
AMP 5 Batch 9: Crow Edge – Proposed Access Works Outside the Sewage Treatment Works – Ecology Report

1. Introduction

Crow Edge Sewage Treatment Works (STW) is located at Ordnance Survey (OS) grid reference SE 192 039, to the south west of Crow Edge village, Barnsley, South Yorkshire.

Works to extend the western end of the existing access track at the Crow Edge STW have been proposed by Yorkshire Water. An extension of approximately 60m to the existing access is required outside the STW boundary in order that the entry point from the road can be moved to the north, where visibility of oncoming traffic is considerably better. The new access will be approximately 4 to 4.5m wide along the majority of the track but will be approximately 5m at the junction of the highway. The construction works are expected to take approximately four months to complete, and will require the use of additional inert material to re-grade the access route.

This report summarises the results of an ecology desk study and extended Phase 1 habitat survey, including pond assessments, undertaken on 24 November 2010. The survey area incorporates the proposed access extension area and the STW and includes habitats for up to 30m surrounding these areas. This report identifies potential ecological constraints to the work, recommendations for further survey work and mitigation, as appropriate, including a summary of these recommendations in order to support a planning application to Barnsley Metropolitan Borough Council.

2. Methodology

2.1 Desk Study

An ecology desk study was undertaken in order to gather information relating to statutory and non-statutory nature conservation sites and records of species¹ that are afforded legal protection or are otherwise notable (see **Box 2.1**) within 1km of the proposed access works. The principal search area was limited to 1km as due to the nature of the proposed development it is unlikely that any ecological impacts will be exerted beyond this distance.

The desk study is important as it may indicate the presence or potential presence of legally protected and/ or notable species that could occur within the survey area or surrounding habitats, and which could be constraints on the development of the site.

The following sources of information were consulted:

- South Yorkshire badger group;

¹ Species records from the past 15 years were requested from the consultee.

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- South Yorkshire bat group;
 - South Yorkshire herptile recorder;
 - The Environment Agency;
 - Barnsley Unitary Development Plan, Volume 5 Dodworth Community Area (adopted December 2000);
 - Multi Agency Geographic Information for the Countryside (MAGIC) at www.magic.gov.uk; and,
 - Natural England website at www.naturalengland.org.uk.

A search was also undertaken to identify potential great crested newt (*Triturus cristatus*) ponds using 1:10,000 Ordnance Survey maps to search for any water bodies present within 500m of the proposed access works. This search area reflects the fact that great crested newt spend much of their life utilising terrestrial habitat, typically within 500m of their breeding ponds (English Nature, 2001)².

² English Nature (2001) '*Great Crested Newt Mitigation Guidelines*'. English Nature, Peterborough.

Box 2.1 Designated wildlife sites and protected and notable species**Statutory nature conservation sites**

Natural England notifies sites that are of international or national importance for nature conservation as Sites of Special Scientific Interest (SSSIs) (although some sites that are of national importance for certain species have not been so designated). Internationally important sites may also be designated as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites.

Natural England has also designated some areas which have national value to wildlife as National Nature Reserves (NNRs). Most of these sites tend to have a broad ecological value rather than particularly rare species and have an important educational and recreational role. Local Nature Reserves (LNRs) serve a similar role but at a local level.

Non-statutory nature conservation sites

Non-statutory nature conservation sites in the Barnsley area are known as Natural Heritage Sites. These sites contain nationally or regionally important habitats, wild plants and animals which are identified in local Biodiversity Action Plans.

Legally protected species

Many species of animal and plant receive some degree of legal protection. For the purposes of this study, legal protection refers to:

- species included on Schedules 1, 5 and 8 of the *Wildlife and Countryside Act 1981* (as amended), excluding species that are only protected in relation to their sale (see Section 9[5] and 13[2]), reflecting the fact that the proposed development does not include any proposals relating to the sale of species;
- species included on Schedules 2 and 4 of The Conservation of Habitats and Species Regulations 2010 (SI 2010/490); and
- badgers, which are protected under the Protection of Badgers Act 1992.

Notable habitats and species

There are a number of habitats and species, which, whilst not receiving statutory protection, are of importance to nature conservation. These are referred to as notable, and include:

- Habitats and species of principal importance for the conservation of biological diversity in England; these are listed in Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Planning Policy Statement 9³ requires that these are a material consideration in determination of planning applications. In practice these are the same as the UK BAP priority habitats and species; and
- species listed in the relevant UK Red Data Book (RDB).

2.2 Field Survey

An extended Phase 1 habitat survey was carried out on 24 November 2010 by Entec Assistant Ecologist Jennie Caddick (BSc (Hons), MIEEM, AIEMA).

The survey method was based on standard Phase 1 habitat survey methodology⁴. The detailed survey area comprised the proposed access extension area and the STW and habitats for up to 30m surrounding these areas. Within the survey area, distinct habitats were identified and mapped. The standard Phase 1 habitat survey methodology is concerned only with vegetation

³ Planning Policy Statement 9 sets out planning policies on protection of biodiversity and geological conservation through the planning system.

⁴ Joint Nature Conservancy Council (2007) *Handbook for Phase 1 Habitat Survey*. Peterborough, UK.

communities, therefore the method was extended⁵ to include the collection of information on other features of potential nature conservation value, particularly to identify the presence/potential presence of legally protected species, such as bats, badger (*Meles meles*), otter (*Lutra lutra*) and water vole (*Arvicola amphibious*). Thus the survey area was assessed for:

- the potential for previously unrecorded areas or features of ecological interest;
- evidence of the presence of legally protected species and other species of notable nature conservation value; and,
- the presence of habitats that could support legally protected or notable species.

In addition, ponds identified within 500m of the proposed working area during the desk study were also included in the field survey and were screened for their potential to support great crested newts using Habitat Suitability Indices (HSI)⁶. Habitats between the ponds and the proposed access works were also mapped to show the level of connectivity between the ponds and the proposed works.

3. Results

3.1 Desk Study

Statutory and non-statutory sites of nature conservation value and legally protected/ notable species that occur, or have previously been recorded, within 1km of the STW are described below.

3.1.1 Sites of Nature Conservation Value

No statutory protected sites were identified within 1km of the proposed access works and therefore they are not considered further in this report.

One non-statutory designated site: Whitley Edge Natural Heritage Site, was identified within 1km of the STW. Whitley Edge Natural Heritage Site is located approximately 460m to the north east of the proposed access works and is designated for its diversity of habitats including acid grassland, mire and the largest area of western gorse (*Ulex gallii*) in the area. However, in view of the nature of the proposed works and the distance to the non-statutory site, no effects on the site are likely, and therefore it is scoped out of requiring further consideration within this report.

3.1.2 Protected Species

No records of protected species were identified within 1km of the proposed access works.

⁵ Institute of Environmental Assessment (IEA) (1995) 'Guidelines for Baseline Ecological Assessment'. E&FN Spon.

⁶ The Habitat Suitability Index (HSI) is a quantitative figure calculated from several factors present within and around a pond: the pond area, the number of ponds within 500m, the percentage of shade, water quality, presence of waterfowl, fish, pond density, good newt habitat nearby and the level of macrophyte vegetation. The lowest HSI obtained at a site known to support great crested newts is 0.43. Oldham, R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* Vol 10 pp143-155.

3.1.3 Ponds

Six ponds were identified within 500m of the proposed access works during the desk study. All ponds occur to the north and north east of the proposed access works within the adjacent Wavin Ltd. quarry site.

3.2 Field Survey

Figure 3.1 shows the habitats recorded during the extended Phase 1 habitat survey. A description of the habitats recorded within the detailed survey area is given below, along with a description of potential for protected/ notable species to occur.

Habitats

Amenity Grassland

The STW is demarcated by metal palisade fencing with the majority of the habitat within this compound comprising amenity grassland and stone access tracks surrounding the infrastructure. Species recorded within the amenity grassland include dominant perennial rye-grass (*Lolium perenne*) with creeping buttercup (*Ranunculus repens*), hairy willowherb (*Epilobium hirsutum*) and white clover (*Trifolium repens*).

Improved Grassland

A large area of improved grassland with occasional soft rush (*Juncus effuses*) is present to the north of the STW site, including the proposed access works area.

Poor Semi-improved and Marshy Grassland

A mosaic of poor semi-improved grassland and marshy grassland is present to the east and south of the STW. The semi-improved grassland includes perennial rye-grass, tufted hair-grass (*Deschampsia cespitosa*), occasional common nettle (*Urtica dioica*), hairy willowherb and creeping buttercup. The marshy grassland is dominated by soft rush, with occasional gorse (*Ulex* species) and hawthorn (*Crataegus mongyna*) scrub. The grasslands are sheep-grazed and have field boundaries formed by post and wire fences and stone walls.

Reedbed

An area of common reed (*Phragmites australis*), approximately 30 x 10m, was identified at OS grid reference SE 193 039. The reedbed is located within settling tanks in the south east of the STW.

Woodland and Scattered Trees

Four semi-mature trees (two cherry (*Prunus* species), one silver birch (*Betula pendula*) and one sycamore (*Acer pseudoplatanus*)) are present within amenity grassland in the north east of the STW, inside the boundary fence.

The existing concrete access track enters the west side of the STW from the main road, to the west. Broad-leaved plantation woodland borders both sides of the track comprising cherry (*Prunus* species), rowan (*Sorbus aucuparia*), sycamore, alder (*Alnus glutinosa*), willow (*Salix* species), silver birch, hawthorn and field maple (*Acer campestre*).

Scrub and Tall Ruderal Vegetation

An area of tall ruderal vegetation comprising dense hairy willow herb and common nettle is present within and adjacent to the proposed access works area.

Broad-leaved plantation woodland within the STW compound becomes more open in structure toward the west with hawthorn, dog rose (*Rosa canina*) and bramble (*Rubus fruticosus*) scrub recorded within the understorey. An area of tall ruderal vegetation including common nettle, creeping thistle (*Cirsium arvense*) and mugwort (*Artemisia vulgaris*) giving way to dense hairy willow herb is present in the west of the STW bordering the road.

Isolated tall ruderal vegetation growth with frequent common nettle was also identified beneath the STW palisade boundary fencing.

Watercourses

The Sledbrook Dike flows approximately 30m to the east of the STW boundary, and approximately 95m to the east of the proposed access works. The brook is approximately 4m wide and fast flowing. Soft rush and gorse scrub grow along the brook margins with semi-natural beech (*Fagus sylvatica*) woodland recorded along the eastern bank.

Waterbodies

Six ponds (**Ponds A-F**), were identified during the desk study within 500m of the proposed access works during the desk study.

Pond A - located at SE 194 040, the pond is approximately 15 years old (pers. comm.. Paul Hennel, site manager 24/11/2010) and is the third pond in a complex of three balancing ponds (including ponds A-C) taking run-off water from the quarry works. The pond is located approximately 230m to the north east of the proposed access works and is approximately 55 x 20m with marginal vegetation surrounding the entire waters edge, including soft rush, common bulrush (*Typha latifolia*), willow (*Salix* species) scrub and tufted hair-grass. Bordering vegetation comprises rough grassland and scrub with isolated coniferous trees.

Pond B - located at SE 194 041, approximately 230m to the north east of the proposed access works, this is the central pond in a complex of three balancing ponds. The pond is also approximately 15 years old and approximately 30 x 8m in size. Large pipe culverts link this pond to ponds A and C, approximately 15m to the south and 5m to the north respectively. The pond is choked with common bulrush, with exception of a small area of open water to the north end, and dries out during the summer (pers comm. Paul Hennel, site manager 24/11/2010).

Pond C - located at SE 194 041, approximately 230m to the north east of the proposed access works, this is the most northerly pond in the balancing pond complex. The pond is also approximately 15 years old and approximately 10 x 30m in size. As for pond B, this pond is choked with common bulrush and dries out over the summer. No open water was identified during this visit. Gorse and willow scrub border the pond, and a moorhen (*Gallinula chloropus*) was noted amongst the bulrush.

Pond D - located approximately 185m to the north east of the proposed access works at SE 193 041. The pond was built in order to hold water from the Burntshaw Brook as it is diverted around the quarry workings (pers comm. Paul Hennel, site manager) and currently receives water from the northern side with an outfall on the south east corner. The pond is

approximately 10 x 10m and 150m to the north of the proposed access works. The pond is bordered by tufted hair-grass including isolated soft rush and willow scrub on the east side.

Pond E - identified from Ordnance Survey maps within the northern part of the quarry workings, this pond is no longer present on the ground, therefore, has not been considered further within this report.

Pond F - located at SE 193 042 approximately 225m to the north of the proposed access works within the active quarry area. The water body is the result of 'backing up' of the Burntshaw Brook caused by the culvert which has been installed downstream (taking water into pond D), and has a through flow. The water body is approximately 15m long and 3m wide (the width of the existing brook) with common bulrush growth within the water and bordering willow scrub and soft rush.

Fauna

Otter and Water Vole

The Sledbrook Dike occurs approximately 30m to the east of the STW boundary and approximately 95m to the east of the proposed works at the closest point, and offers potential habitat for otter and water vole. However, based on the distance from the proposed works, these species are scoped out of requiring further consideration.

Badger

Grassland habitats within the proposed access works and, broad-leaved plantation woodland and poor semi-improved and marshy grassland habitats within the wider area do provide foraging and sett building opportunity for badger. Despite this, no evidence of badger was identified within the survey area.

Great Crested Newt

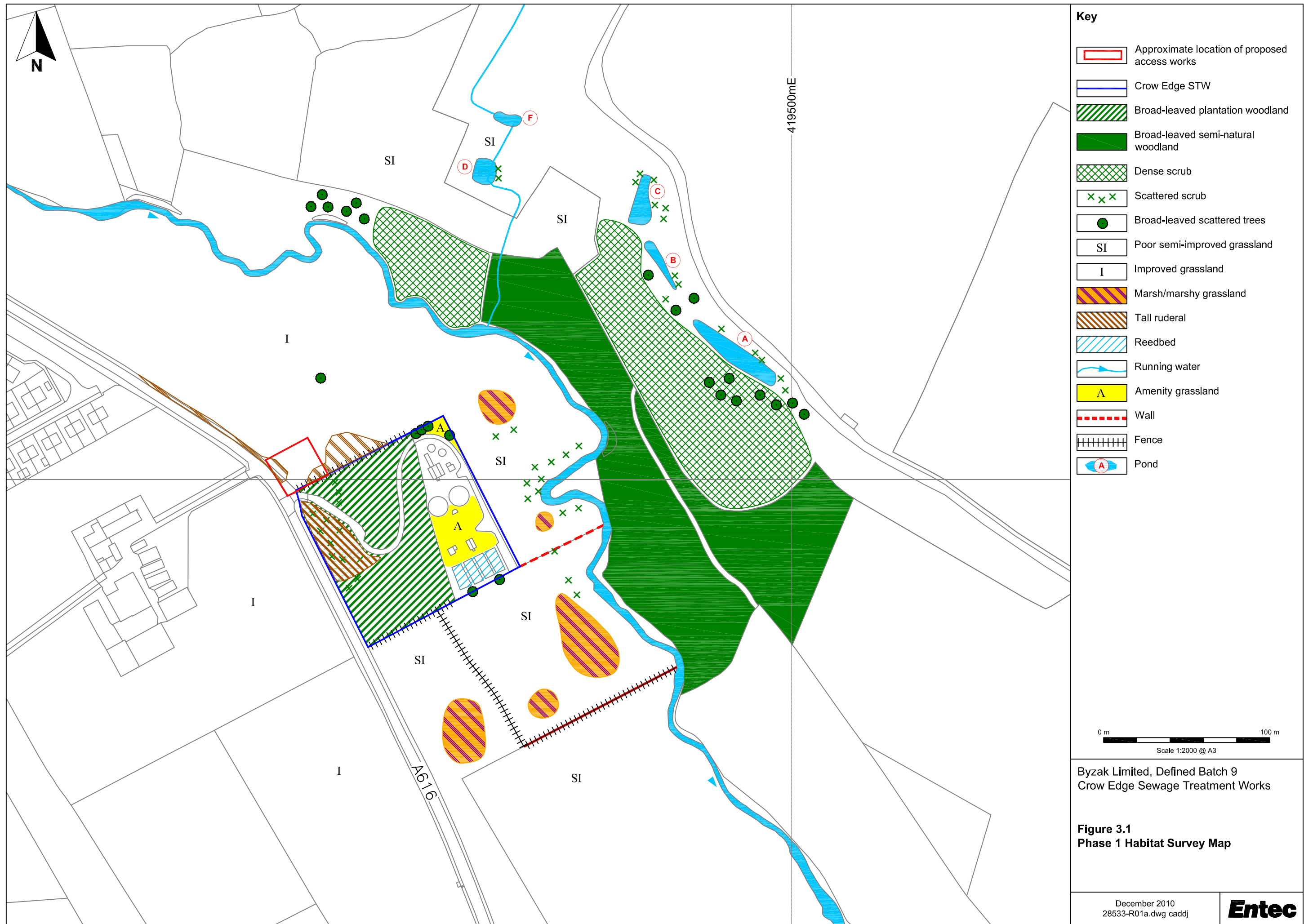
Habitat Suitability Index (HSI)⁶ scoring undertaken for Ponds A-D and F identified potential for great crested newts at Ponds A-D and Pond F. Based on the HSI results, Pond A has excellent potential to support great crested newts, Ponds B and D have average potential, and Ponds C and F have below average potential. Pond E was no longer present on the ground. Detailed results of HSI scoring for each pond are given in **Appendix A**.

Bats

Two small pump house buildings were identified within the STW. Both are of brick construction with flat, concrete roofs and a single entrance door and concreted window. Both were in a good state of repair with no gaps in the brickwork or along the roof line identified and therefore no potential for roosting bats. Similarly, none of the trees within the survey area have potential to support roosting bats. Therefore, these species are scoped out of requiring further consideration.

Nesting Birds

Trees and reedbed within the existing STW compound, including plantation woodland adjacent to the existing access track were identified as having potential to support breeding birds (with several nests recorded).



4. Discussion

Habitats

Approximately 60m x 4 to 4.5m of improved grassland and tall ruderal vegetation will be permanently lost as a result of the proposed access works. A further area of approximately 60m x 5.5m will be temporarily disturbed during earth re-grading works. These habitats are of low ecological value and are abundant within the wider area and so there will be no impact upon ecological diversity of the wider landscape. It is recommended, however, that following the works any temporarily disturbed areas are re-seeded with an appropriate native seed-mix or allowed to re-colonise naturally in order to maintain the natural vegetation within the area.

In view of the presence of the Sledbrook Dike, Environment Agency Pollution Prevention Guidelines (PPGs) should be adhered to throughout the works.

Fauna

Badger

No evidence of badger was identified within the survey area. However, due to the presence of suitable foraging habitat within and adjacent to the proposed access works area, it is recommended that a means of escape is provided in any steep-sided trenches overnight during the construction works (e.g. a wooden plank).

Great Crested Newt

The potential for great crested newt to occur in Ponds A to D and Pond F within 185m to 230m of the proposed access works has been identified. The proposed access works area provides a small area of potentially low to medium quality terrestrial foraging habitat for great crested newts. However, there is abundant habitat outside the proposed access works area comprising large areas of dense scrub and broad-leaved plantation woodland which provide plentiful, high quality terrestrial foraging and hibernating habitat, all within 100m of the ponds. Furthermore, the Sledbrook Dike flows to the west of the scrub and woodland, and although this does not create a significant barrier to great crested newt movement, it may discourage movement further west when the water level and flow rate is high. Habitat beyond the stream towards the proposed working area is dominated by improved grassland which provides only low quality terrestrial habitat for great crested newts. Therefore the risk of great crested newts being present within the proposed access works area is low.

Furthermore, the works are programmed to take place during the great crested newt active season (which is mid-March to October) (excluding the initial phase of vegetation removal – see below), thereby avoiding the risk of harming dormant great crested newts, and subject to grant of planning permission will begin in spring 2011 when great crested newts (should they be present) will be in their breeding ponds and not within terrestrial habitat.

As a precautionary measure, the proposed access works will be conducted under a Method Statement. The Method Statement will detail specific mitigation measures in order to minimise the risk of any contradiction of legislation in respect of great crested newts to an acceptably low

level using non-licensed avoidance measures as advocated by Natural England where offences can be avoided⁷. The Method Statement is supplied in **Appendix B**.

In view of the small area of potential low to medium quality terrestrial foraging habitat to be affected by the proposed access works relative to the extensive area of high quality habitat much closer to the ponds, and the low risk of great crested newts being present which is further reduced by the timing of the works and the implementation of mitigation measures detailed in a targeted Method Statement, the risk of affecting great crested newts is negligible and there will be no negative effect on the conservation status of great crested newts in the local area.

Nesting Birds

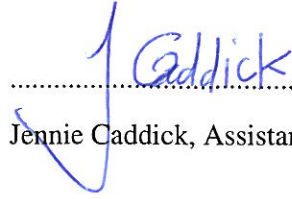
Habitats within the proposed access works area provide negligible opportunity for nesting birds. However, as a precautionary measure, tall vegetation within the proposed works area will be trimmed to approximately 15cm above ground prior to the bird nesting season (which is March to August inclusive), thereby removing any potential for nesting. The remaining short vegetation and roots will be removed during the GCN active period (which is mid-March to October) to minimise the risk of harming dormant GCN. Should additional vegetation clearance be required during the nesting season, an inspection for nests will be carried out by a qualified ecologist prior to works commencing. If bird nesting activity is observed, the works will be delayed until after dependent young have left the nest.

Table 4.1 Summary of Potential Impacts and Recommended Mitigation

Receptor	Potential Impacts	Mitigation required
Grassland and tall ruderal vegetation	Permanent and temporary loss of vegetation	Allow areas of disturbed vegetation to re-colonise naturally or re-seed with an appropriate native seed mix.
Sledbrook Dike	Pollution from site run-off	Adherence to Environment Agency PPGs.
Badger	Disturbance, killing or injury	A means of escape should be provided in any steep-sided trenches left open overnight during the construction works (e.g. a wooden plank).
Great crested newt	Disturbance, killing or injury	Installation of the proposed access extension is undertaken under a Method Statement which details mitigation specific to great crested newts (see Appendix B).
Nesting birds	Disturbance, killing or injury	Tall vegetation trimming to be carried out outside of the bird nesting season (which is March to August inclusive). Prior inspection for nests by an ecologist is required for any additional vegetation clearance necessary during the bird nesting season, and if nests are identified, clearance will be delayed until after dependent young have fledged.

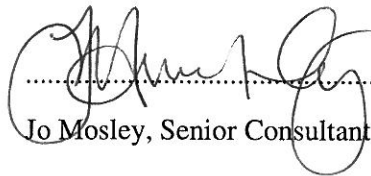
⁷ *Template for Method Statement to support application for licence under Regulation 44(2)(e) in respect of great crested newts Triturus cristatus.* (http://www.naturalengland.org.uk/Images/wmla14-2_tcm6-4103.xls).

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Appendix A

HSI Assessment

Pond Name	Location	Pond Area	Pond Drying	Water Quality	Shade	Fowl	Fish	Nearby Ponds	Terrestrial Habitat	Macrophytes	HSI	Suitability for GCN
Pond A	1	0.93	1	1	1	0.67	0.67	0.82	1	0.4	0.82	Excellent
Pond B	1	0.6	0.1	0.67	1	0.67	0.67	0.82	1	0.9	0.65	Average
Pond C	1	0.7	0.1	0.33	1	0.67	0.67	0.82	0.67	0.8	0.58	Below average
Pond D	1	0.2	0.5	1	1	0.67	0.67	0.82	0.67	0.3	0.61	Average
Pond E	Pond no longer present on the ground.											N/a
Pond F	1	0.05	0.5	0.67	1	0.67	0.67	0.82	0.33	1	0.54	Below average

Appendix B

Great Crested Newt Method Statement

Crow Edge STW - Access Extension Works - Great Crested Newt Method Statement

1. Introduction

Yorkshire Water proposes to extend the existing access track to Crow Edge Sewage Treatment Works (STW), located at Ordnance Survey (OS) grid reference SE 192 039, to the south west of Crow Edge village, Barnsley, South Yorkshire. The access track extension is required in order to relocate the STW access route from the main road (A616) to improve the visibility of oncoming traffic. The proposed access works require planning permission from Barnsley Metropolitan Borough Council.

A site plan is given in **Appendix A** showing the location of the proposed works and the habitats present in the vicinity. Proposed works are detailed in **Section 5** below.

There are no records of GCN within 1km of the proposed access works. However, an extended Phase 1 habitat survey conducted by Entec ecologist Jennie Caddick (BSc. (Hons) MIEEM AIEMA) during November 2010 identified the presence of five ponds within 250m of the proposed access works, the closest being located approximately 185m to the north east. Habitat Suitability Indices (HSI)¹ were calculated for the ponds to assess their suitability for great crested newts (*Triturus cristatus*) (GCN). Based on observations in the field and the results of the HSI assessment, all five ponds have potential to support GCN. The ponds and the surrounding habitats are described in more detail in **Section 4** and the results of HSI scoring are given in **Appendix B**.

2. Purpose of this Method Statement

GCN spend much of their life utilising terrestrial habitat, typically up to approximately 500m from their breeding ponds, but more usually within 250m (English Nature, 2001)². It has not been possible to confirm presence or absence of GCN from the ponds due to the seasonal restrictions on conducting GCN surveys. Due to the potential for negative effects on GCN (based on the assumption that they are present) during the proposed access upgrade in the absence of mitigation, this Method Statement has been produced to minimise the risk of any contradiction of legislation in respect of GCN to an acceptably low level using non-licensed avoidance measures as advocated by Natural England where offences can be avoided³.

¹ Oldham, R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* **Vol 10** pp143-155.

² English Nature (2001) 'Great Crested Newt Mitigation Guidelines'. English Nature, Peterborough.

³ Template for Method Statement to support application for licence under Regulation 44(2)(e) in respect of great crested newts *Triturus cristatus*. (http://www.naturalengland.org.uk/Images/wmla14-2_tcm6-4103.xls).

3. Legislation

GCN is listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of The Conservation of Habitats and Species Regulations 2010 (hereafter referred to as 'the Habitat Regulations'), and Schedule 5 of the Wildlife & Countryside Act 1981.

Therefore, under the Habitats Regulations it is an offence to:

- Deliberately capture, injure or kill GCN;
- Deliberately disturb GCN, in particular to cause any disturbance which affects their ability to survive, breed, reproduce, rear or nurture young, hibernate or migrate;
- Deliberately disturb GCN, thereby significantly affecting their local distribution or abundance;
- Deliberately take or destroy GCN eggs;
- Deliberately damage or destroy a breeding site or resting place;
- Possess, control or transport GCN;
- Use certain methods when capturing/taking or killing under licence;
- Attempt to commit one of the above offences, or
- Possess anything capable of being used to commit an offence.

Under the Wildlife and Countryside Act it is an offence to:

- Intentionally or recklessly disturb GCN whilst they are occupying a structure or place used for shelter or protection;
- Intentionally or recklessly obstruct access to a place used for shelter or protection;
- Use certain methods when capturing, taking or killing;
- Attempt to commit one of the above offences, or
- Possess anything capable of being used to commit an offence.

Fines of up to £5000 per offence and custodial sentences may be imposed for contravention of the above legislation.

4. Habitats

Habitats present in the vicinity of the proposed access works and the ponds are shown in **Appendix A**, with photographs provided in **Appendix C**.

4.1 Proposed Working Area

The proposed working area is dominated by improved grassland and tall ruderal vegetation, providing low to medium quality terrestrial foraging habitat for GCN. However, these habitats are also abundant in the wider area surrounding the proposed works.

4.2 Ponds

The five ponds are shown on the Phase 1 habitat map as Ponds A to D and F (see **Appendix A**). A sixth pond (Pond E) was originally identified from Ordnance Survey maps during an initial desk study, but was later found to be absent on the ground. Detailed HSI scoring is given in **Appendix C**.

Pond A - HSI = 0.82 excellent suitability for GCN

The pond is located at SE 194 040. It is approximately 15 years old (pers. comm. Paul Hennel, site manager 24/11/2010) and is the third pond in a complex of three balancing ponds (including Ponds A-C) taking run-off water from the quarry works. The pond is located approximately 230m to the north east of the proposed access works and is approximately 55 x 20m with marginal vegetation surrounding the entire waters edge, including soft rush (*Juncus effusus*), common bulrush (*Typha latifolia*), willow (*Salix* sp.) scrub and tufted hair-grass (*Deschampsia cespitosa*). Bordering vegetation comprises rough grassland and scrub with isolated coniferous trees.

Pond B - HSI = 0.65 average suitability for GCN

The pond is located at SE 194 041, approximately 230m to the north east of the proposed access works, and is the central pond in a complex of three balancing ponds. The pond is also approximately 15 years old and approximately 30 x 8m in size. Large pipe culverts link this pond to ponds A and C, approximately 15m to the south and 5m to the north respectively. The pond is choked with common bulrush, with exception of a small area of open water to the north end, and dries out during the summer (pers comm. Paul Hennel, site manager 24/11/2010).

Pond C - HSI = 0.58 below average suitability for GCN

The pond is located at SE 194 041, approximately 230m to the north east of the proposed access works, and is the most northerly pond in the balancing pond complex. The pond is also approximately 15 years old and approximately 10 x 30m in size. As for pond B, this pond is choked with common bulrush and dries out over the summer. No open water was identified during this visit. Gorse (*Ulex* sp.) and willow scrub border the pond, and a moorhen (*Gallinula chloropus*) was noted amongst the bulrush.

Pond D - HSI = 0.61 average suitability for GCN

The pond is located approximately 185m to the north east of the proposed access works at SE 193 041. The pond was built in order to hold water from the Burntshaw Brook as it is diverted around the quarry workings (pers comm. Paul Hennel, site manager) and currently receives water from the northern side with an outfall on the south east corner. The pond is approximately 10 x 10m and 150m to the north of the proposed access works. The pond is bordered by tufted hair-grass including isolated soft rush and willow scrub on the east side.

Pond F - HSI = 0.54 below average suitability for GCN

The pond is located at SE 193 042 approximately 225m to the north of the proposed access works within the active quarry area. The water body is the result of 'backing up' of the Burntshaw Brook caused by the culvert which has been installed downstream (taking water into pond D), and has a through flow. The water body is approximately 15m long and 3m wide (the width of the existing brook) with common bulrush growth within the water and bordering willow scrub and soft rush.

4.3 Habitats Present Between the Proposed Working Area and the Ponds

Habitat to the south west of the ponds comprises poor semi-improved grassland and large areas of dense scrub and broad-leaved plantation woodland which provide plentiful, high quality terrestrial foraging and hibernating habitat for GCN (should they be present), all within 100m. A small stream is present to the west of the scrub and woodland, and although this does not create a significant barrier to GCN movement, it may discourage movement further west when the water level and flow rate is high. Habitat beyond the stream towards the proposed working area is dominated by improved grassland which provides only low quality terrestrial habitat for GCN.

5. Proposed Works

The location of the proposed works is indicated in **Appendix A**. Works will take approximately three months and will comprise:

- Removal of vegetation including topsoil within an area approximately 60m x 10m;
- Importation and grading of material to raise the level of the new access track relative to the adjacent land;
- Installation of concrete to form a new access track of approximately 60m in length. Width will be 4 to 4.5m along the majority of the track, but approximately 5m at the junction with the highway; and
- Works will be undertaken using a 360 degree excavator (17 tonne), a wheeled excavator, a dumper (8 tonne) and a roller.

6. Mitigation

6.1 General Working Guidelines

It is essential that all personnel working on the site are aware of the potential presence of GCN and work in a manner which is least likely to endanger GCN and understand what to do in the event of finding a GCN. Therefore all staff and any contractors that work on the site need to understand and comply with the following general points and site procedures:

- All staff will be given a tool box talk prior to starting work to ensure that they are made aware of the potential presence of GCN at the site;
- Site staff and contractors will be made aware that GCN are not confined to the water bodies throughout the year. They may be found sheltering in cracks in concrete paths, under hedgerows, scrap wood, dense grassland, rubble, soil piles, plastic bags etc. (i.e. anything that provides protection from either the sun or frosts depending on the time of year or presence of predators). They may travel approximately 500m from their ponds and therefore could be present within the locations highlighted above;
- Site compounds and storage areas will be located in areas of hard standing or short vegetation (i.e. short grassland) that is less likely to be used by great crested GCN. If anywhere else, the site needs to be agreed with the project ecologist;

- Prior to any site works commencing, the working area must be clearly de-lined from the adjacent habitats (using fencing or sign posts) and the contractors must be fully aware of the site boundary, ensuring that all works are contained within the development footprint. Under no circumstances should the surrounding habitats outside the de-lined area be disturbed or impacted by the works, in order to prevent a contravention of the legislation. All vehicles/machines must be stored within the development footprint or off-site;
- No rubbish/materials will be discarded or dumped within the development site boundary, as GCN may use these materials for temporary shelter. It is imperative that during all site works due care and attention is paid to any materials accidentally left lying around in case GCN are sheltering under or within them. All such materials will be examined for the presence of GCN before they are moved/discarded/destroyed off-site (as detailed below). This also applies to any existing vegetation (particularly around the roots of plants/shrubs) that is removed;
- Prior to any sections of the site being cleared, excavated or any works that will cause disturbance to the ground, the area will be scan-searched immediately prior to the works. This will also be undertaken by the contractors immediately prior to each “shift” of work on an area (e.g. after a lunch break and at the start of each day); and
- All works will take place during daylight hours only.

If at any time GCN are observed within the working area, works will stop immediately, the GCN will be transferred into a cool and dark container and an ecologist notified immediately. If a GCN is spotted anywhere else on site, an ecologist will also be notified. Although these measures are necessary specifically in relation to GCN (as identified below), contractors will treat all newts encountered with similar due care and attention, therefore negating the need for contractors to be able to recognise individual species which will be the responsibility of the project ecologist.

6.2 Site Specific Guidelines

- The proposed construction works will take approximately four months. Although habitat within the proposed works area is unlikely to be used for hibernation, as a precautionary measure, the works (excluding the initial phase of vegetation removal – see below) will be carried out during the GCN active period (which is mid-March to October) to further reduce the risk of harming dormant GCN;
- Tall vegetation growing within the proposed working area will be strimmed to approximately 15cm above ground and the arisings removed outside the working area at least three days prior to the proposed access works commencing to reduce the suitability of the habitat for GCN to negligible, thereby minimising the risk of stray GCN being present. In order to avoid affecting nesting birds, the vegetation will be strimmed prior to the bird nesting season (which is March to August inclusive). The remaining short vegetation and roots will be removed during the GCN active period (which is mid-March to October) to minimise the risk of harming dormant GCN;
- No additional clearance of scrub or ruderal herbage adjacent to the working area will be carried out without the project ecologist's prior approval;

- No additional ground works over and above those agreed with the ecologist in writing and within the time frames detailed in the construction programme should be carried out on site;
- In order for this document to remain valid, the works must be carried out in line with the work programme detailed above and it is therefore imperative that the timetable is adhered to in order to avoid causing a potential contravention of the legislation. If at any stage of construction, the timetable of events cannot be adhered to, the entire construction programme would need to be re-assessed in consultation with an ecologist prior to the works continuing; and
- In the unlikely event any newts are found, the project ecologist will be contacted and they will be relocated to alternative suitable undisturbed terrestrial habitat within 100m of the ponds.

7. Rationale

Consideration has been given to the key potential effects of the works on GCN (should they be present in the ponds) in reference to potential offences that could be committed under the wildlife legislation that applies to GCN (Habitats Regulations and Wildlife and Countryside Act, 1981). A full assessment of the potential effects is given in **Appendix D** which details how the implementation of the above mitigation reduces the potential impacts of the works to negligible.

It is therefore considered unlikely that any offence would occur as a result of the works under the Habitats Regulations or WCA, 1981 after applying the non-licensable mitigation measures detailed above. However, this method statement is based upon the interpretation of GCN legislation by Entec's ecologists. For a definitive interpretation of the legislation and to ensure full protection from the potential offences that may be incurred, independent legal advice should be sought.



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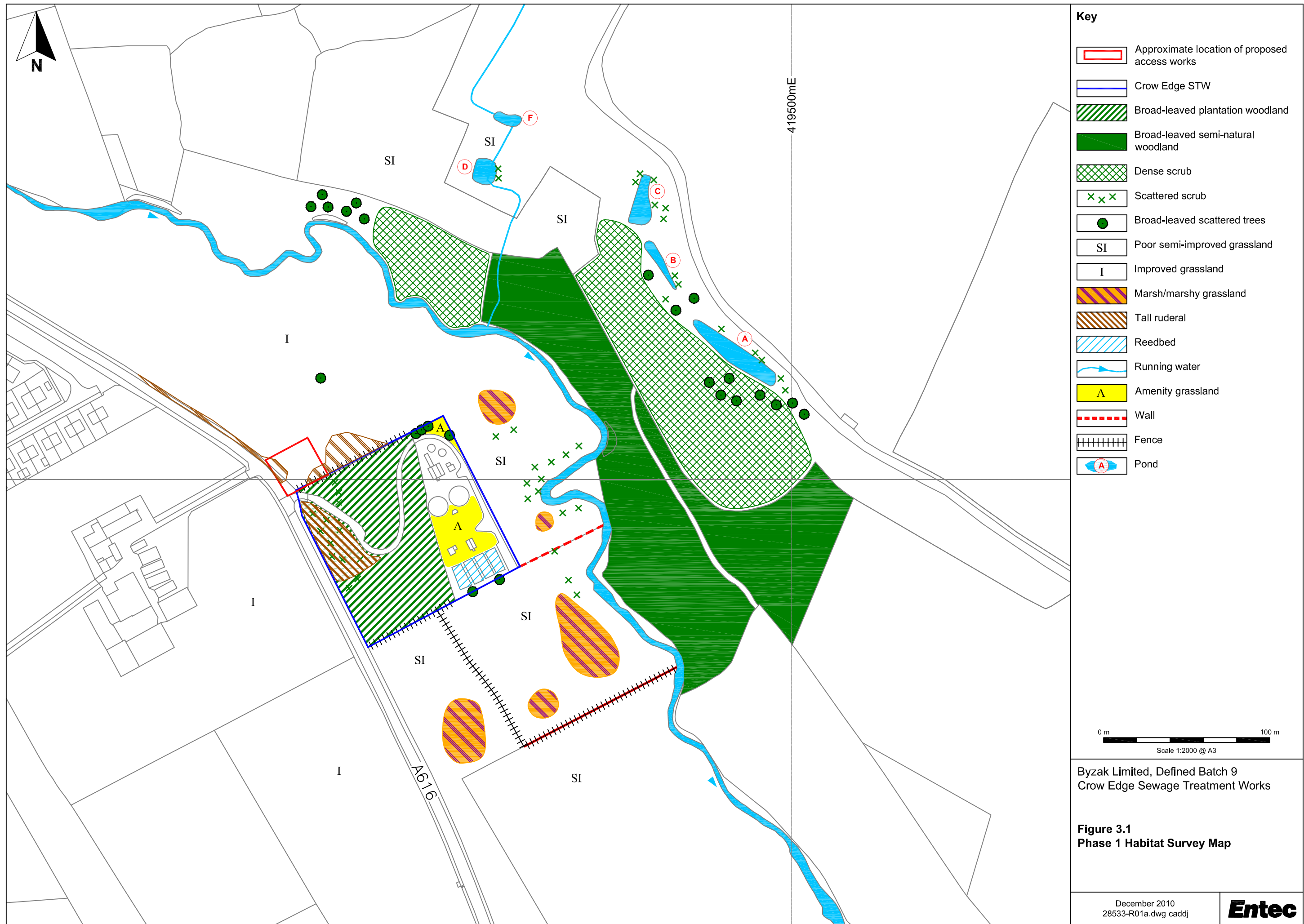
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Appendix A

Phase 1 Habitat Map



Appendix B

Photographs of Ponds and Surrounding Habitats

Pond A



Pond D



Pond B



Pond F



Pond C



Proposed access works - tall ruderal vegetation



**Proposed access works - improved
grassland**



**Semi-improved grassland and woodland
to the west of the ponds**



Appendix C

Results of HSI Assessment

Pond Name	Location	Pond Area	Pond Drying	Water Quality	Shade	Fowl	Fish	Nearby Ponds	Terrestrial Habitat	Macrophytes	HSI	GCN Suitability
Pond A	1	0.93	1	1	1	0.67	0.67	0.82	1	0.4	0.82	Excellent
Pond B	1	0.6	0.1	0.67	1	0.67	0.67	0.82	1	0.9	0.65	Average
Pond C	1	0.7	0.1	0.33	1	0.67	0.67	0.82	0.67	0.8	0.58	Below average
Pond D	1	0.2	0.5	1	1	0.67	0.67	0.82	0.67	0.3	0.61	Average
Pond E	Pond no longer present on the ground.											n/a
Pond F	1	0.05	0.5	0.67	1	0.67	0.67	0.82	0.33	1	0.54	Below average

Appendix D Legislation and Rationale

GCN are assumed to be present in all suitable ponds for the purposes of this assessment.

OFFENCE	LEGISLATION	*ASSESSMENT OF WHETHER OFFENCE WOULD OCCUR
Deliberately capture, injure or kill GCN	Habitats Regulations	Although the presence of GCN is unconfirmed, there are five potentially suitable ponds within 250m of the proposed works. The works will affect an area of terrestrial habitat of potentially low to medium value to GCN in view of the habitats present. However, there is plentiful alternative high quality terrestrial habitat closer to the ponds and an expanse of low quality improved grassland between the ponds and the proposed working area which reduces further the likelihood of GCN travelling to the working area. The habitat affected by the proposed works will be reduced to negligible value by the phased removal of vegetation prior to the works which will further reduce the likelihood of GCN being present. In the unlikely event a stray GCN is present, the other mitigation measures employed will minimise the risk of GCN being affected to negligible. No deliberate capture, killing or injuring will therefore occur.
Disturbing GCN – affect ability to survive, breed, reproduce, rear or nurture young hibernate or migrate	Habitats Regulations	Only small areas of potentially low – medium value GCN terrestrial foraging habitat 185m from ponds will be affected by the works relative to the significant large amount of high value scrub and woodland habitat within 100m of the ponds which is available for the newts' terrestrial foraging and resting phase. Affected habitats will be reduced to negligible value ahead of works. No potential breeding ponds will be affected by the works and migration routes between good terrestrial habitats and the ponds will be unaffected. No works will be carried out during the GCN dormant period therefore no dormant GCN will be affected. Thus, no effect on animals' survival, breeding, reproduction, rearing young migration or hibernation is likely as a result of disturbance and so the likelihood of committing an offence is considered to be negligible.
Deliberately disturbing GCN – significantly affecting local distribution or abundance	Habitats Regulations	Only a small area of low - medium value terrestrial habitat will be affected relative to the abundant high quality habitat much closer to the ponds. The value of affected habitat will be further reduced to negligible ahead of the works by employing the mitigation measures detailed in this Method Statement. Furthermore, the proposed works will not create a permanent barrier to GCN movement, and as such no significant effect on local distribution or abundance is likely and therefore, the possibility of committing an offence is considered to be negligible.
Taking GCN eggs	Habitats Regulations	Not applicable
Damage/destruction of EPS breeding site or resting place	Habitats Regulations – NOTE liability offence (not guilty to be	No potential breeding ponds will be affected by the proposed works. Although terrestrial habitat within the working area is suitable for GCN foraging (low-medium before mitigation), the

OFFENCE	LEGISLATION	*ASSESSMENT OF WHETHER OFFENCE WOULD OCCUR
	prosecuted)	interim low quality habitat and the significant quantity of other high quality habitats within 100m of the ponds, limits the potential for GCN to be present in the working area. Furthermore, the habitat to be affected within the working area (improved grassland and tall ruderal vegetation), while suitable for foraging, is unlikely to be used by resting GCN. Therefore the working area is unlikely to be used as a resting place for the period of the works. In the unlikely event that a stray GCN is found, it will be moved into optimal habitat outside the working area within 100m of the ponds. If two or more animals are found, the works will be stopped, the ecologist contacted and if appropriate, licensing considered.
Possession or control or transport of Annex IV species.	Habitats Regulations	Due to the mitigation employed, GCN are unlikely to be present within the working area and therefore there will be no requirement to possess or transport any GCN. However, in the unlikely event a stray GCN is present it would immediately be removed to local suitable alternative habitat under the supervision of a licensed ecologist.
Certain methods when capturing/taking or killing under licence.	Habitats Regulations	Not applicable
Disturbing GCN – intentionally or recklessly whilst occupying a structure or place used for shelter or protection	WCA	Although terrestrial habitat within the working area has low - medium suitability for foraging GCN, the higher quality habitat within 100m of the ponds, and the mitigation measures employed to reduce the affected habitat value to negligible means that GCN are unlikely to be present and therefore the area will not be used as a resting place for the period of the works. Thus, the risk of disturbing GCN intentionally or recklessly is reduced to negligible.
Obstructing GCN access – used for shelter or protection	WCA	The works will not create a barrier to GCN movement between the ponds and terrestrial habitat as high quality areas of scrub and woodland within 100m of the ponds will be accessible throughout the works. Furthermore, although the the affected habitat is suitable for foraging (prior to mitigation), it is unlikely to be used by GCN for shelter or protection. Thus, obstruction of GCN access will not occur.
Certain methods when capturing/taking or killing.	WCA	If a great crested newt is identified during the works an ecologist would remove the newt in an appropriate manner to a suitable area of shelter.
Attempting to commit one of the offences listed.	WCA/Habitats Regulations	As outlined for each potential offence, all reasonable steps to avoid committing any offence relating to GCN will be taken through the implementation of a method statement. No attempt to offend would therefore be committed.
Possession of anything capable of being used to commit offence	WCA/Habitats Regulations	Not applicable.

*Assessment **Green** – No offence, **Red** – Offence