassland	LWS	1.5km NW
New Laith Fields Holmbridge	MG5 and MG grassland spread across 14 neutral grassland fields 12 of which are managed as hay meadows and 2 as permanent pasture.	LWS	1.7km NW

4.2.2. Kirklees Wildlife Habitat Network

- 4.2.2.1. Habitats designated as part of the Kirklees Wildlife Habitat Network are located immediately adjacent to the northern Site boundary. West Yorkshire Ecology have identified the extent of the Kirklees Wildlife Habitat Network (KWHN) which connects designated sites of biodiversity and geological importance and notable habitat links within the district, such as woodlands, watercourses, natural and semi-natural areas. The identification of the Wildlife Habitat Network is intended to protect and strengthen ecological links within the district.
- 4.2.2.2. The purpose of the network is to enable species populations to be sustained by protecting and enhancing the ecological corridors and linkages within the wider environment, including links to adjoining districts.

- 4.2.2.3. Development within the Wildlife Habitat Network will not necessarily be prevented but the council will seek to ensure that development proposals maintain the continuity of the network and protect the nature conservation of the land affected.
- 4.2.2.4. The Site does not fall within an area identified in the Kirklees Wildlife Habitat Network and the closest point of the site to an area within the KWHN is the proposed new site entrance which lies approximately 30m west of the KWHN.

4.2.3. Kirklees Bat Alert Zone

- 4.2.3.1. The Kirklees Bat Alert Zone has been prepared by WYE and identifies areas within 200m of significant water or woodland, features which are good bat feeding habitat.
- 4.2.3.2. The Site does not fall within an area identified within the Kirklees Bat Alert zone.

4.3. Protected Species

4.3.1. Bats

- 4.3.1.1. West Yorkshire Ecology (WYE) provided 55 records for bats within 2km of the site boundary and these are summarised in table 6 below.

Table 6—Summary of West Yorkshire Bat Records

Species	Number of Records	Closest Record to Site
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	25	783
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	3	892
Pipistrelle bat species (<i>Pipistrellus spp.</i>)	1	1023
Leisler's Bat (<i>Nyctalus leisleri</i>)	2	867
Noctule (<i>Nyctalus noctula</i>)	4	867
Brown Long-Eared Bat (<i>Plecotus auritus</i>)	1	1625
Daubenton's Bat (<i>Myotis daubentonii</i>)	5	892
Whiskered Bat (<i>Myotis mystacinus</i>)	1	1047
Natterer's Bat (<i>Myotis nattereri</i>)	1	1812
Unidentified Myotis Bat (<i>Myotis spp.</i>)	6	867
Bats (<i>Vespertilionidae</i>)	6	562
Total	55	

- 4.3.1.2. None of the records relate to the site itself and the closest records are from Holmbridge to the west of the site.
- 4.3.1.3. The closest recorded roost is also located in Holmbridge approximately 780m west of the site boundary and comprises a small maternity roost of common pipistrelle dating from 2015.

4.3.2. Badgers

- 4.3.2.1. WYE provided a single record for a badger sett dating from 1988, but the sett location no longer exists

4.3.3. Otters

- 4.3.3.1. The data provided by WYE did not include any records for otter (*Lutra lutra*) within 2km of the site boundary.

4.3.4. Water Vole

- 4.3.4.1. The data provided by WYE did not include any records for water vole (*Arvicola amphibius*) within 2km of the site boundary

4.3.5. Wild Birds

- 4.3.5.1. Data provided by WYE included 277 bird records of 51 species.
- 4.3.5.2. None of the records related to the site, but there was a cluster of records dating from 2012 from the fields south of Moorfield House (between 150m and 650m from the site boundary) for lapwing (*Vanellus vanellus*), curlew (*Numenius arquata*) and golden plover (*Pluvialis apricaria*).
- 4.3.5.3. These records confirmed that lapwing were breeding in these fields and that golden plover and curlew were present in smaller numbers.

4.3.6. Amphibians

- 4.3.6.1. The data provided by WYE included two records for common toad (*Bufo bufo*) with the closest records being approximately 1.7km south west of the site boundary from Ramsden Reservoir dating from 2015.

4.3.7. Reptiles

- 4.3.7.1. A single record for common lizard (*Lacerta vivipara*) was provided by WYE from Ramsden Rocks Quarry approximately 1.9km south west of the site dating from 2019.

4.4. Non-Native Invasive Species

- 4.4.1. There were no records of non-native invasive species from the site.
- 4.4.2. The desktop study identified 48 records of Japanese knotweed (*Fallopia japonica*) within 2km of the site boundary with all records being more than 850m from the site boundary and largely associated with Digley Brook where it flows through Holmbridge to the west of the site.

- 4.4.3. The data also included 18 records for Indian balsam (*Impatiens glandulifera*) with these being associated with Digley Brook where it flows through Holmbridge to the west of the site and the River Ribble at Washpit approximately 1km north east of the site boundary.

5. SURVEY RESULTS

5.1. Introduction

- 5.1.1. The results of the extended phase 1 habitat and protected species walkover surveys are presented below. Figure 3 illustrates the location and extent of all habitat types recorded on site, with notable features or features too small to map highlighted using Target Notes (TN). A list of species recorded on the site is included in Appendix 1.

5.2. Habitat Descriptions

- 5.2.1. The following Phase 1 habitat types (JNCC codes in parenthesis) were recorded on site during the field survey:
- Improved Grassland (B4);
 - Tall Ruderal Vegetation (C3.1);
 - Standing Water (G1); and,
 - Existing Quarry. (I2.1)
- 5.2.2. The following habitats were recorded adjacent to the Site during the field survey.
- Improved Grassland (B4); and,

5.2.1. Improved Grassland (B4)

- 5.2.1.1. The main quarry extension site (**TN1, TN2**) comprises two fields of improved agricultural grassland. The dominance of agricultural grasses and low abundance of broad-leaved and other species is a result of the intensive grassland management as a silage crop followed by livestock grazing. During the field survey the sward was dense and lush and had achieved a height of between 15-20cm and the fields were being grazed by 3 sheep.



Photograph 1—Improved agricultural grassland on quarry extension area (TN1)

- 5.2.1.2. The grassland is dominated by perennial rye-grass (*Lolium perenne*) with some red fescue (*Festuca rubra*) and common bent (*Agrostis capillaris*).
- 5.2.1.3. Other species present were always at very low abundance included common mouse-ear (*Cerastium fontanum*), dandelion (*Taraxacum officinale* agg.), common sorrel (*Rumex acetosa*), creeping buttercup (*Ranunculus repens*), broad-leaved dock (*Rumex obtusifolius*) and creeping thistle (*Cirsium arvense*).
- 5.2.1.4. The adjacent field also comprise agriculturally improved grasslands.

5.2.2. Tall Ruderal Vegetation (C3.1)

- 5.2.2.1. Around the margins of the fields where grass cutting was more difficult the vegetation comprised the site was mixture of improved grassland and areas of ruderal vegetation **(TN3)** with the latter supporting support stands of common nettle (*Urtica dioica*), creeping thistle and broad-leaved dock along coarse grasses including false oat-grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*) and Yorkshire fog (*Holcus lanatus*).



Photograph 2—Ruderal vegetation on soil mounds (TN3)

5.2.3. Existing Quarry (I2.1)

- 5.2.3.1. To the north and west of the site is the existing quarry and stored soils which supports areas of bare ground and established ruderal vegetation containing creeping thistle, common nettle, broad-leaved dock and coarse grasses with occasional goat willow (*Salix caprea*) saplings.
- 5.2.3.2. In the base of the quarry **(TN5)** is an area of standing water, whose extent varies depending upon weather conditions. This is highly disturbed with quarry traffic regularly travelling through it and it is drawn upon for dust suppression when required.
- 5.2.3.3. The pond supports no aquatic vegetation and the water is very poor quality supporting no aquatic invertebrate life.



Photograph 3—Stored soils within existing quarry

5.2.4. Site Boundaries

- 5.2.4.1. The site boundaries are marked by dry stone walls with some ruderal vegetation along the bases with creeping thistle, common nettle and occasional ragwort.

5.3. Protected Species

5.3.1. Bats

Trees

- 5.3.1.1. The site does not contain any large trees with potential value to roosting bats.

Buildings

- 5.3.1.2. The site does not contain any buildings or other structure of potential value to roosting bats.

Habitats

- 5.3.1.3. The site does not lie within the Kirklees Bat Alert Zone.
- 5.3.1.4. The site is open, exposed and located at a height of approximately 316m with no sheltered foraging habitat for bats. The site does not connect to areas of potential foraging and commuting habitat for bats.
- 5.3.1.5. the closest areas of woodland foraging habitat are White Gate Wood located approximately 450m west of the site boundary and a small area of clough woodland at Cartworth Moor approximately 250m east of the proposed site entrance. Neither area of woodland is linked to the site by suitable commuting corridors.

5.3.2. Badgers

- 5.3.2.1. No badger setts were recorded within or immediately adjacent to site.
- 5.3.2.2. No evidence of badger foraging activity was recorded during the field survey.

5.3.3. Otters

- 5.3.3.1. The site does not contain any habitats of potential value to otter (*Lutra lutra*), no evidence of otter activity was recorded during the field survey.

5.3.4. Water Vole

- 5.3.4.1. The site does not contain any habitats of potential value to water vole (*Arvicola amphibius*), no evidence of water vole activity was recorded during the field survey.

5.3.5. Wild Birds

- 5.3.5.1. During the extended phase 1 habitat survey a pair of curlews (*Numenius arquata*) were observed flying around the fields to the south of the site and two oystercatchers (*Haematopus ostralegus*) were observed in the existing quarry to the north of the site. These were not recorded on subsequent visits to the site when completing nocturnal golden plover surveys. Two calling goldfinches (*Carduelis carduelis*) were observed around the farm buildings to the east of the site and the flew south towards Moorfield House. A single meadow pipit was recorded flying low over the site north towards the heathland area beyond the site boundary.
- 5.3.5.2. An initial nocturnal survey of the site was completed on the evening of 18 April 2022 looking for feeding golden plover and did not record any golden plover activity within the site or within the immediately adjacent fields. Curlew were recorded flying over the fields to the south of the site boundary.
- 5.3.5.3. Lapwing were heard calling from the fields immediately south of Moorfield House.

5.3.6. Amphibians

- 5.3.6.1. In the base of the quarry (**TN5**) is an area of standing water, whose extent varies depending upon weather conditions. This is highly disturbed with quarry traffic regularly travelling through it and it is drawn upon for dust suppression when required.
- 5.3.6.2. The pond supports no aquatic vegetation and the water is very poor quality supporting no aquatic invertebrate life.



Photograph 4—Existing Quarry

- 5.3.6.3. The HSI Score for the pond is set out in table 7 below and indicates that the pond has very poor suitability for great crested newts (*Triturus cristatus*) and other amphibians.

Table 7—HSI Assessment Summary

Habitat Suitability Index Assessment	Pond 1	Notes
Location	1	Optimal Location
Pond Area	0.4	Small variable pond maximum size 280m ²
Pond Drying	0.1	Dries out annually
Water quality	0.01	Very poor water quality – no invertebrate life
Shade	1	Shaded by adjacent quarry faces and soil mounds
Waterfowl	1	No evidence of waterfowl impact
Fish	1	No records of fish stocking and no fish observed
Ponds	0.55	2 ponds within 1km
Terrestrial Habitat	0.01	Located in base of quarry, surrounded by disturbed ground and ongoing operations
Macrophytes	0.3	No emergent or submerged vegetation
HSI Score	0.24	Poor

- 5.3.6.4. Examination of OS maps and satellite imagery indicates that there are no ponds located within 500m of the site boundary that are connected to the site by areas of suitable terrestrial habitat.

5.3.7. Reptiles

- 5.3.7.1. The improved grassland habitat with the site is of low value to reptiles. The drystone walls along the field margins may be more valuable. The areas of heathland just beyond the site boundary to the north are of potentially higher value for reptiles.
- 5.3.7.2. No reptiles were observed during the survey visit which was undertaken in dry, warm and sunny weather with a light to moderate southerly wind.

5.3.8. Non-Native Invasive Species

- 5.3.8.1. No non-native invasive species were recorded from the site.

6. PLANNING POLICY CONTEXT

6.1. National Planning Policy

- 6.1.1. The National Planning Policy Framework (NPPF 2019) (last updated in July 2021) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF sets out the Government's national principles and policies for England on the protection of biodiversity and geological conservation through the planning system.
- 6.1.2. At the heart of the NPPF is a clear "*presumption in favour of sustainable development*" (Para 11).
- 6.1.3. The UK's Sustainable Development Strategy "Securing the Future" sets out 5 guiding principles of sustainable development:
- living within the planet's environmental limits;
 - ensuring a strong, healthy and just society;
 - achieving a sustainable economy;
 - promoting good governance; and
 - using sound science responsibly.
- 6.1.4. Section 15 (paragraph 174) of the NPPF sets out how the planning system should contribute to sustainable development by conserving and enhancing the natural environment through:
- protecting and enhancing valued landscapes, geological conservation interests and soils;
 - recognising the intrinsic character and beauty of the countryside and the wider benefits from natural capital and ecosystem services;
 - maintaining the character of the undeveloped coast;
 - minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
 - preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
 - remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

6.1.5. Paragraph 179 refers to protecting and enhancing biodiversity and geodiversity, stating that plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

6.1.6. Paragraph 180 states that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- opportunities to incorporate biodiversity in and around developments should be encouraged;
- and, planning permission should be refused if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for.

- Paragraph 181 outlines that the following wildlife sites should be given the same protection as European sites:
 - » potential Special Protection Areas and possible Special Areas of Conservation;
 - » listed or proposed Ramsar sites; and
 - » sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.
- 6.1.7. Additionally paragraph 182 notes that *“the presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.”*
- 6.1.8. Annex 1 of the NPPF sets out the detail of implementation.
- 6.1.9. *ODPM Circular 06/2005* (Government Circular: Biodiversity and Geological Conservation—Statutory Obligations and their Impact within the Planning System) continues to provide administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements and supports the expression of national planning guidance set out in NPPF.

6.2. Kirklees Planning Policy

- 6.2.1. Relevant saved policies within the Kirklees UDP are:
 - NE3 Development proposals within or in the vicinity of a Site of Scientific Interest will not normally be permitted unless there is an exceptional requirement for the development and measures will be taken to minimise any detriment to the Site.
 - NE4 Development proposals which would affect a Site of Wildlife Significance will not normally be permitted unless provision can be made to maintain the site’s role for nature conservation.
 - NE5 Development proposals involving land identified on the proposals map as part of a wildlife corridor should make provision for the retention of the corridor and the protection of the wildlife value of the land.

7. EVALUATION AND RECOMMENDATIONS

7.1. Overall Approach to Assessment

7.1.1. The overall approach to assessment adopted by the study team is based upon the guidelines for Guidelines for Ecological Impact Assessment in the UK and Ireland—Terrestrial, Freshwater, Marine and Coastal published by the Chartered Institute of Ecological and Environmental (CIEEM 2018) and can be summarised as below:

1. To identify the likely zone of influence (study area) arising from the whole lifespan of the project;
2. To identify and value the features of nature conservation interest within the ecological study area in a systematic way by establishing levels of interest for ecological features measured against definable criteria and is used to select the species, communities, habitats or sites that require further detailed examination during the process of ecological impact assessment.
3. To identify the biophysical changes attributable to the project that are likely to affect valued ecological features and resources;
4. To assess whether these biophysical changes are likely to give rise to a significant ecological impact, defined as an impact on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area, including cumulative and in-combination impacts;
5. To consider appropriate refinement of the project to avoid or reduce identified negative impacts and incorporate mitigation measures and/or compensation measures for any residual significant negative impacts and ecological enhancement measures to improve the wider environment;
6. To undertake an assessment of the ecological impacts of the refined project and definition of the significance of these impacts, including cumulative and in-combination impacts;
7. To provide advice on the consequences for decision making of the significant ecological impacts, based on the value of the resource, feature or function; and

8. Where appropriate to make recommendations for monitoring the implementation and success of mitigation and compensation measures and ecological outcomes, including feedback in relation to predicted outcomes.

7.2. Determining Value

- 7.2.1. The CIEEM guidelines advocates an approach to the valuation of ecological features using a geographical framework (full details in Appendix 2) based upon the following:
 - International;
 - National; (i.e. England/Northern Ireland/Scotland/Wales)
 - Regional;
 - County/Metropolitan
 - District/Unitary Authority/City or Borough
 - Local/Parish
 - Within zone of influence only
- 7.2.2. The thorough evaluation of the ecological importance of the features of a site is essential in order to assess the significance of the ecological effects of the development proposals.
- 7.2.3. The evaluation criteria are given in detail in Appendix 2. Their aim is to consider the habitats, communities and species present on site in relation to the following:
 1. The legislative framework (e.g. the Wildlife and Countryside Act 1981 and the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC) for the presence of protected species and habitats).
 2. Nature conservation designations, including national site designations (Sites of Special Scientific Interest, National Nature Reserves etc), local designations (Sites of Importance for Nature Conservation, Local Nature Reserves, County Wildlife Sites etc).
 3. Accepted criteria for species rarity and declining populations, and rarity of habitat types or communities, including species and habitats identified in the British Red Data Books, national biodiversity action plan, and species and habitats identified in regional or local biodiversity action plans where available.
 4. Accepted criteria for overall site evaluation (including rarity, diversity, naturalness, historical factors and issues relating to landscape ecology).

7.3. Development Impacts

- 7.3.1. The development as proposed is likely to result in the loss of all habitats within the Site boundary, however there will be a stand-off from the site margins of between 5-10m protecting the boundary dry stone walls and adjacent habitat.
- 7.3.2. The habitat impact will be the loss of approximately 1.75ha of improved agricultural grassland. The new access road will allow the former quarry access to be regraded and sown with a wildflower meadow mix and it use a public bridleway will continue.
- 7.3.3. The amendments to conditions 6 and 10 seek the following:
- Condition 6 - to increase the number of vehicle movements per day from 16 to 30 (15 in and 15 out)
 - Condition 10 – to increase the depth of mineral working from 323m AOD to 313M AOD
- 7.3.4. The proposed restoration of the site is shown in MWP Planning drawing number 10193A/04 dated 22 August 2022. The restoration incorporates both the existing quarry area and the proposed extension area and includes the following:
- Restoration of the site to agricultural grassland (approximately 3.9ha)
 - Creation of moorland restoration in the north west corner of the site (approximately 0.25ha)
 - Creation of a small pond/drainage sump with seasonal wet grassland in the north west corner of the site adjacent to the moorland restoration (approximately 0.02ha)
 - Reconstruction of the existing dry stone walls in their original locations.
 - The new access road would also be restored back to agricultural grassland.

7.4. Nature Conservation Designations

7.4.1. Statutory Designations

- 7.4.1.1. The Site is not covered by any statutory nature conservation designations.
- 7.4.1.2. The nearest site covered by a statutory designation is the Dark Peak SSSI located approximately 1.2km south of the Site.
- 7.4.1.3. European Designations within 10km include the South Pennine Moors SAC located approximately 1.2km south of the Site and the Peak District Moors (South Pennine Moors Phase 1) SPA located approximately 1.2km south of the Site. The habitats within the site do not appear to be suitable for use by feeding golden plover (*Pluvialis apricaria*) for which the SPA's have been

designated and comprises two small, enclosed fields of improved grassland each extending to approximately 0.82ha.

- 7.4.1.4. Despite the apparent lack of suitability of the fields for nocturnal feeding golden plover further survey is recommended in accordance with the draft SPA Bird Survey Methodology prepared by West Yorkshire Ecology Service to confirm whether or not these fields are used by nocturnal feeding golden plover.

- 7.4.1.5. **Further survey and assessment are recommended**

7.4.2. Non-Statutory Designations

- 7.4.2.1. The site is not covered by any non-statutory nature conservation destinations.
- 7.4.2.2. The nearest Local Wildlife Site (LWS) is Malkin House Wood LWS located approximately 900m north of the site boundary
- 7.4.2.3. **No** significant off site impacts upon LWS are predicted and **no** further survey and assessment work are recommended.

Landscape Designations

- 7.4.2.4. The Site is not located within habitats included within the Kirklees Wildlife Habitat Network (KWHN).
- 7.4.2.5. The development would not impact directly upon habitats contained within the KWNH. No significant off sites impacts are predicted to arise from the development and the closest habitats within the KWNH are located approximately 30m east of the site and includes woodland around Arrunden and Cartworth Moor.
- 7.4.2.6. The Site does not lie within the KWNH, **no** significant off-site impacts are predicted, **no** impacts upon the integrity of the adjacent habitats within the KWNH are predicted and **no** further survey or assessment work is recommended.
- 7.4.2.7. The development does not conflict with UPD Policy NE5.

7.5. Habitats

- 7.5.1. The improved agricultural grassland and ruderal vegetation habitats within the site have no intrinsic botanical value supporting a very limited range of common and widespread species and their loss would only be felt within zone of influence of the development and therefore **no** compensation or mitigation measures are proposed and **no** further survey or assessment work is recommended with regard to their botanical value.

7.6. Protected Species

7.6.1. Bats

- 7.6.1.1. All UK species of bat are afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act and also receive full protection as European Protected Species under Section 41 of The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2.

Buildings

- 7.6.1.2. The site does not contain any buildings of potential value to roosting bats
- 7.6.1.3. **No** significant impacts upon roosting bats in buildings are predicted and **no** further survey and assessment work is recommended.

Trees

- 7.6.1.4. The site does not contain any trees of potential value to roosting bats
- 7.6.1.5. **No** significant impacts upon roosting bats in trees are predicted and **no** further survey and assessment work is recommended.

Habitats

- 7.6.1.6. The site is located in an area of open land with no significant features for use by commuting or feeding bats. The habitats within the site are no significant value to feeding bats due to their exposure and open nature and as a consequence of being isolated from other habitat areas.
- 7.6.1.7. The site habitats are assessed to be of low to negligible value to feeding and commuting bats and their loss in the area would not result in a significant reduction of suitable habitat.
- 7.6.1.8. **No** significant impacts upon commuting or feeding bats are predicted and **no** further survey and assessment work is recommended.

7.6.2. Badgers

- 7.6.2.1. Badgers are protected under the Protection of Badgers Act 1992.
- 7.6.2.2. No badger setts were recorded within or immediately adjacent to site and no evidence of badger foraging activity was recorded during the field survey.
- 7.6.2.3. **No** impacts upon badgers are predicted and **no** further survey or assessment work is recommended.

7.6.3. Otters

- 7.6.3.1. Otters are afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act and also receive full protection as European Protected Species under Section 41 of The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2.
- 7.6.3.2. The site **does not** contain any habitats of potential value to otters, **no** evidence of otter activity was recorded during the field survey and the desktop study did **not** provide any records for this species within 2km of the site boundary. **No** impacts upon otter are predicted and **no** further survey or assessment work for otters is recommended.

7.6.4. Water Vole

- 7.6.4.1. Water vole is afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act.
- 7.6.4.2. The site **does not** contain any habitats of potential value to water vole, **no** evidence of water vole activity was recorded during the field survey and the desktop study did **not** provide any records for this species within 2km of the site boundary. **No** impacts upon water vole are predicted and **no** further survey or assessment work for water vole is recommended.

7.6.5. Wild Birds

- 7.6.5.1. With certain exceptions, all wild birds, their eggs, nests and young are protected under the *Wildlife and Countryside Act 1981* (as amended).
- 7.6.5.2. The habitats with the site are unlikely to be important to ground nesting species due to the nature of their management. The area of established heathland to the west is likely to be much more value for breeding birds.
- 7.6.5.3. In any case, potential impacts upon nesting birds can be prevented during construction by ensuring that vegetation removal is programmed to occur outside of the bird nesting season (March to September inclusive) or where this is not possible under the supervision of a suitably qualified and experienced ecologist as set out in the recommendations below.
- 7.6.5.4. **No** significant impacts upon nesting birds are predicted and **no** further ornithological survey work is recommended.
- 7.6.5.5. Impacts upon nocturnal feeding golden plover are considered elsewhere and further assessment work is recommended.

7.6.6. Amphibians

- 7.6.6.1. All UK native amphibians are afforded partial or full protection under Section 9 of the *Wildlife and Countryside Act 1981* (as amended) through their inclusion on Schedule 5 of the Act and Great Crested newts (*Triturus cristatus*) are provided the highest level of protection. Great crested newts (GCN) are fully protected from capture, injury, killing and damage or destruction of their breeding sites or resting places under The Conservation of Habitats and Species (as amended) Regulations 2017.
- 7.6.6.2. The site does not contain any ponds suitable for breeding amphibians including GCN, no amphibians were recorded during the field survey. No other ponds linked to the site by semi-natural vegetation were recorded and **no** impacts upon amphibians are predicted and **no** further survey or assessment work is recommended.

7.6.7. Reptiles

- 7.6.7.1. All species of native reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). The sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) are further protected under Conservation of Habitats and Species (Amendment) Regulations 2017.
- 7.6.7.2. The habitats within the site, which is isolated from surrounding areas of habitat, are of low value to reptiles.
- 7.6.7.3. Potential impacts upon reptiles can be prevented during the works proposed by completing them in accordance with standard mitigation measures and under the guidance of a reasonable avoidance measures method statement which sets out methods of working and timing of works.
- 7.6.7.4. **No** significant impacts upon reptiles are predicted and **no** further survey work is recommended.

7.6.8. Non-Native Invasive Species

- 7.6.8.1. No non-native invasive species were recorded on site and no further assessment is recommended.

7.7. Recommendations

7.7.1. Breeding Birds

- 7.7.1.1. Whilst only limited bird activity was recorded from the grasslands with the site these areas could be used by breeding birds during the bird breeding season (March to September inclusive). Given the protection afforded to wild birds and their nests the following precautionary measures are recommended:

- That removal of trees, shrubs and surface vegetation should be completed outside of the bird breeding season (March to September inclusive). Where this is not possible a suitably qualified and experienced ecologist should complete survey of the site immediately prior to completion of the proposed works to search for nesting birds and to advise on exclusion zones or timing of works if nesting birds are recorded.

8. FIGURES

Figure 1—Site Location

Figure 2—Nature Conservation Designations

Figure 3—Phase I Habitats



Windy Ridge Quarry

KEY

Site Boundary

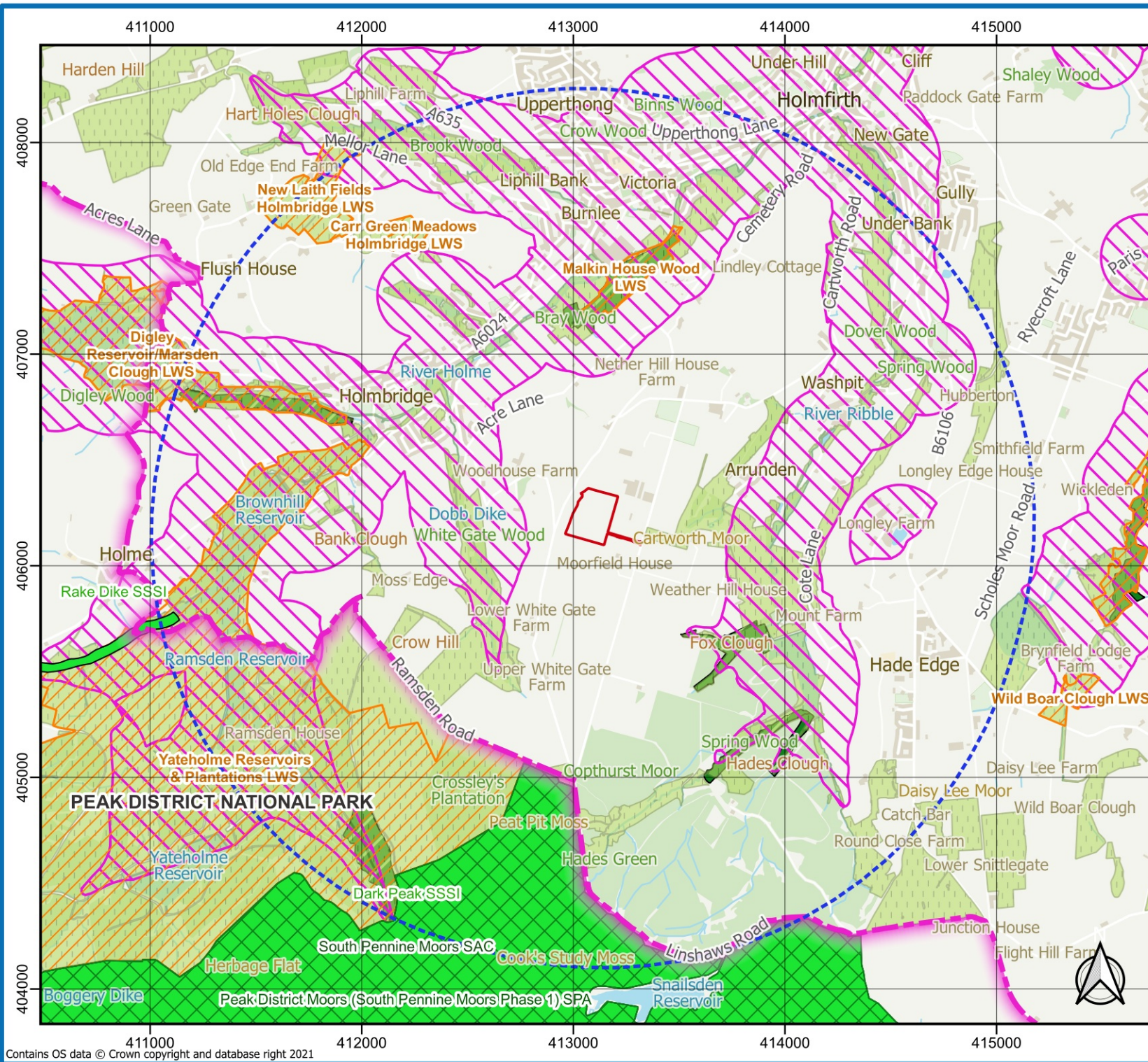
Scale: 1:20,000 @A4

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Fig 1 - Site Location



Windy Ridge Quarry

KEY

- Site Boundary
- 2km Site Buffer
- Statutory Designations**
 - National Park Boundary
 - Special Areas of Conservation
 - Special Protection Area
 - Sites of Special Scientific Interest
- Non-Statutory Designations**
 - Local Wildlife Sites
 - Bat Alert Zones
 - West Yorkshire Wildlife Habitat network
- Ancient Woodlands**
 - Ancient & Semi-Natural Woodland
 - Ancient Replanted Woodland

Scale: 1:25,000 @A4

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Fig 2 - Designations



Windy Ridge Quarry

KEY

Site Boundary

Phase 1 Habitats

Improved grassland

Tall ruderal vegetation

Standing water

Q Quarry

Buildings

Dry stone wall

● Target Notes

Scale: 1:3,000 @A4

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Fig 3 - Phase 1 Habitats

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10. APPENDICES

10.1. Appendix 1—List of Species

English Name	Scientific Name	Grassland	Existing Quarry
Common Bent	<i>Agrostis capillaris</i>	F	O-LF
Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>	VR	O
Cow Parsley	<i>Anthriscus sylvestris</i>	R	O
False Oat Grass	<i>Arrhenatherum elatius</i>	LF	LF
Wavy Bitter-cress	<i>Cardamine flexuosa</i>	O	O
Common Mouse-ear	<i>Cerastium fontanum</i>	O	O
Spear Thistle	<i>Cirsium vulgare</i>	LF	F-LA
Crested Dog's Tail	<i>Cynosurus cristatus</i>	VR	R
Cock's Foot	<i>Dactylis glomerata</i>	O	O-LA
Foxglove	<i>Digitalis purpurea</i>		R
Common Couch	<i>Elytrigia repens</i>		O-LF
Red Fescue agg.	<i>Festuca rubra</i> agg.	O	O
Cleavers	<i>Galium aparine</i>	R	O
Hogweed	<i>Heracleum sphondylium</i>	VR	O
Yorkshire Fog	<i>Holcus lanatus</i>	O-LF	F
White Dead-nettle	<i>Lamium album</i>	R	O
Perennial Ryegrass	<i>Lolium perenne</i>	D	F
Ribwort Plantain	<i>Plantago lanceolata</i>	VR	O
Greater Plantain	<i>Plantago major</i>	R	
Knotgrass agg.	<i>Polygonum aviculare</i> agg.	R	R
Bramble agg.	<i>Rubus fruticosus</i> agg.		O
Common Sorrel	<i>Rumex acetosa</i>	O	O
Broad-leaved Dock	<i>Rumex obtusifolius</i>	R	
Goat Willow	<i>Salix caprea</i>		O
Common Chickweed	<i>Stellaria media</i>	O	
Dandelion	<i>Taraxacum officinale</i> agg.	R	
White Clover	<i>Trifolium repens</i>	O-LF	O-LF
Common Nettle	<i>Urtica dioica</i>	LF	F-LA

10.2. Appendix 2—Valuation Criteria

- 10.2.1. Guidelines for ecological evaluation and the assessment of impacts have been published by Institute of Environmental Assessment (1995) and the Chartered Institute of Ecology and Environmental Management (CIEEM 2018).
- 10.2.2. The value that is attached to an ecological resource influences:
- whether, as part of screening, potentially affected features or resources are considered sufficiently valuable that there could be a significant effect that would trigger an EIA;
 - whether, as part of scoping, ecological features or resources are considered for inclusion in the EcIA—this is influenced by their value in relation to a ‘threshold’ level of value that should be defined during scoping;
 - deciding what mitigation is appropriate and
 - considering legal and policy implications.

10.2.1. Legislative Framework

- 10.2.1.1. Species, communities or habitats receiving legal protection under UK or EC law have high importance on national and international scales.
- 10.2.1.2. Internationally important sites include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. In the UK candidate SACs, potential SPAs and proposed Ramsar sites should be given the same consideration as designated sites in accordance with country specific policies and supporting guidance.
- 10.2.1.3. Species, communities or habitats requiring protection under EC law are listed on schedules I and II (whose conservation requires the designation of Special Areas of Conservation), IV (species in need of strict protection) and V (species whose exploitation may be subject to management measures) of the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC). The enabling legislation for the UK is the Conservation (Natural Habitat, &c) Regulations 2017. Species may also be scheduled under Appendix 1 of the Convention on the Conservation of European Wildlife and Natural Heritage 1979 (Bern Convention).
- 10.2.1.4. Other sites of international importance designated under international obligations include Biosphere Reserves (UNESCO Man and Biosphere Programme), Ramsar Sites (Convention on Wetlands of International Importance especially as Wildfowl Habitat 1971) and Special Protection Areas (EC Wild Birds Directive 79/409).

- 10.2.1.5. Species with special protection under UK law are listed on the schedules of the Wildlife and Countryside Act 1981 and amendments. The act also gives rise to statutory site designations i.e. National Nature Reserves, Sites of Special Scientific Interest, Areas of Special Protection for Birds, and orders e.g. Limestone Pavement Orders.

10.2.2. UK Site Designations

- 10.2.2.1. Sites of national importance include the statutorily designated Sites of Scientific Interest (SSSI) and National Nature Reserves (NNRs).
- 10.2.2.2. Lower levels of importance attach to locally designated sites such as those non-statutory site designations applied by Local Authorities or Wildlife Trusts e.g. Sites of Importance for Nature Conservation (SINC's or equivalent) or Local Nature Reserves designated under the National Parks and Access to the Countryside Act 1949. Such sites may be considered to be of High Local Importance i.e. important at the county or metropolitan level (CIEEM 2018).

10.2.3. Rarity of Species and Habitats

- 10.2.3.1. The British Red Data Book for vascular plants (Perring and Farrell 1983) lists 317 species or subspecies as extinct, endangered, vulnerable and rare. Nationally rare species are defined as occurring in 1–15 10km squares of the national grid in Britain, nationally scarce species occurring in 16–100 10km squares. The presence of a breeding population of any nationally rare species is of national importance whereas a breeding population of a nationally scarce species is of regional importance. Assemblages of 2 or more species may increase the importance of a site further.
- 10.2.3.2. Regional rarities are defined as occurring in 15 or fewer localities or 1km squares in a former Nature Conservancy Council region (NCC 1989).
- 10.2.3.3. Biodiversity: The UK Steering Group Report contains a “Long List” of key species in the UK that fall into 1 or more of the following categories: threatened endemics or globally threatened; where the UK holds greater than 25% of the world population; where numbers or range have declined by more than 25% in the last 25 years; nationally rare species; and statutorily protected species. Presence of viable populations of such species may be of high importance.
- 10.2.3.4. County floras and biodiversity action plans, or district action plans may identify species that are rare at the county or district level. Viable populations will therefore have conservation importance in these contexts.

- 10.2.3.5. Further information on species rarity may be found in Scarce Plants in Britain (Stewart et al 1994) and the Atlas of the British Flora (Perring and Walters 1962) and subsequent revisions.
- 10.2.3.6. Biodiversity: The UK Steering Group Report has identified a number of key habitats under the following criteria: those for which the UK has international obligations; rare habitats or those with high rates of decline; functionally critical habitats (marine areas); and habitats that are important for key species. Sites containing good examples of viable areas of any key habitat may be considered nationally important.
- 10.2.3.7. Importance may be attached to plant community types defined in the National Vegetation Classification (Rodwell 1991 etc) that are also described as rare, declining or with restricted distributions or are identified as being of particular botanical importance (NCC 1989).

10.2.4. Criteria for Overall Site Evaluation

- 10.2.4.1. The accepted criteria for site evaluation are set out by Ratcliffe (1977) in a Nature Conservation Review and are also explained in Guidelines for the Selection of Biological SSSI's (NCC 1989). The principal criteria are briefly outlined below:
- 10.2.4.2. **Naturalness.** Truly natural habitats are valued highly but are rare in Britain and most sites are modified and semi-natural at best. Physical habitat modifications vary greatly in their impact, some being beneficial whilst others are harmful. A greater degree of conformity of a particular community or site with semi-natural rather than highly modified vegetation types in the National Vegetation Classification and the absence of species indicating disturbance are likely to lead to attachment of higher importance. However, note that communities that appear to be intermediate between semi-natural NVC types are not necessarily of lesser quality.
Size. The area of a site or habitat judged to be viable varies greatly between different habitat types and with factors such as the condition of the habitat, the shape of the habitat area and surrounding land use. In addition, the territorial requirements of particular species within the site/habitat and habitat management factors may need consideration.

In general, larger sites or areas of habitat tend to be valued more highly because of the greater population sizes and hence more robust populations of the species within them; the potential for increased site or habitat diversity and hence greater species-richness over a larger area; and a reduced importance of edge effects (pollution drift, habitat degradation/change for other reasons at the site edge) if the site is block

rather than ribbon shaped. Small sites become increasingly important in areas of little semi-natural habitat.

Rarity. Criteria for rarity of species and habitats are outlined above. The scarcer the habitat or species then the higher the level of importance attached.

Diversity. Diversity tends to be valued positively as it increases. At the phytosociological level, some habitats are more species-rich than others and so have a higher value, provided that the richness does not involve non-native species. Some plant communities are intrinsically more species-rich than others so comparisons should only be made between the same community type.

The standard of floristic diversity is guided by the floristic tables within the National Vegetation Classification (NVC) (Rodwell 1991 etc). A community having more than 75% of the total plant species list for its type in the NVC would be rated very highly. Diversity of different communities within a vegetation formation (e.g. woodland) may also be rated highly as may structural diversity (e.g. rides, glades and differing age structures or canopy layering in woodland). Habitat diversity across a site may also increase its importance.

Fragility. Fragility is a measure of the intrinsic sensitivity of nearly all natural and semi-natural habitats and species to human impact. It is the fragility of such habitats and species which causes them to be more highly valued than any of the artificial substitutes which replace them through human activity; and the greater their fragility the greater their value. Fragility is therefore clearly related irreplaceability or non-recreatability. Re-creation of habitats that have taken centuries to develop, sometimes with centuries of traditional management, is impossible to the full extent of their former complexity.

Typicalness. Typicalness is an indication of how characteristic the features of a site are compared to its particular ecosystem. It is intended as a guard against designation of those sites with unusual features as being always the most important.

Position in an Ecological/Geographical Unit. This is a landscape ecological criteria designed to identify sites or habitats which may be important to maintaining the viability of a larger group thereof; or which is essential in maintaining the population of a species with a large territory spanning several sites; or is one of a number of sites important to a

metapopulation of a species in fragmented landscapes; or may be important in a wildlife corridor or network of habitat patches.

10.2.5. Amenity Value

- 10.2.5.1. The amenity value of a site in ecological terms is generally seen as its value for the study or quiet enjoyment of wildlife. Sites with high intrinsic appeal and good access are therefore regarded as important in this context. Also important are issues such as site safety, proximity to schools and population centres and site management difficulties. Less emphasis is placed on the criteria outlined in section 9.1.4 in such situations.

10.2.6. Ecological Importance Summary Table

- 10.2.6.1. The following table has slightly modified from Regini (2000) with reference to CIEEM 2018. Its definitions are adopted in this report. Where species, habitats or sites occur in more than one category, the highest level of importance is applicable. Sites that meet the criteria for a particular designation are afforded the level of importance corresponding to that designation whether or not they are actually designated.

Table 8—Ecological Importance Summary Table

Level of Value	Examples
International	An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve). A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. A regularly occurring, nationally significant population of any internationally important species. Also a regularly occurring and nationally significant number of an internationally important species during a critical phase of its life cycle.
National	A nationally designated site (SSSI, ASSI, NNR, Marine Nature Reserve) or a discrete area, which meets the published selection criteria for national designation (e.g. SSSI selection guidelines). A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (see local BAP). A regularly occurring, regionally or county significant population of any nationally important species. Also a regularly occurring and regionally or county significant number of a nationally important species during a critical phase of its life cycle.

Level of Value	Examples
Regional	Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole; Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile; Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation; A regularly occurring, locally significant number of a regionally important species during a critical phase of its life cycle; Sites which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.
County / Metropolitan	Semi-natural ancient woodland greater than 0.25 ha; County/Metropolitan sites and other sites which meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County / metropolitan; A viable area of habitat identified in County BAP; Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan "red data book" or BAP on account of its regional rarity or localisation; A regularly occurring, locally significant number of a County/Metropolitan important species during a critical phase of its life cycle.
District / Borough	Semi-natural ancient woodland smaller than 0.25 ha; Areas of habitat identified in a sub-County (District/Borough) BAP or in the relevant Natural Area profile; Local Nature Reserves selected on District/ Borough criteria Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource; A diverse and/ or ecologically valuable hedgerow network; A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation; A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.
Parish / Neighbourhood	Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. species-rich hedgerows. Local Nature Reserves selected on Parish criteria.
Negligible	Low grade, widespread and common habitats.