APPENDIX 11 – ECOLOGY AND NATURE CONSERVATION

APPENDIX 11.1 ECOLOGICAL APPRASIAL

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Shelton Road, Corby
Preliminary Ecological Appraisal

April 2018

KSP Renewables Limited

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Version	Date	Author	Checked	Approved
Final	06/01/2019	L Robinson	C Cartwright	S Bracken
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Contact Details can be found at the end of this document

1.0 Executive Summary

1.1 KSP Renewables Ltd to undertake a Preliminary Ecological Appraisal (PEA) of land associated with Willowbrook Industrial Estate. In the absence of mitigation, a number of ecological constraints have been identified. Constraints with associated recommendations/requirements are:

- **Potential Local Wildlife Site & Lowland Mixed Deciduous Woodland HPI:** Retained trees must be suitably protected during the construction phase and during both the construction and operational phases. Methods of working should comply with The Environment Agency Pollution Prevention Guidelines to avoid potential impacts from sediment/pollution discharge upon terrestrial and aquatic habitats within the pLWS.

- **Bats:** Alternative roost provision i.e. bat boxes, is required to ensure no net loss of roosting resource in the pLWS occurs as a consequence of elevated noise during construction and operation. A Construction and Environmental Management Plan (CEMP) should be developed to ensure short-term impacts, as a result of noise/vibrations and/or lighting are avoided/minimised as far as possible. A sensitive lighting regime, during the operational phase, should be developed to ensure boundary habitats continue to be of value to commuting and foraging bats.

- **Badger:** A Badger Survey, including all land within 30 metres of the site's boundary, and delivered in accordance with Harris et al. (1989), should be undertaken.

- **Dormouse:** Tree protection fencing in accordance with BS5837 should be installed prior to works commencing around the root protection zones of all retained trees within the eastern part of the site and the southern edge of the adjacent pLWS.

- **Otter and Water Vole:** The presence of Otter and Water Vole along the Willow Brook should be established in order to determine whether these species could be affected by the construction and/or operation of the new facility.

- **Breeding Birds:** Areas of suitable bird nesting habitat should be cleared from September to February, outside of the recognised bird nesting season. Where it is necessary to clear bird nesting habitat between March and August, a suitably qualified ecologist should carry out a nesting bird check immediately prior to its removal.

- **Reptiles and Common Toad:** All areas of suitable terrestrial habitat must be cleared following a Precautionary Working Method Statement (PWMS) under the direct supervision of a suitably qualified ecologist. Clearance should be timed when reptiles are active. Temporary protective fencing, positioned between retained habitats and the working footprint would prevent accidental killing/injury of reptiles/Common Toad during construction.

- **Great Crested Newts:** eDNA Survey of waterbodies in the pLWS is recommended to establish the proximity of GCN populations to the site. If GCN are confirmed within 100 metres it will be necessary to keep habitat loss or damage below 100 metres^2 in order to avoid triggering the need for a European Protected Species licence.

2.0 Introduction

Background

2.1 Keystone Ecology was instructed by KSP Renewables Ltd to undertake a Preliminary Ecological Appraisal (PEA) of land associated with Willowbrook Industrial Estate. The proposed Corby Energy from Waste (EfW) facility is located off Shelton Road, Corby (central grid reference SP 9100 9088).

2.2 Planning permission for a gasification plant was granted at this site in 2016 (application reference: 16/00028/WASFUL) and a new application is proposed which uses alternative technology and incorporates a taller stack height.

Aims and Objectives

2.3 The aims and objectives of the PEA are to:

- Provide the results of an Extended Phase I Habitat Survey and desk study;
- Identify key ecological constraints to the proposed development;
- Inform master-planning/design/proposed works methods to allow significant ecological effects to be avoided or minimised;
- Identify further ecological surveys needed to inform Ecological Impact Assessment (EcIA) and the scope/design of such surveys;
- Allow likely mitigation or compensation measures to be developed;
- Form the basis for agreeing the scope of an EcIA with the relevant consultees (if required); and
- Highlight opportunities for ecological enhancement.

2.4 The following ecological features are relevant to this exercise:

- Statutory and local designated wildlife sites;
- Habitats of Principal Importance (HPI) in England or local Biodiversity Action Plan (BAP) habitats and networks of these habitats;
- Ancient woodland inventory sites;
- Important hedgerows (as defined by The Hedgerows Regulations 1997);
- Veteran trees;
- Legally protected species;

- Species of Principal Importance (SPI) or local BAP species;
- The wider green infrastructure resource; and
- Invasive species.

Site Context

2.5 The site is located along the eastern perimeter of the Willowbrook Industrial Estate and comprises a large car forecourt with a sparse ephemeral/short perennial community growing between strips of hard standing. The site is approximately 2.9 hectares in size. A narrow band of poor semi-improved grassland, also supporting scattered scrub and tall ruderal vegetation, is present along the northern site boundary with a line of immature trees along the eastern boundary.

2.6 Large car forecourts lie to the west of the site, with numerous steel clad industrial units located to the south. The Corby Northern Orbital Road is under construction and is located approximately 120 metres to the north with habitats associated with a potential Local Wildlife Site (pLWS), associated with the former Tata Steelworks in-between. Habitat types within the adjacent pLWS include a mosaic of scrub, bare ground, the Willow Brook, broadleaved woodland and 2 waterbodies.

3.0 Methodology

3.1 This report has been produced with reference to BS 42020:2013 Biodiversity - Code of Practice for Planning, Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) and with CIEEM Report Writing Guidelines (CIEEM, 2017).

Desk Study

3.2 Information from Northamptonshire Biodiversity Records Centre (NBRC) was received, and Natural England site designations accessed on 18th May 2018. Refer to *Appendix 1* for details of records requested, search radii and sources of information.

Field Survey

3.3 The Extended Phase I Habitat Survey was undertaken on 9th April 2018 by an Assistant Ecologist from Keystone Ecology (Jack Howell, BSc (Hons). The survey area is illustrated on *Drawing Number: 182835/1/dwg1.*

3.4 Phase I Habitat Survey (JNCC, 2010) is a standard technique for obtaining baseline ecological information for large areas of land in which the main vegetation types present within the survey area are mapped using a standard set of habitat categories.

3.5 In addition to mapping, each of the main habitats within the survey area was described; including details of component plant species abundances (recorded using the DAFOR scale[1]).

3.6 Incidental observations of protected and/or SPI/local BAP species and the potential for such species to occur on site (and in the surrounding landscape where relevant) were also noted; however, no specific protected/SPI/local BAP species surveys were undertaken. The potential of the site for foraging/commuting bats has been determined in accordance with Table 4.1 of Collins (2016).

Nomenclature

3.7 The English names of flora and fauna species are given in the main text of this report. Scientific names are used only in the absence of English names. Vascular plants and Charophytes follow the nomenclature of The Botanical Society for the British Isles database (2007) with all other flora and fauna following the UK Species Inventory (Natural History Museum, 2016).

Limitations

3.8 The results of the survey and assessment work undertaken by Keystone Ecology are representative at the time of surveying.

3.9 This document does not contain a comprehensive list of botanical species on site. Only plant species characteristic of each habitat and incidental observations of notable plant species

[1] D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

were recorded. In addition, many plant species are only evident at certain times of the year and so some plant species may have gone undetected.

3.10 The data held by consultees may not be exhaustive. The absence of records does not necessarily indicate absence of a species/habitat from an area but rather that these have not been recorded or are perhaps under-recorded within the search area.

3.11 The accuracy of data held by consultees varies due to the quality and scale that they were digitised to, the supporting information used to define locations/boundaries and also sensitivity of the data itself. Keystone Ecology cannot take responsibility for the accuracy of external data sources and as such discrepancies and inaccuracies may occur.

3.12 NBRC do not hold information on important hedgerows, veteran trees or ancient woodland less than 2 hectares in size.

3.13 Unless otherwise stated survey grid references have been recorded using a hand-held GPS receiver (Garmin GPS map 60CSX) with a manufacturer's stated accuracy of 3-5 metres when not in tree canopy, steep terrain or other enclosed environments.

4.0 Results and Evaluation[2]

Sites and Habitats Identified by the Desk Study

Table 1: Sites and Habitats Identified by the Desk Study

Name	Distance from Proposed Development Site (m)	Details	Potential Constraint
European Statutory Sites			
Rutland Water Ramsar Site	14,401	Rutland Water is a large eutrophic man-made pump storage reservoir created by the damming of the Gwash Valley in 1975. The reservoir is in a lowland setting receiving the majority of its water from the Nene (90%) and Welland (10%). In general the reservoir is drawn down in the summer and filled during the autumn and winter months when river levels are high. The lagoons are one of the most important areas for wintering and breeding wildfowl. The reservoir regularly supports internationally important numbers of Gadwall and Northern Shoveler and nationally important numbers of 8 other species of wildfowl.	No - given the scale of the development and the distance to the Ramsar Site, no adverse impacts on the integrity of the site and its qualifying species are predicted.
Rutland Water SPA	14,400	This site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) by supporting populations of European importance of Gadwall and Northern	No - given the scale of the development and the distance to the SPA, no adverse impacts on the integrity of the site and its qualifying species are

[2] An indication of the ecological value of features present has not been undertaken because those features identified as ecological features that are potential constraints to development will typically require further survey to make this valuation.

Name	Distance from Proposed Development Site (m)	Details	Potential Constraint
		Shoveler. The site also regularly supports at least 20,000 waterfowl and qualifies as a wetland of international importance.	predicted.
Upper Nene Valley Gravel Pits Ramsar Site	13,381	This chain of both active and disused sand and gravel pits form an extensive series of shallow and deep open waters which occur in association with a wide range of marginal features, such as sparsely-vegetated islands, gravel bars and shorelines and habitats including reed swamp, marsh, wet ditches, rush pasture, rough grassland and scattered scrub. This range of habitats and the varied topography of the lagoons provide valuable resting and feeding conditions for concentrations of wintering waterbirds, especially ducks and waders. Species such as Golden Plover and Lapwing also spend time feeding and roosting on surrounding agricultural land outside the Ramsar Site.	No - given the scale of the development and the distance to the Ramsar Site, no adverse impacts on the integrity of the site and its qualifying species are predicted.
Upper Nene Valley Gravel Pits SPA	13,381	The site qualifies under Article 4.1 of the Birds Directive (Directive 2009/147/EC) as it is used regularly by 1% or more of Great Britain's populations of Golden Plover and Bittern. The site also qualifies under Article 4.2 of the Directive as it is used regularly by Gadwall. The site also qualifies under Article 4.2 as it is used by more than 20,000 waterbirds in any season.	No - given the scale of the development and the distance to the SPA, no adverse impacts on the integrity of the site and its qualifying species are predicted.

Name	Distance from Proposed Development Site (m)	Details	Potential Constraint
National Statutory Sites Designated for Bats and Birds			
Eye Brook Reservoir SSSI	6,233	A major wetland area which combines an extensive sheet of open water with a complex of wetland and lakeside habitats including mudflats, marsh, pasture, broad-leaved woodland, and broad-leaved, mixed and coniferous plantations. In autumn and winter the site attracts large numbers of ducks most notably Wigeon, Mallard, Teal and Pochard, while in spring and autumn flocks of a wide variety of wading birds on passage use the area for feeding. Additionally, the woodlands and plantations provide a winter-feeding habitat for a variety of birds, while the mix of terrestrial habitats supports a diverse breeding bird community.	No - the Site does not fall within a SSSI Impact Risk Zone indicating that an energy recovery facility, or similar such development, would generate noise/pollutants that would have a negative effect on the particular sensitivities of features for which this SSSI is notified.
Bulwick Meadows SSSI	5,897	Two adjacent meadows occupying the valley side and flood plain of the Willow Brook. Water draining from the Lower Lincolnshire Limestone emerges as seepage areas where it meets the more impervious Lower Estuarine Series deposits. This, together with the high water table of the valley floor alluvium has given rise to a complex mosaic of marshy grassland communities. The meadows are the only known Northamptonshire locality for Flat Sedge and Common Bistort and have added importance for the presence of breeding Snipe - of which there may not be more	

Name	Distance from Proposed Development Site (m)	Details	Potential Constraint
		than 30 pairs in the county.	
National Statutory Sites			
None within search parameters.			
Local Wildlife Sites Designated for Bats			
None within search parameters.			
Local Wildlife Sites			
Potential Local Wildlife Sites	Immediately adjacent to site	The pLWS, associated with the former Tata Steelworks, supports a matrix of habitats, including deciduous woodland, scrub, grassland, and the Willow Brook which runs near to its southern margin. Waterbodies are also present. The site is unmanaged with large volumes of fly tipped waste present.	Yes - Air and water pollution and/or dust deposition during the construction and operation could generate negative effects on the condition of terrestrial and riparian (Willow Brook) habitats within the pLWS.
HPI Habitats and Ancient Woodland (No. / Closest)			
Deciduous Woodland	8/adjacent to site	Nearby woodland is reasonably isolated by infrastructure.	Yes - Dust deposition and/or air pollution could cause deterioration in habitat quality. Construction could cause accidental damage to trees along the southern edge of the woodland due to proximity.
No ancient woodland within search parameters.			

Name	Distance from Proposed Development Site (m)	Details	Potential Constraint
Important Hedgerows, Veteran Trees, TPOs and Conservation Areas (No. / Closest)			
No information on important hedgerow, veteran trees, TPOs or Conservation Areas available.			

Key to site designations: pLWS – Potential Local Wildlife Site; SPA - Special Protection Area; SSSI - Site of Special Scientific Interest.

Habitats Identified on Site

4.1 The following habitats were identified on site during the course of the field survey (the distribution of these habitats is shown in *Drawing Number: 182835/1/dwg1*):

- Hardstanding
- Ephemeral/Short Perennial
- Poor Semi-Improved Grassland
- Scattered Scrub
- Tall Ruderal
- Line of Trees

Hardstanding

4.2 The site is actively used to store vehicles and is dominated by linear strips of tarmac. Similar habitat extends to the west where a much larger car forecourt exists. Large bands of compacted gravel are present between the bands of hard standing.

Ephemeral/Short Perennial

4.3 The compacted gravel bands, between the tarmac roads, support a sparse ephemeral/short perennial community. This habitat is dominated by low-lying Chickweed and moss spp., with occasional Daisy, Hawkweed spp., Scentless Mayweed, Colt's Foot, Yorkshire-fog and Cock's-foot. Herb Robert, Groundsel and Fescue sp. occur rarely.

4.4 Ephemeral vegetation is also present within a small spoil heap located along the eastern boundary. Additional species within this habitat include occasional Rosebay Willowherb, Bristly Ox-tongue, Mugwort, Common Nettle, Cleavers, Curled Dock and Creeping Thistle. White Dead-nettle, Creeping Buttercup, Greater Stitchwort and Ox-eye Daisy occur rarely.

Poor Semi-improved Grassland

4.5 A strip of grassland runs along the northern edge of the site. The grassland band is approximately 5 metres wide and located on a bank which grades down into a narrow band of ephemeral/short perennial habitat where the substrate becomes compacted rubble adjacent to tarmac.

4.6 The grassland sward is dense and dominated by abundant Perennial Rye-grass, Yorkshire-fog, Cock's-foot and Common Bent interspersed with frequent Common Vetch, Bristly Ox-tongue, Colt's Foot and Ribwort Plantain. Ox-eye Daisy, Common Nettle, Mare's Tail and Meadow Vetchling are also frequent. Creeping Cinquefoil (locally abundant towards the eastern end of the grassland), Hogweed, Field Forget-me-knot, Greater Stitchwort, White Dead-nettle, Creeping Buttercup and Curled Dock, occur occasionally throughout the sward, with Foxglove, Grass Vetchling, Hedgerow Cranesbill, Columbine, Comfrey sp. occurring rarely.

Scattered Scrub

4.7 Scattered low-lying scrub is located within the central portion of the vegetated band associated with the northern part of the site. Vegetation is dominated by Bramble, Dog Rose and Snowberry, with occasional Ash, Silver Birch, Hawthorn, Willow spp. and Hazel saplings. Ground flora is dominated by Cleavers, with frequent Yorkshire-fog, Bramble, Dog Rose and Common Nettle.

Tall Ruderal

4.8 Tall ruderal vegetation is located within the eastern portion of the vegetated band associated with the northern part of the site. This habitat type is dominated by Cleavers, Rosebay Willowherb, Bristly Ox-tongue, Ragwort, Curled Dock and Common Nettle. Scrub species, as described above, occur occasionally within this habitat.

Line of Trees

4.9 A line of immature broadleaved trees, in good condition, delineates the eastern site boundary. Frequently occurring species comprise Ash, Beech and Larch. Willow sp. is occasionally present with Silver Birch occurring rarely with an understory supporting abundant Hawthorn. Ground flora comprises abundant Common Nettle, Bramble, Yorkshire-fog and Hawthorn saplings. Rosebay Willowherb is occasionally present.

HPI and Local BAP Habitats, and Networks of these Habitats Identified on Site

4.10 The line of broadleaved trees along the eastern site boundary is directly connected to woodland associated with the pLWS to the north. On site trees are, therefore, considered part of HPI Lowland Mixed Deciduous Woodland and are of value within the context of green infrastructure. Although all trees on site are proposed for retention, construction could cause accidental damage to the root systems of retained trees, and also those at the southern edge of the pLWS. HPI Lowland Mixed Deciduous Woodland is, therefore, a constraint to development.

Protected Species

4.11 The possibility that protected species will pose a constraint to the proposed development is evaluated for each of the main protected species/groups in *Table 2*, based on assessment of habitat suitability and other relevant factors, such as:

- National distribution of each species/group;
- Previous records of species occurrence obtained through the desk study;
- Connectivity to suitable habitats in the surrounding landscape;
- Field signs (e.g. tracks, droppings, direct sightings) suggesting presence of species within or near to the site;

- Probability of the proposed development having an adverse impact on the species/group if present.

SPI and Local BAP Species

4.12 The possibility that SPI or local BAP species will pose a constraint to the proposed development is evaluated in *Table 3* using the same evaluation criteria as *Table 2* (refer to Paragraph 4.11). Given the large number of SPI and local BAP species, these have only been included in the table if present in the desk study records and/or observed on site during the field survey.

Contribution to the Wider Green Infrastructure Resource

4.13 The site is directly connected to habitats within the pLWS to the north and undeveloped land to the east of Shelton Road and therefore, natural and, in particular, linear habitat types on site contribute to the wider green infrastructure resource. The amount of natural habitat in the vicinity of the site is heavily constrained by development i.e. Corby Northern Orbital Road, the Rockingham Speedway and several large industrial estates, therefore, on site green infrastructure is valuable within such an urban setting.

4.14 The site forms part of the Nene Valley Nature Improvement Area (NIA) although it, in itself, is an actively used car park set in a built up environment. Nene Valley NIA covers an area of 41,000 hectares through the centre of Northamptonshire and overlaps the Site. Including the River Nene and 5 of its tributaries, it is centred on the Upper Nene Valley Gravel Pits SPA, designated for wintering wildfowl. The Nene Valley supports a vast diversity of species in a variety of habitats including reservoirs, wildflower meadows, wet woodland, grazing marshes and urban areas. The NIA seeks to deliver a net gain in biodiversity by 2020 through growth and development, improving the ecological status of the river, enhancing the ecological service provision and enhancing public awareness and benefits of the area in a sustainable way.

4.15 Vegetation around the northern and eastern site boundaries will be retained and connections to wider green infrastructure i.e. adjacent woodland and Willow Brook will be unchanged by proposals.

Invasive Species

4.16 There are no records of invasive species within 0.5 kilometres of the site.

4.17 No invasive species were recorded during the survey.

Table 2: Protected Species Constraints Evaluation

Species/ Group	Desk Study Record (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	SPI	LBAP	Potential Habitat	Other Relevant Factors	Potential Constraint?
Bats	Roosting: Brown Long-eared Bat (1/3201) Pipistrelle Bat species (1/1912) Non-roosting: Barbastelle Bat (1/2391) Daubenton's Bat (5/479) Pipistrelle Bat species (2/1484)	✓*	✓*	There are no roosting opportunities on site. Foraging/commuting habitat is largely restricted to the northern and eastern fringes of the site where vegetation is present. The car park could also be used for foraging by opportunistic bats. The site is of low value to commuting/foraging bats.	Lighting columns are present on site. Artificial lighting may attract common species such as Pipistrelle Spp. and detract others such as Long-eared or Myotis Spp (BCT, 2018). Existing habitat along the northern and eastern boundaries is to be retained. The adjacent woodland is likely to be a valuable resource to roosting/foraging/commuting bats. Species assemblage is likely to be poor along the southern edge of the woodland on account of its lit nature and the disturbed nature of land to the immediate south. Elevated noise, and changes to the current lighting regime could affect roosting and foraging/commuting bats.	Yes – foraging/commuting on site. Yes - roosting bats potentially within the southern edge of the pLWS.
Badger	6/142	×	×	The site provides foraging habitat for this species along the northern and	The adjacent pLWS provides extensive opportunities for this	Yes

Species/ Group	Desk Study Record (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	SPI	LBAP	Potential Habitat	Other Relevant Factors	Potential Constraint?
				eastern boundaries. Vegetated bunds may provide sett building opportunities although no evidence of Badger was observed.	species and setts have been historically recorded. Digging attempts beneath the metal boundary fence are absent and currently habitats on site do not contribute to any territory held by Badger in the locality. Badger, occupying, newly excavated setts could be killed or injured by construction activities.	
Dormouse	None within search parameters.	✓	✓	On site trees are immature and the tree composition and understory is sub-optimal for this species.	Canopy cover along the site's eastern boundary is continuous with woodland within the pLWS to the north that has potential to support Dormice. Suitable habitat is to be retained however it could be affected by accidental damage during construction.	Yes
Otter	None within search parameters.	✓	✓	None present.	The Willow Brook is 30 metres distant and, if present, water quality deterioration during both construction and operation could affect the	Yes

Species/ Group	Desk Study Record (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	SPI	LBAP	Potential Habitat	Other Relevant Factors	Potential Constraint?
					survivability of this species.	
Water Vole	None within search parameters.	✓	✓	None present.	The Willow Brook is 30 metres distant and, if present, water quality deterioration during both construction and operation could affect the survivability of this species.	Yes
Specially Protected Birds	None within search parameters.	n/a	n/a	The site has the potential to support foraging Black Redstart although this species has not been recorded in the north of Northamptonshire before.	There are no nesting opportunities i.e. holes, cracks/crevices which could support nesting Black Redstart.	No
All Other Birds	n/a	n/a	n/a	The scrub and trees provide suitable habitat for a range of common and widespread passerine species.	Construction will result in small losses of nesting bird habitat and negative elevated noise could deter birds from nesting in retained habitats.	Yes
Reptiles	Common Lizard (1/388)	✓	✓	Grassland, scrub and tall ruderal vegetation along the site's northern boundary could support Common Lizard in addition to other common reptiles, including Grass Snake and Slow Worm. South facing banks provide basking	The majority of the Site offers extremely limited foraging opportunity to reptiles. Although Common Lizard can reside in gravel/ephemeral habitat types these are continuously used by vehicles and are heavily disturbed.	Yes

Species/ Group	Desk Study Record (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	SPI	LBAP	Potential Habitat	Other Relevant Factors	Potential Constraint?
				opportunities to reptiles. Refuge opportunities on Site are limited to a single brash pile within the line of trees along the eastern boundary.	Construction will result in small losses of suitable habitat.	
Great Crested Newt	5/184	✓	✓	There are no ponds on site. Suitable terrestrial habitat, offering potential resting places, is limited to habitats along the northern and eastern boundaries. There is at least 1 waterbody within the pLWS to the immediate north. At minimum of 6 additional waterbodies are present to the north of the Corby Northern Orbital Road (CNOR).	85% of the site is occupied by hardstanding/compacted gravel which offers no refuge opportunities to GCN. GCN are unlikely to commute across the site heading southwards as there are no waterbodies in this direction and the surroundings are heavily urbanised. There are no major barriers to GCN dispersal between the pLWS and the site although the intervening habitats are extensive and of high quality. Waterbodies to the north of the CNOR are predominantly isolated from the site by the new road and remnant exclusion fencing, however, some connectivity exits via a single	Yes

Species/ Group	Desk Study Record (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	SPI	LBAP	Potential Habitat	Other Relevant Factors	Potential Constraint?
					culvert under the new road. Construction will result in small losses of suitable habitat.	
Invertebrates	None within search parameters.	n/a	n/a	None present.		No
White-clawed Crayfish	None within search parameters.	✓	✓	None present.	The Willow Brook is 30 metres distant and, if present, water quality deterioration during both construction and operation could affect the survivability of this species. American Signal Crayfish are a threat in Northamptonshire rivers. Willow Brook and adjacent banks will not be directly impacted by the proposals.	Yes
Plants	None within search parameters.	n/a	n/a	None present.		No

*Status dependant on species

Table 3: SPI and Local BAP Species Constraints Evaluation

Species/ Group	Desk Study Record	SPI	LBAP	Potential Habitat	Other Relevant Factors	Potential Constraint?
Amphibians	Common Toad (3/184)	✓	✓	There are no ponds on site. Habitats along the northern and eastern boundaries provide suitable terrestrial habitat.	Construction will result in small losses of suitable habitat.	Yes

5.0 Relevant Legislation and Policy

5.1 This section sets out the wildlife legislation and policy relevant (or potentially relevant pending further survey) to the proposed development based on the findings of the desk study and field survey. Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

5.2 The legislation protection afforded to sites/habitats and species that could be affected by the proposed development is detailed in *Table 4* and *Table 5* respectively.

Table 4: Legislation Protection Afforded to Sites/Habitats that could Potentially be Affected by the Proposed Development

Designated Site/Habitat	Legal Status
LNR (Local Nature Reserves) and Potential Local Wildlife Sites (pLWS)	Under the National Parks and Access to the Countryside Act 1949, LNRs may be declared for nature conservation by local authorities after consultation with the relevant statutory nature conservation agency. Legal protection of LNRs is provided under The Wildlife and Countryside Act 1981 (as amended).

Table 5: Legislation Protection Afforded to Species that could Potentially be Affected by the Proposed Development

Species	Legal Status
European Protected	
Great Crested Newts, Bats, Otter	These animal species and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2010 (as amended), which makes it illegal to: Deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs; Deliberately disturb[3] such an animal; Damage or destroy a breeding site or resting place of such an animal. European Protected Species (EPS) licences can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed: • The development is for reasons of overriding public interest; • There is no satisfactory alternative; and

[3] Under the Conservation Regulations, disturbance of protected animals includes in particular any disturbance which is likely to: (i) impair their ability to survive, breed or reproduce, or to rear or nurture their young or to hibernate or migrate; (ii) significantly affect the local distribution or abundance of the species in question.

Species	Legal Status
	• The favourable conservation status of the species concerned will be maintained and/or enhanced. Under Regulation 9(5) of the Conservation Regulations, Planning Authorities have a legal duty to 'have regard to the requirements of the EC Habitats Directive in the exercise of their functions'. This means that they must consider the above 3 tests when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed.
Nationally Protected	
Great Crested Newts, Bats, Water Vole, Otter	These animals receive full protection under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: Intentionally kill, injure or take any such animal; Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any such animal; Intentionally or recklessly disturb such animals while they occupy a place used for shelter or protection.
Common Lizard, Grass Snake, Slow-worm, White-Clawed Crayfish	These animals receive limited protection under The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal to intentionally kill or injure any such animal. In addition, it is an offence to intentionally take White Clawed-crayfish from the wild.
Nesting Birds (general)	All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: Intentionally kill, injure or take any wild bird; Take, damage or destroy the nest (whilst being built or in use) or eggs of any wild bird.
Badgers	The Protection of Badgers Act 1992 makes it illegal to wilfully kill or injure a Badger, or attempt to do so and also make it illegal to intentionally or recklessly interfere with a Badger sett. This includes damaging or destroying a sett, obstructing access to a sett and disturbing a Badger while it is occupying a sett. Licences can be granted to permit sett closure and/or disturbance between July and November inclusive.
Wild Mammals	The Wild Mammals (Protection) Act 1996 makes it illegal to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, drown, crush, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

5.3 Section 40 of the Natural Environment and Rural Communities Act 2006 (the NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.

5.4 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Species/Habitats of Principal Importance in England, of which there are 56 habitats (HPI) and 943 species (SPI). The list is used to guide planning authorities in implementing their duty under the NERC Act.

National Planning Policy

5.5 The NPPF set out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. This presumption does not apply where development requiring Appropriate Assessment under the Birds or Habitats Directives is being considered, planned or determined.

5.6 The NPPF 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 (SSSI) likely to have an adverse effect on a SSSI (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 SSSIs;
- 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;
- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and
- the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation

(SAC); listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'

5.7 Under the NPPF, the Planning Authority has a responsibility to promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan.

5.8 Also under the NPPF the planning system should contribute to and enhance the natural and local environment by 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.

Local Planning Policy

5.9 North Northamptonshire Joint Core Strategy (adopted 2011 and extending to 2031) acknowledges that the local area has a low biodiversity offer, with habitats already fragmented or degraded as a result of development and agriculture. Relevant policies relating to biodiversity include:

- Policy 4: Biodiversity: This policy seeks the protection of existing biodiversity assets and assets offsite which could be affected by adverse effects of noise, air and light pollution. A net gain for biodiversity should be sought and any impact to an asset should firstly be avoided and if this is not possible mitigated for and as a last resort compensated.

- Policy 6: Development on Brownfield Land: This policy welcomes the delivery of development through the reuse of previously developed land.

- Policy 19: The Delivery of Green Infrastructure: This policy does not permit development that would compromise the integrity of the overall green infrastructure network in the locality.

5.10 Northamptonshire's Mineral and Waste Local Plan (2017) also has objectives for protecting and enhancing the natural environment including landscaping, habitats and species. Objective 10 in this document recognises the importance of conserving and enhancing the built and natural environment through sensitive working, and where necessary, high standards of mitigation to address adverse impacts of minerals and waste development. Developments in Northamptonshire must not damage or destroy the county's natural assets and, where possible, efforts to enhance existing and planned green infrastructure networks should be sought.

6.0 Discussion and Recommendations

Overview of Potential Ecological Constraints Associated with the Proposed Development

6.1 The following sites/habitats/species have been identified as potential constraints to the proposed development:

- Potential Local Wildlife Site (pLWS) and HPI Lowland Mixed Deciduous Woodland
- Bats
- Badger
- Dormouse
- Otter and Water Vole
- Breeding Birds
- Reptiles
- Great Crested Newts
- White-Clawed Crayfish
- SPI Toads

Further Survey and Mitigation

Potential Local Wildlife Site (pLWS) and HPI Broadleaved Woodland

6.2 Retained trees must be suitably protected during the construction phase. Minimum distances between the construction area and retained vegetation must be defined by a suitably qualified person and in compliance with the British Standard BS5837:2012 Trees in relation to design, demolition and construction. Protective fencing would also follow specification set out in BS 5837:2012 Trees in relation to design, demolition and construction and be installed prior to commencement.

6.3 During both the construction and operational phases, methods of working should comply with The Environment Agency Pollution Prevention Guidelines to avoid potential impacts from sediment/pollution discharge upon terrestrial and aquatic habitats within the pLWS.

6.4 To avoid environmental impacts the following avoidance measures should be considered during the construction phase, as appropriate:

- All vehicles should switch off engines when not in use i.e. no idling vehicles should occur on site;

- No site runoff of water or mud should be allowed;
- Ensure stockpiles are kept for the shortest time possible and if necessary, the use of sprinklers and hoses for dampening of exposed soil and materials should be employed;
- Ensure an adequate supply of water on site if using sprinklers and hoses for dust suppression;
- Where possible, enclosed chutes and covered skips should be used;
- Observation of wind speed and direction prior to conducting dust-generating activities to determine the potential for dust nuisance to occur, avoiding potentially dust-generating activities during periods when wind direction may carry dust into sensitive areas and avoiding dust-generating operations during periods of high or gusty winds;
- Completed earthworks should be covered or vegetated as soon as is practicable;
- Regular inspection of local highways and site boundaries to check for dust deposits (and removal if necessary);
- Visual inspection of site perimeter to check for dust deposition (evident as soiling and marking) on vegetation, cars and other objects and taking remedial measures if necessary;
- Use of dust-suppressed tools for all operations;
- Ensure all construction plant and equipment is maintained in good working order;
- Ensure an adequate supply of equipment on site to clean up dry spillages;
- Only use registered waste carriers to remove waste from site; and
- No unauthorised burning of any material anywhere on site.

Bats

6.5 The development will affect hard standing and ephemera/short perennial habitat which is of limited value to foraging/commuting bats. On site habitats are frequently disturbed by vehicles and are artificially lit, therefore, given the small size of the site and the proposed retention of boundary habitats, activity surveys are not considered necessary. Sufficient baseline data has been obtained to conclude that species assemblage will be limited to those which are tolerant to lighting/disturbance and urban environments i.e. common bats such as Common and Soprano Pipistrelle. A sensitive lighting regime, during the operational phase, should be developed with respect to bats to ensure habitats on site can continue to be used by commuting/foraging bats. This should avoid direct illumination of boundary habitats.

6.6 Roosting bats situated off site i.e. within the first 15 metres of the woodland could be affected by elevated noise during construction and potentially the operation. As roost occupation in trees is sporadic (Collins, 2016) and the effect of noise on bats is difficult to determine i.e. some bats are very tolerant to disturbed environments, alternative roost provision deeper

within the pLWS would address this constraint and will ensure alternative roosts are available at all times. A Construction and Environmental Management Plan (CEMP) should be developed to ensure short-term impacts, as a result of noise/vibrations and/or lighting are avoided/minimised as far as possible.

Badger

6.7 Although no Badger setts have been identified on site, the presence of Badger setts, originating off site and extending beneath the site has not been determined. Construction has the potential to collapse tunnels/chambers and disturb Badgers that may be using them and, therefore, a Badger Survey, including all land within 30 metres of the site's boundary, and delivered in accordance with Harris *et al.* (1989), should be undertaken.

Dormouse

6.8 Dormouse presence in the pLWS is assumed based on the desk based searches carried out. Tree protection fencing in accordance with BS5837 should be installed prior to works commencing around the root protection zones of all retained trees within the eastern part of the site and the southern edge of the adjacent pLWS. This will prevent accidental damage and excessive noise which could disturb Dormouse using these habitats.

Otter and Water Vole

6.9 The presence of Otter and Water Vole along the Willow Brook should be established in order to determine whether these species could be affected by the construction and/or operational of the new facility. The Water Vole survey will be carried out in accordance with Dean et al (2016). Otter survey will be carried out with reference to Channin (2003).

Breeding Birds

6.10 To avoid disturbance to actively breeding birds, areas of suitable bird nesting habitat i.e. scrub should be cleared from September to February, outside of the recognised bird nesting season. Where it is necessary to clear suitable bird nesting habitat between March and August, a suitably qualified ecologist should carry out a nesting bird check immediately prior to its removal.

6.11 If an active nest is present, at least a 5 metre radius buffer area (or wider as appropriate and dependent upon the species identified) should be set out, or the vegetation retained until any young have fledged. To prevent contractors accidentally straying into the buffer area, these should be clearly marked out with high visibility fencing.

Reptiles

6.12 The majority of habitat suitable is to be retained and for this reason a survey to establish presence/absence is not required. All areas of suitable terrestrial habitat must be cleared following a Precautionary Working Method Statement (PWMS) under the direct supervision of a suitably qualified ecologist. Clearance should be timed when reptiles are active i.e. between April and November (when temperatures are not below 10^{o}C) and can be flushed into adjacent habitat and out of harm's way with ease.

6.13 Temporary protective fencing, positioned between retained habitats and the working footprint would prevent accidental killing/injury of reptiles during construction.

Great Crested Newts

6.14 To Keystone Ecology's knowledge, the waterbodies within the pLWS have not been subject to GCN survey in the past. An eDNA Survey of waterbodies in the pLWS is recommended to establish the proximity of GCN populations to the site. If GCN are confirmed in these waterbodies it will be necessary to keep habitat loss or damage below 100 metres^2 in order to avoid triggering the need for a European Protected Species licence.

6.15 Protective exclusion fencing, positioned at the boundary of retained habitats, will ensure GCN residing on site during the construction phase do not stray accidentally into the working footprint. As the majority of the construction footprint affects hardstanding/compacted gravel, fencing will not act as a permanent barrier to GCN movement as they are not expected to commute into this habitat in any meaningful way i.e. there are no refuge opportunities or breeding ponds within the construction zone or to the immediate south of the Site and, therefore, there is no reason for them to commute in this direction. Assuming habitat loss/damage can be kept below the threshold specified, fence installation would not be a licensable action and is designed to protect retained habitat and GCN that use it from accidental killing/injury only.

6.16 GCN fence installation, and its subsequent removal at the end of the construction period, can only be carried out when GCN are not in a period of hibernation/dormancy i.e. fencing installation/removal must be delivered when GCN are active and overnight temperatures are consistently above 5^{o}C.

6.17 Fencing installation will also be overseen by a licensed GCN ecologist or accredited agent.

SPI Toad

6.18 All areas of suitable terrestrial habitat must be cleared following a Precautionary PWMS under the direct supervision of a suitably qualified ecologist.

6.19 Temporary protective fencing, positioned between retained habitats and the working footprint would prevent accidental killing/injury of Common Toad during construction.

Opportunities for Biodiversity Enhancement

6.20 In accordance with national and local planning policy, opportunities for biodiversity enhancement (above and beyond those required to mitigate for the identified impacts) are set out below.

- A selection of bird boxes should be fitted to retained trees to encourage birds to nest on site. Artificial nest boxes should be targeted at Northamptonshire's target BAP species for Lowland Mixed Deciduous Woodland. Purpose built woodpecker boxes, sparrow terraces and the 1N Schwegler Deep Box would attract a variety of birds targeted within the local BAP.

- Artificial hibernacula such as rock or log piles would provide refuge opportunities for amphibians and reptiles close to the proposed drainage basin.

- The margins of the proposed drainage basis should be stocked with native plants including: Water Plantain; Yellow Flag Iris, Ragged Robin; Marsh Marigold; Water Mint which will attract a variety of invertebrates to the waterbody and the leaves of some would offer egg laying opportunities to GCN. Floating vegetation such as White Water Lily, and submerged vegetation such as Brooklime or Curled Pond weed would also maximise biodiversity potential of the waterbody.

7.0 References

Botanical Society for the British Isles (2007). *BSBI 2007 List*. Available at: http://www.bsbi.org.uk/taxonomy.html [Accessed on 21st May 2018].

Channin, P. (2003). Monitoring the Otter *Lutra Lutra*. Conserving Natura 2000 Rivers. Monitoring Series No.10. English Nature, Peterborough.

Chartered Institute of Ecology and Environmental Management (2017). *Guidelines for Ecological Report Writing.* Available at: https://www.cieem.net/data/files/Publications/Ecological_Report_Writing_Dec2017.pdf. [Accessed on 21st May 2018].

Chartered Institute of Ecology and Environmental Management (2017). *Guidelines for Preliminary Ecological Appraisal.* Available at: https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf [Accessed on 21st May 2018].

Collins, J. (Ed.) (2016). *Bat Surveys for Professional Ecologists - Good Practice Guidelines (3rd Edition).* Bat Conservation Trust: London.

Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Matthews and Paul Chanin. The Mammal Society, London.

Harris, S., Cresswell, P. and Jefferies, D. (1989). *Surveying Badgers*. The Mammal Society.

Joint Nature Conservation Committee (2010). *Handbook for Phase I Habitat Survey - A Technique for Environmental Audit*. JNCC: Peterborough.

North Northamptonshire Joint Planning Unit. Northamptonshire Joint Core Strategy (2011 – 2031). Available at: http://www.nnjpu.org.uk/docs/Joint%20Core%20Strategy%202011-2031%20High%20Res%20version%20for%20website.pdf [Accessed on 14th December 2018].

Northamptonshire's Mineral & Waste Local Plan (2017). Available at: https://www3.northamptonshire.gov.uk/councilservices/environment-and-planning/planning/planning-policy/minerals-and-waste-planning-policy/Pages/update-of-the-adopted-minerals-and-waste-local-plan.aspx [Accessed on 14th December 2018].

Natural History Museum (2016). *UK Species Inventory*. Available at: http://www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity/uk-species/index.html [Accessed on 21st May 2018].

Web addresses for access to full legislation and policy text:

Conservation of Habitats and Species Regulations 2010 (as amended) http://www.legislation.gov.uk/uksi/2012/1927/contents/made

Countryside and Rights of Way Act 2000:
http://www.legislation.gov.uk/ukpga/2000/37/contents

National Planning Policy Framework:
http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

Natural Environment and Rural Communities Act 2006:
http://www.legislation.gov.uk/ukpga/2006/16/contents

Protection of Badgers Act 1992:
http://www.legislation.gov.uk/ukpga/1992/51/contents

UK Post-2010 Biodiversity Framework:
http://jncc.defra.gov.uk/page-6189

Wildlife and Countryside Act 1981:
http://www.legislation.gov.uk/ukpga/1981/69

Plans

Key

- Site Boundary
- Line of Trees
- Hardstanding
- SI — Poor Semi-improved Grassland
- Ephemeral/Short Perennial
- Tall Ruderal
- Scattered Scrub

keystone ecology

Entran

Shelton Road, Corby

Drawing Number: 182835/1/dwg1

Phase I Habitat Map

Revision	Date	Drawn	Approved
rev1	27/2/2019	CG	ER

N

0 10 20 30 m

Central grid ref: SP910908

No dimensions to be scaled from this drawing
All dimensions are to be checked on site
Measurements displayed are for indicative purposes only

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Appendices

Appendix 1

Desk Study Details

Record Type	Search Radius (km) [4]	Source(s) [5]
Sites and Habitats		
European statutory sites	15	Locations: Natural England GIS Digital Boundary Database: www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm Citations: Natural England Site Designations: www.gov.uk/protected-or-designated-areas
National statutory sites designated for bats and birds	10	
National statutory sites	2	
Local wildlife sites designated for bats	2	Local biological records centre
Local wildlife sites, important hedgerows and veteran trees	0.5	Local biological records centre
Habitats of Principal Importance	0.5	Natural England GIS Digital Boundary Database: www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm
Ancient woodland	0.5	Natural England GIS Digital Boundary Database[6]: www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm
Waterbodies	0.5	Ordnance Survey Street View Google Maps
Species[7]		
Bats, Otters and Water Voles	2	Local biological records centre Local bat group
Other Protected species[8]	0.5	Local biological records centre

[4] In each case the search included the site and the specified area beyond the site boundary. Search radius was based on the professional judgement of the ecologist leading this appraisal with reference to current guidelines for ecological report writing (CIEEM, 2015).

[5] Natural England GIS Digital Boundary Database accessed on 2nd January 2016 unless otherwise stated.

[6] Only ancient woodland sites that were over 2 ha on the 1920's base maps are included on the inventory.

[7] Records over 10 years old are excluded.

[8] Birds only included if listed under the Wildlife & Countryside Act Sch 1. All species protected from sale only are excluded.

Record Type	Search Radius (km) [4]	Source(s) [5]
SPI and local BAP species	0.5	Local biological records centre[9]

[9] With reference to UK Biodiversity Action Reporting System if local BAP status is not indicated by information provided.

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APPENDIX 11.2 BADGER SURVEY

keystone
making ecology our business

Shelton Road, Corby
Confidential Badger Survey

June 2018

KSP Renewables Limited

Shelton Road, Corby
Confidential Badger Survey

June 2018

KSP Renewables Limited

Version	Date	Author	Checked	Approved
Final	08/02/2019	L Robinson	C Cartwright	S Bracken

Contents

Appendices

Contact details can be found at the end of this document.

This report should not be made publicly available in any form that would allow the location of the Badger setts to be identified. Requests for such information should not be met, except where the request originates from a person or organisation with a bona fide interest in Badgers.

1.0 Introduction

Background

1.1 Keystone Ecology was instructed by KSP Renewables to undertake a Badger Survey of land proposed as an Energy Recovery Facility off Shelton Road, Corby (central grid reference SP 9100 9088). Badger setts in the potential Local Wildlife Site (pLWS) to the immediate north have been historically recorded by Keystone Ecology and, although the Preliminary Ecological Appraisal (PEA) did not identify any signs of Badger within the site boundary, it was not possible to determine if any setts, which potentially incorporate tunnels/chambers that extend onto site, were present (Keystone Ecology, 2018).

Aims and Objectives

1.2 The aim of the Badger Survey was to:

- Determine whether there are any Badger setts, or other evidence of Badger on or within 30 metres (access permitting) of the site;
- Identify likely impacts of the proposed development on Badgers;
- Recommend measures to avoid or reduce impacts on Badgers; and
- Advise on any requirement to attain a licence from Natural England to proceed with the works.

Site Characteristics

1.3 The site is located along the eastern perimeter of the Willowbrook Industrial Estate and comprises a large car forecourt with a sparse ephemeral/short perennial community growing between strips of hard standing. The site is approximately 1.95 hectares in size. A narrow band of poor semi-improved grassland is present along the northern site boundary with a line of scrub and immature trees along the eastern boundary. These habitats provide suitable foraging opportunities to Badger however the perimeter fence line prevents access.

1.4 Large car forecourts lie to the west of the site, with numerous steel clad industrial units located to the south. A potential Local Wildlife Site (pLWS) runs parallel with the northern site boundary and this site supports broadleaved woodland, scrub, open and running water. The habitats within the pLWS provides good sett building opportunities to Badger immediately adjacent to the site.

Legislation, Planning Context and Status[1]

Protection Legislation

1.5 Badgers are listed in Schedule 6 of the Wildlife and Countryside Act (1981). As such they receive protection under Section 11 of this Act, which prohibits the use of self-locking snares, bows, explosives or use of live mammals or birds as decoys, for capture and killing of any wild animal. It also prohibits the use of traps, snares, nets, poisons, electrical devices, dazzling devices, and automatic weapons, night shooting devices, gas or smoke for killing, injuring or taking animals listed on Schedule 6.

1.6 The Protection of Badgers Act (1992) makes it an offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger;
- attempt to do the above;
- intentionally or recklessly interfere with a sett.

1.7 A sett is classified as any structure that displays signs indicating current use by a Badger (Natural England, 2007). The Act does not define 'current use'. However, Natural England (2009a) has issued an advice note on the interpretation of 'current use' as follows:

- Displaying signs indicating current use is NOT synonymous with current occupation i.e. Badger need not be occupying the sett every day for the sett to display signs of current use;
- A Badger sett is protected by the legislation if it "displays signs indicating current use by a Badger". A sett is, therefore, protected as long as such signs remain present. In practice, this could potentially be for a period of several weeks after the last actual occupation of the sett by a Badger or Badgers;
- Demonstration of the fact that a sett is not occupied by Badgers does NOT necessarily exempt it from the protection afforded by the Act if it still displays signs otherwise indicative of current use; and
- A sett is likely to fall outside the definition of a sett in the Act if the evidence available indicates that it is NOT in use by Badgers; e.g. absence of Badger field signs, debris in sett entrances etc. In practice, such a sett may have been unused for several weeks.

1.8 Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a Badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out activities in the vicinity of a sett if no Badger is disturbed and the sett is not damaged or obstructed.

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

1.9 The Act does not define 'disturbance'. Natural England has issued an advice note on the interpretation of 'Disturbance' in relation to Badgers occupying a sett (Natural England, 2009b). Within this guidance, Natural England define disturbance to a Badger sett as:

'...more than limited noise or activity near a sett at levels which Badgers commonly tolerate, without apparently being disturbed.'

1.10 It is Natural England's view that Badgers are relatively tolerant of moderate levels of noise and/or activity around their setts and that:

'...low or moderate levels of apparent disturbance at or near to Badger setts do not necessarily disturb the Badgers occupying those setts.'

1.11 Examples of activities at or near setts that Natural England do not consider likely to cause disturbance to Badgers, and therefore would not normally expect to require a licence, include:

- Development, or other activities occurring close to Badger setts (use of hand tools and/or machinery), where there is no reason to believe that the 'disturbance' will be greater than that which Badgers commonly tolerate, and therefore any Badger(s) occupying the sett are unlikely to be disturbed;
- Vegetation removal (including felling small trees or shrubs) over or adjacent to setts (using hand tools and/or machinery); and
- Clearing out of ditches/watercourses using machinery and/or hand tools where Badger setts are present.

1.12 Natural England requires a judgment to be made on a case by case basis as to whether a particular action may or may not cause disturbance to Badgers.

1.13 Where interference with a sett showing signs of current use cannot be avoided during the development, a licence is required from Natural England, which permits activities that would otherwise be illegal. Natural England will generally only issue licenses to permit activities during the period 1st July to 30th November as this avoids the Badgers' breeding period. Natural England will only issue a licence after detailed planning permission has been granted, where applicable, so that there is no conflict with the planning process.

Protection Afforded by the Planning System

1.14 The National Planning Policy Framework (NPPF) sets out government policy regarding consideration of biodiversity in planning decisions. Under the NPPF the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

1.15 The NPPF 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 (SSSI) likely to have an adverse effect on a SSSI (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 SSSIs;*

- *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;*

- *the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'*

1.16 Under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Species/Habitats of Principal Importance (S/HPI) in England, of which there are 56 habitats and 943 species. The list is used to guide planning authorities in implementing their duty under the NERC Act.

1.17 Badger is not an SPI.

2.0 Methodology

Desk Study

2.1 As part of the Preliminary Ecological Appraisal carried out by Keystone Ecology (Keystone Ecology, 2018), Northamptonshire Biodiversity Records Centre (NBRC) was contacted for records of Badgers within 500 metres of the proposed development site.

2.2 Web-resources (Natural England, 2016; Gov.uk 2016) were also searched for any sites designated for Badgers within a 0.5 kilometre radius of the site boundary.

Field Survey and Assessment

2.3 A thorough search of the site and land within 30 metres of it was undertaken for signs of Badger activity in accordance with current guidance (Harris *et al.*, 1989). This involved a search for the presence of setts, foraging activity and associated field signs such as latrines, dung pits, prints and tracks. The location of any setts was mapped, including the number of entrances and signs of use such as bedding material, fresh spoil and hairs were recorded. Additionally, significant evidence of Badger activity was mapped (i.e. territory latrines and runs connecting setts).

2.4 Any sett entrances were plotted using a Global Positioning System (GPS) unit. Additionally, sett entrance positions were measured with a tape measure from the nearest landscape feature (i.e. tree or base of hedgerow), to help improve the accuracy of their location.

2.5 Where relevant, Fox and Rabbit excavations have also been recorded.

2.6 The survey was undertaken on 11th June 2018 by an Ecologist from Keystone Ecology (Tas Adcock, MSc ACIEEM), trained in the identification of Badger field signs and who satisfies all necessary field survey competencies as stipulated by the Chartered Institute for Ecology and Environmental Management (CIEEM). Weather conditions during the survey were: 25^{o}C, no wind, 0% cloud and dry throughout.

Nomenclature

2.7 The English names of flora and fauna species are given in the main text of this report. Scientific names are used only in the absence of English names. Vascular plants and Charophytes follow the nomenclature of The Botanical Society for the British Isles database (2007) with all other flora and fauna following the UK Species Inventory (Natural History Museum, 2016).

Limitations

2.8 Keystone Ecology staff and their sub-consultants endeavour to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.

2.9 The results of the survey and assessment work undertaken by Keystone Ecology are representative at the time of surveying.

2.10 Up to date standard methodologies are used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. Keystone Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.

3.0 Results and Assessment

Desk Study

3.1 The desk study identified 6 records of Badger within the search radius, the closest being located within 150 metres.

3.2 Keystone Ecology previously identified a total of 5 active Badger setts within the pLWS, all located in excess of 30 metres from the development site (Keystone Ecology, 2016).

Field Survey

3.3 No Badger setts were found during the survey and no runs, snuffle marks, latrines, dung pits were identified on or within 30 metres of the site. The fence line around the perimeter is secure with no signs of digging attempts beneath.

3.4 Small mammal runs/burrows identified within the site are attributed to Rabbit.

4.0 Impacts

4.1 The new facility will predominantly affect habitat which cannot support a Badger sett i.e. hardstanding/heavily compacted gravel used as a car park.

4.2 Small areas of natural habitat along the northern boundary will be affected by the construction of a wall along the new car park and small portions of the workshop and drainage pond. Currently these works will not affect Badger as setts are absent, however, as Badger can excavate new setts in a relatively short period of time, construction, affecting natural habitat along the northern boundary, could result in the destruction of an occupied sett.

5.0 Recommendations and Requirements

Further Survey

5.1 A pre-commencement survey should be undertaken to ensure newly excavated setts will not be impacted by construction activities.

Licensing and Planning

5.2 A sett closure licence is not currently required in order to proceed with the proposed works.

Mitigation

Precautionary Approaches during Construction

5.3 Existing perimeter fencing must remain intact and gates kept closed at the end of each day to minimise the risk of Badger accessing the site to forage at night whilst construction activities are ongoing.

5.4 As a further precaution, and to avoid individual Badgers becoming trapped in excavations or trenches, any such excavations will be securely covered overnight, or a means of escape provided, such as a scaffold board ramp, no steeper than 45 degrees.

6.0 References

Botanical Society for the British Isles (2007). *BSBI 2007 List*. Available at: http://www.bsbi.org.uk/taxonomy.html [Accessed on 17th January 2019].

Chartered Institute of Ecology and Environmental Management (2016). *Guidelines for Ecological Impact Assessment in the United Kingdom*. *Terrestrial, Freshwater and Coastal.* Available at: http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf [Accessed on 17th January 2019].

Gov.uk (2016). *Find protected areas of countryside*. Available at: https://www.gov.uk/check-your-business-protected-area [Accessed on 17th January 2019].

Harris, S., Cresswell, P. and Jefferies, D. (1989). *Surveying Badgers*. The Mammal Society.

Keystone Ecology (2018). *Preliminary Ecological Appraisal*. Keystone Environmental Ltd. Tetbury.

Keystone Ecology (2016). *Badger Survey (report reference 131773/5)*. Keystone Environmental Ltd. Tetbury

Natural England (2007). *Badgers and Development: A Guide to Best Practice and Licensing* [Interim Guidance Document]. Natural England. [Online]. Available at: http://naturalengland.twoten.com/naturalenglandshop/docs/IN75.pdf [Accessed on 17th January 2019].

Natural England (2009a) *Guidance on 'Current Use' in the Interpretation of a Badger Sett*. Natural England [Online]. Available at: http://www.naturalengland.org.uk/Images/WMLG17_tcm6-11815.pdf [Accessed on 17th January 2019].

Natural England (2009b) *Interpretation of 'Disturbance' in Relation to Badgers Occupying a Sett*. Natural England [Online]. Available at: http://www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf [Accessed on 17th January 2019].

Natural England (2016). *Natural England GIS Digital Boundary Database*. Available at: http://www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm [Accessed on 17th January 2019].

Natural History Museum (2016). *UK Species Inventory*. Available at: http://www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity/uk-species/index.html [Accessed on 17th January 2019].

Neal, E. and Cheeseman, C. (1996). *Badgers*. T. and A.D. Poyser Ltd: London.

Web Addresses for Access to Full Legislation and Policy Text:

National Planning Policy Framework:
http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

Natural Environment and Rural Communities Act 2006:
http://www.legislation.gov.uk/ukpga/2006/16/contents

The Protection of Badgers Act:
http://www.legislation.gov.uk/ukpga/1992/51/contents

Wildlife and Countryside Act 1981:
http://www.legislation.gov.uk/ukpga/1981/69

Appendices

Appendix 1

Badger Sett Assessment Criteria

Information sourced from Harris *et al*., (1989) and Neal and Cheeseman (1996).

Sett Status

Main setts - These are the most frequently used and appear to be large, well-established, often extensive and with large spoil heaps outside the entrances. Main setts are typically associated with an obvious network of paths leading to, from and around the entrances. There is generally only one main sett per social group of Badgers where the average number of entrances is 15.

Annexe setts - Regularly used, though not necessarily all of the time, with several entrances, annexe setts are smaller than the main sett and occur in close association with it (usually within 150 metres). They are normally linked to the main sett by clear well-used paths and consist of 6 entrance holes on average.

Subsidiary setts - These are further away from the main sett (50 metres or more) and typically comprise of 5 entrance holes on average. They are not continuously active, with no obvious path connecting them to the main sett. For this reason their 'ownership' can often only be determined by bait-marking.

Outlying setts - Sporadically used with few holes, outlying setts can be found anywhere within the territory and usually have small spoil heaps, indicating that they are not very extensive underground. There are no obvious paths connecting them to other setts and Foxes or Rabbits may colonise them when not in use by Badger.

Single hole setts are normally included in this category as well. These are also generally in sporadic use by Badgers and often exhibit few field signs to demonstrate evidence of Badger activity. Some may be occupied by a breeding female and Foxes may take over the hole when not in use by Badgers.

Entrance Status

The size, status and level of activity of each sett can be assessed by counting the number of entrance holes. The degree of use of each entrance hole can be classified as follows:

- Well-used holes - clear of any debris or vegetation and are obviously in regular use. There may be evidence of regular excavation or fresh footprints.
- Well-used holes with bedding - same as above but with bedding material present.
- Partially-used holes - not in regular use and with debris such as leaves and twigs in the entrance, or have moss and/or other plants growing in or around the entrance. To make use of the hole again, a minimum amount of clearance would be required.
- Disused holes - have not been in use for some time, are partially or completely blocked, and would require considerable clearance before they could be used. Long-

disused holes may simply be a depression in the ground together with the remains of a spoil heap, which may be covered in moss or plants.

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APPENDIX 11.3 eDNA GREAT CRESTED NEWT SURVEY

keystone
making ecology our business

Shelton Road, Corby

eDNA Survey for the Presence of Great Crested Newts

June 2018

KSP Renewables Ltd

keystone ecology
www.keyenv.co.uk/ecology

keystone habitats
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keystone marine
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Shelton Road, Corby

eDNA Survey for the Presence of Great Crested Newts

June 2018

KSP Renewables Ltd

Version	Date	Author	Checked	Approved
Final	07/01/2019	L Robinson	C Cartwright	S Bracken
Revision 1	27/02/2019	L Robinson	C Cartwright	S Bracken

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Plans

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Contact details can be found at the end of this document.

1.0 Introduction

Background

1.1 Keystone Ecology was instructed by KSP Renewables Ltd to undertake an eDNA Survey of waterbodies within the potential Local Wildlife Site (pLWS) immediately adjacent to the proposed Corby Energy from Waste (EfW) development located off Shelton Road in Corby.

1.2 Planning permission for a gasification plant was granted at this site in 2016 (application reference: 16/00028/WASFUL) and a new application is proposed which uses alternative technology and incorporates a taller stack height. Although the presence of Great Crested Newts (GCN) is well known in the locality it does not appear that waterbodies within the pLWS have been subject to Presence/Absence survey in the past. On the assumption that the current working footprint will be similar to that approved in 2016 i.e. <0.2 hectares suitable land will be affected by construction, the population size of the nearest GCN population does not need to be known (Natural England, 2015). For this reason eDNA Survey was recommended in the Preliminary Ecological Appraisal (Keystone Ecology, 2018).

Aims and Objectives

1.3 The aim of the eDNA assessment was to ascertain the following:

- Presence of GCN eDNA in the nearest waterbodies to the site which are not separated by barriers to amphibian dispersal.

1.4 In order to:

- Establish the ecological baseline for Great Crested Newts and design an appropriate mitigation strategy to ensure impact to this species does not occur unlawfully.

Site Characteristics

1.5 The site is located along the eastern perimeter of the Willowbrook Industrial Estate and comprises a large car forecourt with a sparse ephemeral/short perennial community growing between strips of hard standing. The site is approximately 1.95 hectares in size. A narrow band of poor semi-improved grassland is present along the northern site boundary with a line of scrub and immature trees along the eastern boundary. The majority of the site offers no opportunity to act as a resting place for GCN. Natural habitats along the northern and eastern boundaries provide opportunities for foraging, commuting and potentially refuge.

1.6 Large car forecourts lie to the west of the site, with numerous steel clad industrial units located to the south. The Corby Northern Orbital Road is under construction and is located approximately 120 metres to the north with habitats associated with a potential Local Wildlife Site (pLWS), associated with the former Tata Steelworks in between. Habitats within the pLWS include a mosaic of scrub, bare ground, running water, broadleaved woodland and Waterbodies W1 and W2. Habitats within the pLWS could, therefore, support GCN during both the aquatic and terrestrial phases in their life-cycle.

Legislation, Planning Context and Status[1]

Protection Legislation

1.7 GCN is listed under Schedule 2 of the Conservation of Habitats and Species (Amendment) Regulations 2010 (as amended) (The Conservation Regulations) and as such receives protection under Regulation 41 of these Regulations. GCN is also listed under Schedule 5 of The Wildlife and Countryside Act 1981 and therefore receives protection under Section 9 of this Act (as amended by the Countryside and Rights of Way Act 2000).

1.8 This legislation makes it an offence to:

- Deliberately capture or kill a GCN;
- Deliberately disturb[2] a GCN;
- Intentionally or recklessly disturb[3] a GCN;
- Deliberately take or destroy the eggs of a GCN;
- Intentionally or recklessly obstruct access to any structure or place a GCN uses for shelter or protection; and
- Damage or destroy a breeding site or resting place of a GCN.

1.9 In the case of Vivienne Morge vs. Hampshire County Council (2010), the Supreme Court has defined deliberate disturbance as 'an intentional act knowing that it will or may have a particular consequence, namely disturbance of the relevant protected species.'

1.10 Since 2007 it is no longer a valid defence to show that the killing, capture or disturbance of a species covered by the Conservation Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of an otherwise lawful activity.

1.11 EPS licences can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed:

- The development is for reasons of overriding public interest;
- There is no satisfactory alternative; and
- The favourable conservation status of the species concerned will be maintained and/or enhanced.

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

[2] Affect its ability to survive, breed or rear young, impair its ability to migrate or hibernate, affect its local distribution or abundance.

[3] Whilst occupying a structure or place used for shelter or protection.

Protection Afforded by the Planning System

1.12 The National Planning Policy Framework (NPPF) sets out government policy regarding consideration of biodiversity in planning decisions. Under the NPPF the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

1.13 The NPPF 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 (SSSI) likely to have an adverse effect on a SSSI (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 SSSIs;
- 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;
- the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'

1.14 Under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Species/Habitats of Principal Importance in England, of which there are 56 habitats (HPI) and 943 species (SPI). The list is used to guide planning authorities in implementing their duty under the NERC Act.

1.15 GCN is an SPI.

1.16 GCN are a flagship species within the Habitat Action Plan for Ponds in Northamptonshire (Northampton Biodiversity Partnership, 2009).

1.17 Under Regulation 9(5) of the Conservation Regulations, Planning Authorities also have a legal duty to 'have regard to the requirements of the Habitats Directive in the exercise of their functions.' As demonstrated by the case of Woolley vs. Cheshire East Borough Council and Millennium Estates Ltd (2009), this means that they must consider the 3 Habitats Directive tests (see above) when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed.

2.0 Methodology

Desk Study

2.1 Northamptonshire Biodiversity Records Centre (NBRC) was contacted for records of GCN within 500 metres of the proposed development site (Keystone Ecology, 2018).

2.2 Web-resources (Natural England, 2016; Gov.uk 2016) were also searched for any sites designated for GCN within a 2 kilometre radius of the site boundary.

2.3 European Protected Species (EPS) licences, issued by Natural England within 500 metres of the site, and reported on MagicMap were also identified.

eDNA Survey

2.4 Water sample kits were supplied by Surescreen Scientifics Ltd and samples were collected in line with Natural England's standing advice on eDNA Surveys and strict methodologies laid out in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt, Version 1.1. (Defra, 2014).

2.5 Water samples were collected from waterbodies W1 and W2 on 11th June 2018 by GCN licensed ecologist (Tas Adcock, BSc MSc, Natural England GCN Licence Number: 2015-17365-CLS-CLS) who satisfies all necessary field survey competencies as set out by the Chartered Institute for Ecology and Environmental Management (CIEEM).

2.6 Water samples were submitted to Surescreen Scientifics Ltd for laboratory testing. Surescreen Scientifics Ltd follows strict guidelines laid down in WC1067 (Defra, 2014). Refer to *Appendix 1* for the complete methodology used to analyse the water samples.

Nomenclature

2.7 The English names of flora and fauna species are given in the main text of this report. Scientific names are used only in the absence of English names. Vascular plants and Charophytes follow the nomenclature of The Botanical Society for the British Isles database (2007) with all other flora and fauna following the UK Species Inventory (Natural History Museum, 2016).

Limitations

2.8 The results of the survey and assessment work undertaken by Keystone Ecology are representative at the time of surveying.

2.9 Keystone Ecology staff and their sub-consultants will endeavour to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.

2.10 Up to date standard methodologies will be used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these

methodologies fail to identify all species on site. Keystone Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.

2.11 Keystone Ecology cannot accept responsibility for data collected from third parties.

3.0 Results and Evaluation

Desk Study

3.1 There are no European statutory sites, no national statutory sites, and no non-statutory sites designated for GCN within 2 kilometres of the proposed development site.

3.2 Searches on Magic Map identified 3 European Protected Species Licences for GCN in the area, the closest licence record being attributed to the Corby Northern Orbital Road (CNOR) to the north-east of the Site.

3.3 To inform the European Protected Species (EPS) licence application for the CNOR a suite of GCN Presence/Absence Surveys were carried out in 2004 by Penny Anderson Associates. The survey data obtained in 2004 was used by Keystone Ecology to inform the previous planning application at the Site. Keystone Ecology has also been able to review current GCN monitoring data, a requirement of the licence for the CNOR. Delta Simons (Delta Simons, 2014) surveyed 4 ponds to the north of the CNOR in 2014 and confirmed small, medium and large GCN populations. The results of the 2014 monitoring survey identified a significant increase in population size from surveys carried out historically by a variety of companies since 2004 (the results of these are unknown). The waterbodies to the north of the CNOR fall within 500 metres of the site and although the CNOR acts as a partial barrier to dispersal, GCN could access terrestrial habitat on Site via the culvert which extends beneath the new road.

3.4 There are 5 records of GCN from within 2 kilometres of the site, the closest record being to the north. Details are provided below in *Table 1*.

Table 1: GCN Records within 0.5 Kilometres of the Site

Records (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	**Potential Constraint**
5 / 184	Yes. The CNOR is not a major barrier to dispersal given the presence of a culvert beneath this road.

Field Survey - eDNA Assessment

3.5 The results of the eDNA Survey are summarised in *Table 2*. Pond locations are shown on *Drawing Number: 182835/4/dwg1*. Refer to *Appendix 1* for detailed results.

Table 2: HSI Assessment Summary

Waterbody Ref.	Results
1	GCN Presence Confirmed.
2	GCN Presence Confirmed.

3.6 There are no major barriers to the dispersal of GCN between waterbodies W1 and W2 and the site, however, terrestrial habitat that could be used as a resting place by GCN is restricted along the northern and eastern site boundaries. None of the terrestrial habitat on site is core habitat i.e. within 50 metres of waterbodies 1 and 2 (English Nature, 2001) and given the wealth of intervening terrestrial habitat, and elsewhere in the pLWS, the probability of GCN residing at the fringes of the EfW is reduced but cannot be ruled out.

3.7 Should GCN commute between waterbodies to the north of the CNOR, and the site, the only probable route would be very indirect and would exceed 230 metres. GCN do not typically travel more than 250 metres between their breeding ponds and resting places (Cresswell and Whitworth, R. 2004) and as there is an expanse of intervening suitable terrestrial habitat it is unlikely high numbers of GCN would commute to distant terrestrial habitat within the site in order to seek refuge. Furthermore, sections of exclusion fencing, from licensable works undertaken in conjunction with the Corby Northern Orbital Road (CNOR), to the east of Shelton Road, although in a deteriorating condition, act as a partial barrier to GCN movement from this direction.

3.8 The majority of the site is occupied by hardstanding and ephemeral/perennial growing within heavily disturbed and compacted gravel which offers no refuge opportunities to GCN. As land to the south of the Site is heavily urbanised, it is highly unlikely GCN from W1 or W2 would commute across this, firstly because this is extensive and secondly because there are no alternative breeding opportunities beyond the site's southern boundary.

3.9 GCN are well represented in the locality and small, medium and large GCN populations are known nearby. In accordance with CIEEM guidelines for Ecological Impact Assessment (CIEEM, 2018), the GCN population in W1 and W2 is considered to be of Local importance, based on the evidence collected.

4.0 Impacts

4.1 The Corby Energy from Waste facility comprises a large structure with gasification process hall, fuel storage area, waste reception, preparation areas and condensers. The majority of the EfW facility occupies habitat which provides no refuge opportunities to GCN. Of the suitable habitat present i.e. those along the northern and eastern boundaries, only 2% will be affected by construction.

4.2 Predicted impacts and their effect on GCN populations, determined in accordance with Great Crested Newt Mitigation Guidelines (English Nature, 2001), are presented in *Table 3*.

Table 3: Predicted Impacts and their Effect on GCN Populations Identified

Broad Impact	Specific Nature of Impact	Predicted Effect on Population and its Significance
Pre and mid-development impacts:	Construction of a wall, which will run along the northern edge of the new car park, will result in the loss of <38m^2 poor semi-improved grassland within 100 metres of the closest breeding pond (Waterbody 1). Additional small losses of poor semi-improved grassland will occur to facilitate workshop construction and the creation of a drainage basin. Between 100 and 250 metres of Waterbody 1, 0.0014 hectares semi-improved grassland will be lost. Between 250 and 500 metres of Waterbody 1, 0.0075 hectares semi-improved grassland will be lost.	Habitat loss between 50 and 250 metres of a breeding pond is a medium scale impact, however, given the small areas to be affected Natural England's rapid risk calculator is 'green' meaning an offence under the Regulations is highly unlikely. Should the killing/injury of individual GCN occur the overall scale of impact on the long-term viability of the GCN populations identified is low.
Long-term impacts: habitat loss	Combined losses of terrestrial habitat are small with only 2% of suitable terrestrial habitat, along the northern boundary, being lost. The remaining 98% terrestrial habitat, comprising poor semi-improved grassland, scrub and tall ruderal vegetation will be available to GCN throughout the	Given the small scale of habitat destruction proposed, such small losses at these distances will have a negligible effect on the conservation status of the local GCN population.

Broad Impact	Specific Nature of Impact	Predicted Effect on Population and its Significance
	construction phase.	
Long-term impacts: habitat modification	Approximately 0.29 hectares on site habitat, which currently cannot support GCN i.e. hardstanding/ compacted gravel, will be replaced with species rich grassland and a further 0.081 hectares will become an aquatic resource.	Landscape design is, predicted to have a positive effect on GCN.
Long-term impacts: fragmentation and isolation	High kerbs surrounding hardstanding could cause fragmentation should GCN find themselves in this habitat with no means of exit.	Fragmentation between 50 and 250 metres of a breeding pond is a medium scale impact however injury/death as a consequence of fragmentation is likely to be extremely rare given the expanse of terrestrial habitat within the pLWS. The overall scale of impact on the long-term viability of the GCN populations, as a consequence of fragmentation, is low.
Miscellaneous impacts:	None predicted.	N/A
Post-development interference impacts:	Drainage incorporating gully pots could trap GCN resulting in their death.	Attempts to cross into hardstanding habitat are expected to be very low given the urbanised nature of land to the south. The overall scale of impact on the long-term viability of the GCN populations, as a consequence of falling into gully pots, is low.

5.0 Recommendations and Requirements

Further Survey

5.1 Based on current proposals, the eDNA Survey results obtained are sufficient and valid for 3 years from the time of survey.

5.2 Updated survey in the future is unlikely to be required provided impact to terrestrial habitat is kept below the 100 metre squared threshold.

Licensing and Planning

5.3 An EPS licence will not be required in order to proceed with the proposed works.

5.4 The Rapid Risk Assessment Calculator, which creates a notional offence probability score, identifies the works as 'Low Risk' translating to a wildlife offence being highly likely.

Mitigation

5.5 For each constraint identified, all mitigation options provided follow the established Mitigation Hierarchy as set out in Section 5.2 of BS42020:2013. This seeks as a preference to avoid impacts then to mitigate unavoidable impacts, and, as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures. The following measures have been identified as proportional to the scale and magnitude of impacts and their effects on GCN as set out in *Section 4*.

Avoidance of Disturbance, Killing or Injury

5.6 Despite the low likelihood of encountering GCN during construction, due to their abundance in Northamptonshire, it is recommended that all site operatives, including contractor and sub-contractor staff, receive a briefing by a licensed ecologist or accredited agent prior to commencement. The briefing would include details of the legal protection of GCN, the precautionary methods of working required, how to identify a GCN and a procedure to follow should the species be discovered during works.

5.7 Following a Precautionary Working Method Statement (PWMS), retained habitat along the northern and eastern boundaries must be protected from accidental damage during construction. Temporary protection fencing, positioned at the edge of these habitats will prevent GCN from straying into land affected by construction and the inclusion of turn backs, at either end of the fencing, will deflect GCN towards habitats within the pLWS. Temporary fence installation, and the clearance of small areas of terrestrial habitat, to facilitate construction, must be overseen by a licensed ecologist or accredited agent.

5.8 GCN fence installation, and its subsequent removal at the end of the construction period, can only be carried out when GCN are not in a period of hibernation/dormancy i.e. fencing installation/removal must be delivered when GCN are active and overnight temperatures are consistently above 5^{o}C.

Fragmentation from Road/Drainage Infrastructure

5.9 Dropped kerbs must be included at the edge of hardstanding within the northern and eastern part of the site. This will allow GCN back into more suitable habitat should they find themselves on hardstanding.

5.10 All drainage gullies must be offset from the kerb at the road edge by at least 10 centimetres or wildlife kerbs with a bypass recess will be used adjacent all drainage gullies. This will prevent GCN from becoming trapped in drainage systems.

Long Term Habitat Management and Maintenance

5.11 Existing/retained grassland should become a set-aside area to encourage growth, creating a tussocky sward that will provide natural refuge for GCN i.e. not intensively mown and on a long cutting regime.

Post-development Population Monitoring

5.12 Post work monitoring is not required.

Opportunities for Biodiversity Enhancement

5.13 In accordance with national and local planning policy, opportunities for biodiversity enhancement (above and beyond those required to mitigate for the identified impacts) are set out below.

5.14 The design and planting surrounding and within the proposed drainage pond could increase biodiversity potential on site. The following is recommended:

- The edges of the drainage basin should be stepped to create shallow areas at the pond's margins. Shallow areas create opportunities for amphibians display.
- The margins should be stocked with native plants including: Water Plantain; Yellow Flag Iris, Ragged Robin; Marsh Marigold; Water Mint which will attract a variety of invertebrates to the waterbody and the leaves of some would offer egg laying opportunities to GCN. Floating vegetation such as White Water Lily, and submerged vegetation such as Brooklime or Curled Pond weed would also maximise biodiversity potential of the waterbody.
- Open water must cover at least one third of the pond at all times. Vegetation to be removed sensitively, as required, to achieve this to avoid the pond becoming clogged with vegetation and lacking open areas for amphibian display.
- Any vegetation removed from the pond must be left on the pond edge for a period of 24 hours to enable any amphibians and invertebrates a means of escape prior to disposal off site.
- The pond must not be stocked with fish.
- The pond should not be shaded by more than 75% at any point. Pruning and thinning by hand of adjacent trees should take place as required.
- Rock or log piles at the pond's edge will increase refuge opportunities to reptiles and amphibians; and

- Native species rich grassland, surrounding the waterbody, should be subject to a long cutting regime to maximise sward height throughout the year and generate additional refuge opportunities near to the water's edge.

6.0 References

Botanical Society for the British Isles (2007). *BSBI 2007 List*. Available at: http://www.bsbi.org.uk/taxonomy.html [Accessed on 07 February 2019].

Chartered Institute of Ecology and Environmental Management (2018). *Guidelines for Ecological Impact Assessment in the United Kingdom. Terrestrial, Freshwater and Coastal.* Available at: https://www.cieem.net/data/files/ECIA%20Guidelines.pdf

Cresswell, W. and Whitworth, R. (2004). *An assessment of the efficiencies of capture techniques and the value of different habitats for the Great Crested Newt Triturus cristatus*. English Nature Research Report No. 576. Natural England: Peterborough.

Defra (2014) *Analytical and methodological development for improved surveillance of the Great Crested Newt*. Available at: file:///C:/Users/erobinson/Downloads/11973_WC1067_FinalReport.pdf [Accessed on 07 February 2019].

Delta Simons (2014). *Great Crested Newt Monitoring Survey Report – Corby Northern Orbital Road.* Available at: http://www.northamptonshire.gov.uk/en/councilservices/Environ/planning/planapps/Documents/PDF%20Documents/County%20Council%20Apps/13.00089.CCDVOC-GCNMonitoringReport(DatedOct14).pdf

English Nature (2001). *Great Crested Newt Mitigation Guidelines*. English Nature.

Gov.uk (2016). *Find protected areas of countryside*. Available at: https://www.gov.uk/check-your-business-protected-area [Accessed on 07 February 2019].

Keystone Ecology (2018). *Preliminary Ecological Appraisal.* Keystone Ecology: Tetbury.

Natural England (2016). *Natural England GIS Digital Boundary Database*. Available at: http://www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm [Accessed on 07 February 2019].

Natural England (2015). *Template for Method Statement to Support Application for Licence under Regulation 53(2)e of The Conservation & Species Regulations (2010) as amended, in Respect of Great Crested Newts*. Available at: https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence [Accessed on 07 February 2019].

Natural History Museum. (2016). *UK Species Inventory*. Available at: http://www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity/uk-species/index. [Accessed on 07 February 2019].

Northampton Biodiversity Partnership (2009) *Northamptonshire Biodiversity Action Plan 3rd edition 2015-20.* Available at: https://www3.northamptonshire.gov.uk/councilservices/environment-and-planning/planning/planning-policy/archaeology-biodiversity-and-landscape/documents/PDF%20Documents/Northamptonshire%20BAP%202015-2020.pdf

Web Addresses for Access to Full Legislation and Policy Text:

Conservation of Habitats and Species Regulations 2010 (as amended):
http://www.legislation.gov.uk/uksi/2012/1927/contents/made

Countryside and Rights of Way Act 2000:
http://www.legislation.gov.uk/ukpga/2000/37/contents

Habitats Directive:
http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

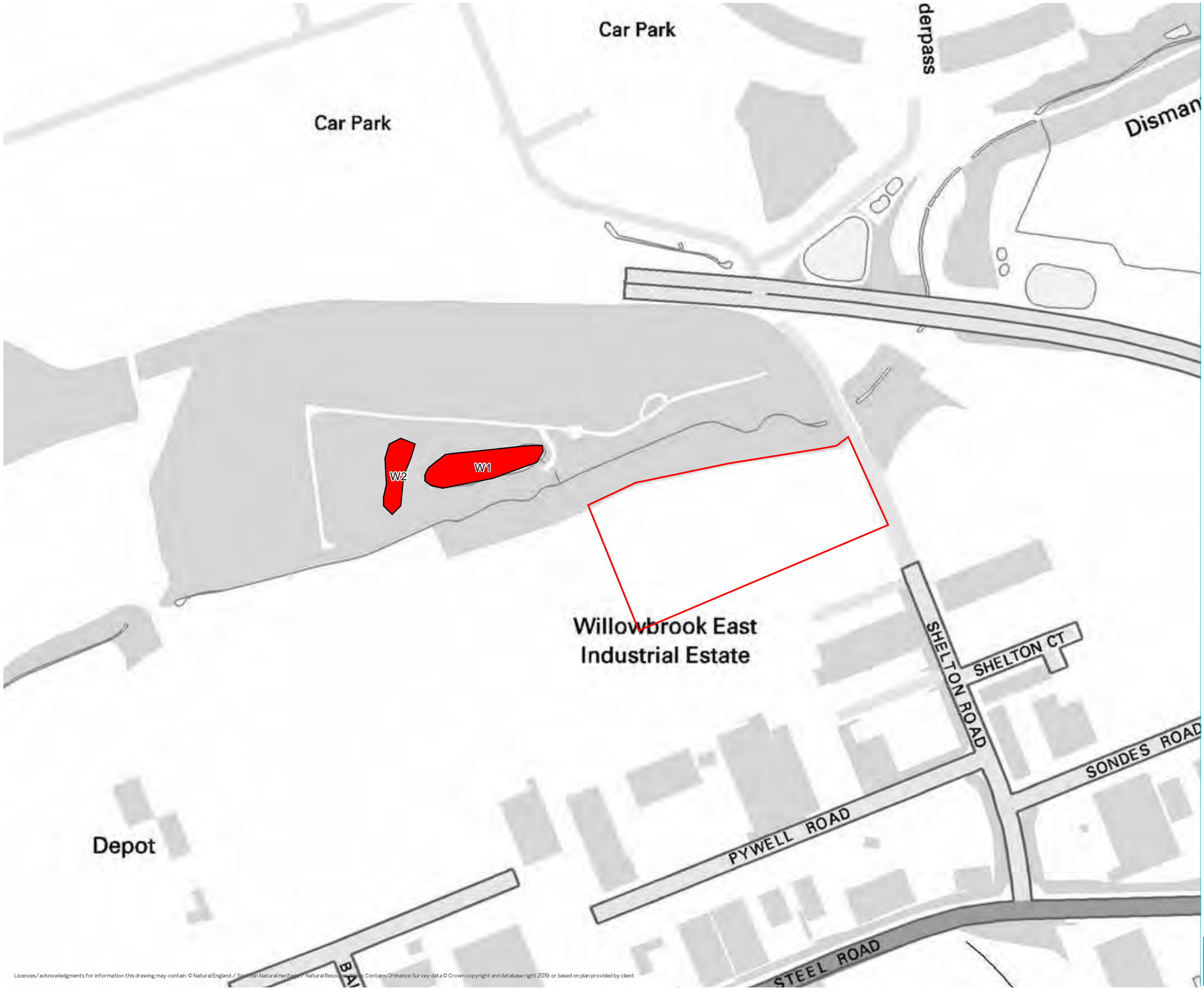
National Planning Policy Framework:
http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

Natural Environment and Rural Communities Act 2006:
http://www.legislation.gov.uk/ukpga/2006/16/contents

UK Post-2010 Biodiversity Framework:
http://jncc.defra.gov.uk/page-6189

Wildlife and Countryside Act 1981:
http://www.legislation.gov.uk/ukpga/1981/69

Plans



Key

Site boundary

GCN eDNA survey results

GCN Presence Confirmed

keystone ecology

Entran

Shelton Road, Corby

Drawing Number: 182835/4/dwg1

Great Crested Newt eDNA Survey Results

Revision	Date	Drawn	Approved
rev1	27/02/2019	RF	LR

0 200 400 600

Meters

Central grid ref: SP909908

No dimensions to be scaled from this drawing
All dimensions/locations are to be checked on site
Measurements/locations displayed are for indicative purposes only

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Appendices

Appendix 1

Surescreen Forensics Ltd Survey Results

SureScreen Scientifics

Folio No:	E3330
Report No:	1
Order No:	18/7583
Client:	Keystone Environmental
Contact:	Elizabeth Robinson
Contact Details:	elizabeth.robinson@keyenv.co.uk, elizabeth.robinson@keyenv.co.uk, elizabeth.robinson@keyenv.co.uk
Date:	19/06/2018

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS

Date sample received at Laboratory: 15/06/2018
Date Reported: 19/06/2018
Matters Affecting Results: None

RESULTS

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3234	Pond 2 Shelton Road	SP90789092	Pass	Pass	Pass	Positive	12
3235	Pond 1 Shelton Road	SP90789092	Pass	Pass	Pass	Positive	8

SUMMARY

When Great Crested Newts (GCN); Triturus cristatus inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water, we can analyse these small environmental DNA (eDNA) traces to confirm GCN habitation, or establish GCN absence.

The water samples detailed below were submitted for eDNA analysis to the protocol stated in

DEFRA WC1067 (Latest Amendments). Details on the sample submission form were used as the unique sample identity.

RESULTS INTERPRETATION

Lab Sample No.- When a kit is made it is given a unique sample number. When the pond samples have been taken and the kit has been received back in to the laboratory, this sample number is tracked throughout the laboratory.

Site Name- Information on the pond.

O/S Reference – Location/co-ordinates of pond.

SIC- Sample Integrity Check. Refers to quality of packaging, absence of tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to results errors. Inspection upon receipt of sample at the laboratory. To check if the Sample is of adequate integrity when received. Pass or Fail.

DC- Degradation Check. Analysis of the spiked DNA marker to see if there has been degradation of the kit since made in the laboratory to sampling to analysis. Pass or Fail.

IC- Inhibition Check- PCR inhibitors can cause false results. Inhibitors are analysed to check the quality of the result. Every effort is made to clean the sample pre-analysis however some inhibitors cannot be extracted. An unacceptable inhibition check will cause an indeterminate sample and must be sampled again.

Result- NEGATIVE means that GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as no evidence of GCN presence. POSITIVE means that GCN eDNA was found at or above the threshold level and the presence of GCN at this location at the time of sampling or in the recent past is confirmed. Positive or Negative.

Positive Replicates- To generate the results all of the tubes from each pond are combined to produce one eDNA extract. Then twelve separate analyses are undertaken. If one or more of these analyses are positive the pond is declared positive for the presence of GCN. It may be assumed that small fractions of positive analyses suggest low level presence but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive.

METHODOLOGY

The laboratory testing adheres to strict guidelines laid down in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt, Version 1.1

The analysis is conducted in two phases. The sample first goes through an extraction process where all six tubes are pooled together to acquire as much eDNA as possible. The pooled sample is then tested via real time PCR (also called q-PCR). This process amplifies select part of DNA allowing it to be detected and measured in ‘real time’ as the analytical process develops. qPCR combines PCR amplification and detection into a single step. This eliminates the need to detect products using gel electrophoresis. With qPCR, fluorescent dyes specific to the target sequence are used to label PCR products during thermal cycling. The accumulation of fluorescent signals during the exponential phase of the reaction is measured for fast and objective data analysis. The point at which amplification begins (the Ct value) is an indicator of the quality of the sample. True positive controls, negatives and blanks as well as spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared so they act as additional quality control measures.

The primers used in this process are specific to a part of mitochondrial DNA only found in GCN ensuring no DNA from other

species present in the water is amplified. The unique sequence appropriate for GCN analysis is quoted in DEFRA WC 1067 and means there should be no detection of closely related species. We have tested our system exhaustively to ensure this is the case in our laboratory. We can offer eDNA analysis for most other species including other newts.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. Kits are manufactured by SureScreen Scientifics to strict quality procedures in a separate building and with separate staff, adopting best practice from WC1067 and WC1067 Appendix 5. Kits contain a 'spiked' DNA marker used as a quality control tracer (SureScreen patent pending) to ensure any DNA contained in the sampled water has not deteriorated in transit. Stages of the DNA analysis are also conducted in different buildings at our premises for added

SureScreen Scientifics Ltd also participate in Natural England's proficiency testing scheme and we also carry out inter-laboratory checks on accuracy of results as part of our quality procedures.

Reported by: Sam Humphrey **Approved by:** Derry Hickman

End Of Report

Keystone Contact Details

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APPENDIX 11.4 WATER VOLE & OTTER SURVEY

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Shelton Road, Corby

Water Vole and Otter Survey Report

June 2018

KSP Renewables Limited

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keystone marine
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Shelton Road, Corby

Water Vole and Otter Survey Report

June 2018

KSP Renewables Limited

Version	Date	Author	Checked	Approved
Final	16/01/2019	L Robinson	C Cartwright	S Bracken
Revision 1	27/02/2019	L Robinson	C Cartwright	S Bracken

Contents

Plans

Contact details can be found at the end of this document.

1.0 Introduction

Background

1.1 Keystone Ecology was instructed by KSP Renewables Ltd to undertake a Water Vole and Otter Survey along a section of the Willow Brook which is located to the north of land proposed as an Energy Recovery Facility off Shelton Road, Corby (central grid reference SP 9100 9088).

1.2 Due to proximity, noise; lighting; and pollution, the proposed development has the potential to impact protected species which may be using the Willow Brook and, therefore, survey was recommended within the Preliminary Ecological Appraisal (Keystone Ecology, 2018).

Aims and Objectives

1.3 The aim of the Water Vole Survey was to:

- Determine presence or likely absence of Water Vole;
- If present, obtain an indication of population size and distribution;
- Identify likely impacts of the proposed development on Water Vole;
- Recommend measures to avoid or reduce impacts on Water Vole; and
- Advise on any requirement to attain a licence from Natural England to proceed with the works.

1.4 The aim of the Otter Survey was to:

- Determine presence or likely absence of Otter;
- If present, obtain an indication of the level of site usage;
- Identify likely impacts of the proposed development on Otter;
- Recommend measures to avoid or reduce impacts on Otter; and
- Advise on any requirement to attain a licence from Natural England to proceed with the works.

Site Characteristics

1.5 The site is located along the eastern perimeter of the Willowbrook Industrial Estate and comprises a large car forecourt with a sparse ephemeral/short perennial community growing between strips of hard standing. The site is approximately 1.95 hectares in size. A narrow band of poor semi-improved grassland is present along the northern site boundary with a line of scrub and immature trees along the eastern boundary.

1.6 Large car forecourts lie to the west of the site, with numerous steel clad industrial units located to the south. A potential Local Wildlife Site (pLWS) runs parallel with the site's northern boundary and the Willow Brook runs from west to east through the southern part of the broadleaved woodland present. The Willow Brook continues northwards where it flows beneath the newly constructed Corby Northern Orbital Road.

Legislation, Planning Context and Status[1]

Protection Legislation - Water Vole

1.7 Water Vole receive legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (and amendments). This makes it an offence to intentionally:

- Kill a Water Vole.

or to intentionally or recklessly:

- Damage, destroy or obstruct access to any structure or place which Water Voles use for shelter or protection; and
- Disturb Water Voles while they are using such a place.

Protection Legislation - Otter

1.8 Otter are listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended) (referred to as The Conservation Regulations) and as such receive protection under Regulation 41 of these Regulations. Otter are also listed under Schedule 5 of The Wildlife and Countryside Act 1981 and therefore, receive protection under Section 9 of this Act (as amended by the Countryside and Rights of Way Act 2000).

1.9 This legislation makes it an offence to:

- Deliberately capture or kill an Otter;
- Deliberately disturb[2] an Otter;
- Intentionally or recklessly disturb[3] an Otter;
- Intentionally or recklessly obstruct access to any structure or place an Otter uses for shelter or protection; and
- Damage or destroy a breeding site or resting place of an Otter.

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

[2] Affect its ability to survive, breed or rear young, impair its ability to migrate or hibernate, affect its local distribution or abundance.

[3] Whilst occupying a structure or place used for shelter or protection.

1.10 In the case of Vivienne Morge vs. Hampshire County Council (2010), the Supreme Court has defined deliberate disturbance as 'an intentional act knowing that it will or may have a particular consequence, namely disturbance of the relevant protected species.'

1.11 Since 2007 it is no longer a valid defence to show that the killing, capture or disturbance of a species covered by the Conservation Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of an otherwise lawful activity.

1.12 EPS licences can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed:

- The development is for reasons of overriding public interest;
- There is no satisfactory alternative; and
- The favourable conservation status of the species concerned will be maintained and/or enhanced.

Protection Afforded by the Planning System

1.13 The National Planning Policy Framework (NPPF) sets out government policy regarding consideration of biodiversity in planning decisions. Under the NPPF the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

1.14 The NPPF 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 (SSSI) likely to have an adverse effect on a SSSI (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 SSSIs;*
- *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;*

- *the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'*

1.15 Under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Habitats/Species of Principal Importance, of which there are 56 habitats (HPI) and 943 species (SPI). The list is used to guide planning authorities in implementing their duty under the NERC Act.

1.16 Water Vole and Otter are SPI.

1.17 Water Vole and Otter are target species in the Northamptonshire BAP (Northampton Biodiversity Partnership, 2009).

1.18 Under Regulation 9(5) of the Conservation Regulations, Planning Authorities also have a legal duty to 'have regard to the requirements of the Habitats Directive in the exercise of their functions'. As demonstrated by the case of Woolley vs. Cheshire East Borough Council and Millennium Estates Ltd (2009), this means that they must consider the 3 Habitats Directive tests (see above) when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed.

2.0 Methodology

Desk Study

2.1 As part of the Preliminary Ecological Appraisal carried out by Keystone Ecology (Keystone Ecology, 2018), Northamptonshire Biodiversity Records Centre (NBRC) was contacted for records of Water Vole and Otter within 500 metres of the proposed development site.

2.2 Web-resources (Natural England, 2016; Gov.uk 2016) were also searched for any sites designated for Water Vole and Otter within a 2 kilometre radius of the site boundary.

Field Survey and Assessment - Water Vole

2.3 The stretch of the Willow Brook, running parallel with the site, and measuring approximately 175 metres in length was subject to survey as well as the channel up and downstream. The channel was followed approximately 100 metres north-east until a culvert extended beneath the Corby Northern Orbital Road and 250 metres to the west within the boundary of the pLWS. Refer to *Drawing 182835/3/dwg1* for the defined survey area.

2.4 A detailed search of both banks of the watercourse was undertaken for signs of Water Vole activity. This involved a search for feeding remains (stacks of neatly cut vegetation), latrines (sites regularly used for depositing droppings which act as territory markers), droppings (non-latrine sites) burrows, prints and runs.

2.5 The survey was undertaken on 11th June 2018 by an Ecologist from Keystone Ecology (Tas Adcock, MSc ACIEEM), trained in the identification of Water Vole field signs, who satisfies all necessary field survey competencies as set out by our governing body, the Chartered Institute for Ecology and Environmental Management (CIEEM).

Field Survey and Assessment - Otter

2.6 The survey area was the same as that described for Water Vole. Refer to *Drawing 182835/3/dwg1* for the defined survey area.

2.7 A detailed search of both banks of the watercourse was undertaken for signs of Otter activity. This involved a search for feeding remains, spraints, prints, tracks, lay-ups and holts.

2.8 The survey was undertaken on the same date as the Water Vole Survey.

Nomenclature

2.9 The English names of flora and fauna species are given in the main text of this report. Scientific names are used only in the absence of English names. Vascular plants and Charophytes follow the nomenclature of The Botanical Society for the British Isles database (2007) with all other flora and fauna following the UK Species Inventory (Natural History Museum, 2016).

Limitations

2.10 Keystone Ecology staff and their sub-consultants endeavour to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.

2.11 The results of the survey and assessment work undertaken by Keystone Ecology are representative at the time of surveying.

2.12 Up to date standard methodologies are used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. Keystone Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.

3.0 Results and Assessment

Desk Study

3.1 No records of Otter or Water Vole were identified in the desk study searches conducted as part of the Preliminary Ecological Appraisal (Keystone Ecology, 2018).

Willow Brook – Watercourse Description

3.2 The banks of the Willow Brook vary greatly from 1 metre in height to 10 metres and are all steep and primarily comprise mud. Some areas of the channel were dry and others had a shallow, slow flow. The watercourse was approximately 1.5 metres wide, and where present, water was < 0.1 metres deep. Submerged and emergent vegetation was absent at the time of survey, and marginal vegetation was restricted to occasional stands of Hard and Soft Rush.

Field Survey - Water Vole

3.3 No signs of Water Vole were identified during the survey. The absence of field signs infers likely absence of Water Vole along the surveyed section of the Willow Brook.

Field Survey - Otter

3.4 No signs of Otter were identified during the survey. The absence of field signs infers likely absence of Otter along the surveyed section of the Willow Brook.

4.0 Impacts

Water Vole

4.1 Water Vole are likely absent from this watercourse and, therefore, no impact to this species is anticipated as a result of the works.

Otter

4.2 Otter are likely absent from this watercourse and, therefore, no impact to this species is anticipated as a result of the works.

4.3 As this species is highly mobile the Willow Brook could be colonised by Otter in the near future.

5.0 Mitigation

Further Survey

5.1 Further survey would only be required if the works were delayed for more than 2 years. If this were to be the case, a repeat survey would be recommended before work commenced to confirm that the status of the Willow Brook remains the same as that described within this report.

Legal Compliance

Water Vole

5.2 A licence to trap Water Vole will not be required in order to proceed with the proposed works.

Otter

5.3 An EPS licence will not be required in order to proceed with the proposed works.

Water Vole and Otter Mitigation

Precautionary Approaches during Construction and Operation

5.4 Although Otter and Water Vole are likely absent from Willow Brook, watercourses are a valuable natural resource, particularly in a built up environment. During both the construction and operational phases, methods of working must comply with The Environment Agency Pollution Prevention Guidelines to avoid sediment/pollution discharge effects upon the quality of water flowing through the Willow Brook.

6.0 References

Botanical Society for the British Isles (2007). *BSBI 2007 List*. Available at: http://www.bsbi.org.uk/taxonomy.html [Accessed on 16th January 2019].

Chartered Institute of Ecology and Environmental Management (2016). *Guidelines for Ecological Impact Assessment in the United Kingdom. Terrestrial, Freshwater and Coastal*. Available at: http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf [Accessed on 16th January 2019].

Gov.uk (2016). *Find protected areas of countryside*. Available at: https://www.gov.uk/check-your-business-protected-area [Accessed on 16th January 2019].

Keystone Ecology (2018). *Preliminary Ecological Appraisal*. Keystone Environmental Ltd. Tetbury.

Morris P.A., Morris M.J., MacPhearson D., Jefferies D.J., Strachan R. and Woodroffe G.L. (1998). Estimating numbers of the Water Vole *Arvicola terrestris*: a correction to the published method. *Journal of Zoology.* 246: p61-62.

Natural England (2016). *Natural England GIS Digital Boundary Database*. Available at: http://www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm [Accessed on 16th January 2019].

Natural History Museum. (2016). *UK Species Inventory*. Available at: http://www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity/uk-species/index.html [Accessed on 16th January 2019].

Northampton Biodiversity Partnership (2009). *Northamptonshire Biodiversity Action Plan*. Available at: http://www.northamptonshirebiodiversity.org/ [Accessed on 17th January 2019].

Strachan, R., Moorhouse, T. and Gelling, M. (2011). *Water Vole Conservation Handbook. 3rd ed.* Wildlife Conservation Research Unit: Oxford.

Web Addresses for Access to Full Legislation and Policy Text:

Conservation of Habitats and Species (Amendment) Regulations 2010 (as amended): http://www.legislation.gov.uk/uksi/2012/1927/contents/made

Countryside and Rights of Way Act 2000: http://www.legislation.gov.uk/ukpga/2000/37/contents

Habitats Directive: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

National Planning Policy Framework: http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

Natural Environment and Rural Communities Act 2006: http://www.legislation.gov.uk/ukpga/2006/16/contents

UK Post-2010 Biodiversity Framework:
http://jncc.defra.gov.uk/page-6189

Wildlife and Countryside Act 1981:
http://www.legislation.gov.uk/ukpga/1981/69

Plans

Key

Site boundary

Watercourse surveyed for Water Vole and Otter

N.B. No evidence of Water Vole or Otter recorded during survey

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Entran

Shelton Road, Corby

Drawing Number: 182835/3/dwg1

Water Vole and Otter Survey Results

Revision	Date	Drawn	Approved
rev1	27/02/2019	RF	LR

0 200 400 600

Meters

Central grid ref: SP909908

No dimensions to be scaled from this drawing
All dimensions/locations are to be checked on site
Measurements/locations displayed are for indicative purposes only

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APPENDIX 11.5 WHITRE CLAWED CRAYFISH SCOPING ASSESSMENT

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Mr A Shotliff
KSP Renewables
17 Hanover Square
London
W1S 1BN

Your Ref:
Our Ref: 182835/3

08 February 2019

Dear Alistair,

Re White-Clawed Crayfish Scoping Survey – Shelton Road, Corby

Background

The Preliminary Ecological Appraisal undertaken by Keystone Ecology in 2018 did not identify any waterbodies on site however the Willow Brook is situated approximately 30 metres north and could be affected by pollution incidents arising from the proposed Energy Recovery Facility at the above site. Due to proximity, a scoping exercise was recommended in order to assess the Willow Brook for indicators/contra-indicators to White-Clawed Crayfish presence.

The findings of the scoping exercise would determine the need for subsequent Presence/Absence survey along this watercourse to assess impacts to White-Clawed Crayfish.

Desk Based Searches

Information from Northamptonshire Biodiversity Records Centre (NBRC) was received in May 2018. No records of White-Clawed Crayfish were identified within 0.5 kilometres of the site.

A search on the NBN Atlas did not identify records of White-Clawed Crayfish along any watercourses flowing to the north of Corby town with the closest record situated over 8 kilometres to the south, crossing Corby itself, along the River Ise.

The Willow Brook is a tributary of the River Nene and the NBN Atlas did not identify any records of White-Clawed Crayfish along these watercourses.

The Willow Brook has no connectivity with the River Ise where White-Clawed Crayfish presence is confirmed.

Based on the desk based searches undertaken it is unlikely White-Clawed Crayfish are present along the Willow Brook.

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Scoping Assessment

An experienced Ecologist, Tas Adcock MSc ACIEEM, conducted a detailed assessment of the Willow Brook for its suitability to support White-Clawed Crayfish in June 2018. The scoping survey included a detailed assessment of the watercourse and identified indicators and/or contra-indicators to crayfish presence and was conducted in line with habitat preferences and requirements stated within the Monitoring White-Clawed Crayfish guidance report (Peay, 2003).

The watercourse was approximately 1.5 metres wide, and the water <0.1 metres deep at the time of survey. The banks vary greatly from 1 metre to 10 metres in height and all are steep and primarily comprised mud. Submerged and emergent vegetation was absent at the time of survey, and marginal vegetation was restricted to occasional stands of Hard and Soft Rush.

Contra-indicators to the presence of White-Clawed Crayfish were observed as follows:

- The substrate is primarily mud/silt and White-Clawed Crayfish prefer hard substrates to soft, muddy ones.
- The banks are not undercut; there are no exposed tree root systems within the channel; and no overhanging bankside vegetation. These items provide the types of refuge opportunities sought by crayfish.
- There are few in channel refuge opportunities i.e. large boulders/rocks etc.
- The water has a slow flow and in some areas the brook is completely dry. Low water levels increase the vulnerability of White-Clawed Crayfish to predation and whilst they are known to occupy stillwater they tend to be more prevalent along faster flowing watercourses. White-Clawed Crayfish have specific habitat requirements in order to extend their range up or down stream and the lack of continuous habitat along the Willow Brook effectively isolates the watercourse from migrating White-Clawed Crayfish.
- There is little emergent or marginal vegetation that would provide cover or food resources for this species at the channel's edge.

Conclusion

The Willow Brook is suboptimal for occupation by White-Clawed Crayfish and given the nature of the watercourse, and the fact that White-Clawed Crayfish do not make extensive movements (Bubb *et* al.), it is highly likely that this species is currently absent from the Willow Brook and there is no means for future colonisation.

There is no requirement to undertake a formal Presence/Absence Survey for White-Clawed Crayfish based on the evidence obtained during the scoping assessment.

Yours sincerely

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References:

- Peay S (2003). Monitoring the White-clawed Crayfish *Austropotamobius pallipes*. Conserving Natura 2000 Rivers Monitoring Series No. 1, English Nature, Peterborough
- Bubb D et al (2007). Spatial Ecology of the White-Clawed Crayfish. Aquatic Conservation & Freshwater Ecosystems. Volume 18, Issue 5.
- Bubb D et al (2006). Movement, Dispersal & Refuge use of Co-Occurring Introduced & Native Crayfish. Freshwater Biology Volume 41, Issue 7.