

## 7.0 ECOLOGY

### Introduction

- 7.1 This Chapter of the Environmental Statement (ES) assesses the potential impacts arising from the construction and operation of the Ryedale Gas Project on flora and fauna species and other ecological interests. The assessment has been undertaken by identifying the existing ecological baseline conditions, and then determining the likely magnitude and significance of impacts resulting from the proposed development upon the current baseline conditions and, where different, likely future trends in those conditions.
- 7.2 The assessment describes the current ecological conditions along the proposed pipeline route and the areas surrounding the Ebberston Wellsite and the proposed Hurrell Lane Gas Processing Facility, the contractor's compound, pipe lay down area and the hot tap and AGI connection compound, to be known collectively as the 'Development Zone'. The Chapter also discusses the impact of the scheme on known ecological interests including statutory and non-statutory sites of nature conservation importance, habitats, flora and fauna present in the area. Recommendations for avoidance, mitigation and compensation measures are provided, and the significance of likely residual impacts of the scheme is assessed.
- 7.3 A detailed description of the proposed development is presented in Chapter 4 of this ES. The assessment evaluates the likely impacts of the scheme on habitats, species and any other ecological features identified following the Institute of Ecological and Environmental Management's (IEEM) 'Guidelines for Ecological Impact Assessment' (IEEM, 2006). The assessment technique involves the hierarchical classification of potential ecological receptors into those of international, national, regional and local ecological value. Areas, habitats, species or other features of ecological value within the site and its surrounds are identified and the main contributing factors to their value are described.
- 7.4 This Chapter has been prepared by URS Corporation Ltd on behalf of Moorland Energy.

### Planning Policy Context

- 7.5 The assessment takes into account current relevant wildlife legislation and national guidance and also non-statutory strategies such as National Planning Policy Statements,

Local Planning Policies and National and Local Biodiversity Action Plans (UKBAP and LBAP respectively), which give context to nature conservation aims on both a local and national level.

### **National Legislation**

7.6 The main current wildlife legislation considered likely to apply to the scheme includes:

- The Wildlife and Countryside Act (WCA), 1981 (as amended);
- The Countryside and Rights of Way (CRoW) Act, 2000;
- The Natural Environment and Rural Communities (NERC) Act 2006;
- The Conservation (Natural Habitats &c) Regulations, 1994 (as amended); and
- The Protection of Badgers Act 1992.

#### *The Wildlife and Countryside Act 1981 (as amended)*

7.7 The WCA 1981 is the primary legislation relating to wildlife protection in the UK, and is the primary means by which the following are implemented:

- The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and
- The Council Directive 79/409/EEC on the Conservation of Wild Birds (the 'Bird Directive').

7.8 The main relevant provisions of the Act are: allowance for the protection of the most important habitats by designating SSSI's, protection to all nesting wild birds and specific species under Schedule 1, and protection to various other species of flora and fauna, including other animals (Schedule 5) and plants (Schedule 8).

#### *The Countryside and Rights of Way (CRoW) Act, 2000*

7.9 Part III of this Act deals specifically with wildlife protection and nature conservation in England and Wales. The CRoW Act strengthens the safeguards afforded to SSSI's and adds to the protection of wild animals designated under the WCA 1981 by making it an offence to "recklessly disturb" wild animals designated under Schedule 5 of the WCA.

*Conservation (Natural Habitats &c) Regulations, 1994 (as amended)*

- 7.10 These regulations transpose the EU Directive on Natural Habitats, and Wild Fauna and Flora 9/43/EEC) into domestic legislation. They provide an increased level of protection to species that are considered important at a European scale. The Regulations identify European Protected Species (EPS) and various habitats considered to be of conservation of importance within the European Union, and allow for important sites for these habitats and/or species to be designated as Special Areas of Conservation (SAC's). Proposed development that may have a significant effect on a SAC or Special Protection Area (SPA) should be assessed in relation to the site's 'conservation objectives', i.e. the reasons for which the site is designated.
- 7.11 The 2007 Amendment Regulations addressed a number of gaps and inconsistencies in the transposition of the EU Directive and provide a greater legal certainty in a number of areas. They simplify the species protection regime to better reflect the Habitats Directive and provide a clear legal basis for surveillance and monitoring of European Protected Species. The Regulations also amend the WCA, updating Schedules 5 and 8 to consider provisions made by the Habitat Regulations 1994 in relation to the protection of EPS. They also offer further clarification to Part 4 of Section 9 considering "reckless" offences on wild animals, which was previously amended by the CRoW Act 2000.
- 7.12 The 2009 Regulations amend, in relation to England and Wales, the Conservation (Natural Habitats, &c.) Regulations 1994, which make provision implementing Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna. Regulations 5 and 6 amend regulations 37A and 37B of the 1994 Regulations to specify in greater detail the arrangements to be made for surveillance of the conservation status of natural habitat types of Community interest and species of Community interest, and to clarify the duty to take action in the light of that surveillance. Similarly, Regulations 9 and 10 amend Regulations 41A and 41B of the 1994 Regulations to specify in greater detail the arrangements to be made for monitoring the incidental capture and killing of animals of the species listed in Annex IV (a) to the Habitats Directive, and to clarify the duty to take conservation measures in the light of that monitoring. Regulation 7 amends regulation 39 of the 1994 Regulations by:-
- (a) amending the terms of the offence in Regulation 39(1) (b) of deliberately disturbing a European protected species of animal;
  - (b) making provision for the publication of guidance as to the application of the offences in Regulation 39(1) (b) and (d) in relation to particular species of

- animals or particular activities, and requiring the court to take account of any such guidance in proceedings for an offence under those provisions; and
- (c) revoking Regulation 39(14) to (16), which contained special provision as to the interpretation of the offence in regulation 39(1) (b) in relation to sea fishing.

- 7.13 Regulation 8 amends regulation 40 of the 1994 Regulations, which contains defences to the offences relating to European protected species in Regulation 39, by providing that those defences do not apply if the prosecution shows that there was a satisfactory alternative to the defendant's action, or that the action was detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

*Natural Environment and Rural Communities (NERC) Act, 2006*

- 7.14 Section 41 of the NERC Act requires the listing of habitats and species that are considered to be of principle importance for the conservation of biodiversity in England, including habitats and species in England that have been identified as priorities within the UK Biodiversity Action Plan (UKBAP).
- 7.15 The NERC Act requires that the section 41 list be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions.

*Protection of Badgers Act 1992*

- 7.16 The Protection of Badgers Act 1992 was put in place primarily to protect the welfare of badgers in the UK and protect them from persecution. The Act makes it an offence to:-
- Intentionally kill, take, possess or cruelly ill-treat a badger, or attempt to do so;
  - Interfere with a sett by damaging or destroying it;
  - Obstruct access to, or any entrance of, a badger sett; or
  - Disturb a badger when it is occupying a sett.

**National Planning Policies**

- 7.17 The most up to date national policy guidance on nature conservation and planning is presented in 'Planning Policy Statement 9 (PPS9): Nature Conservation' (2005). This

identifies and specifies the obligations that the Local Authorities and the UK Government have to statutory designated sites and protected species under both UK and international legislation.

7.18 PPS9 provides a list of key principles to which local planning authorities and other decision makers should adhere in order to ensure conservation of biodiversity.

7.19 Key Principle (ii) within the policy statement requires that:

**“Planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests. In taking decisions, local planning authorities should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; and to biodiversity and geological interests within the wider environment”.**

7.20 Key Principle (vi) states that:

**“The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests that cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.”**

## **Development Plan Policies**

- 7.21 Policies relating to nature conservation issues are included within Chapter 15 of the Ryedale Local Plan (2002).
- 7.22 At the northern end of the Development Zone, the pipeline route and the Ebberston Wellsite fall just within the boundary of the North York Moors National Park. The Core Strategy and Development Policies DPD was adopted in November 2008 and contains a Core Policy (C) and a Development Policy (Policy 1) that relate to conservation and enhancement of the Natural Environment, Biodiversity and Geodiversity.
- 7.23 Whilst the scheme does not directly fall within Scarborough District, the District boundary lies immediately to the south east of the Ebberston Wellsite within the potential zone of influence of development activities. The Scarborough Local Plan has policies that should therefore be considered to the scheme. E.7 (Local Nature Conservation Sites),

## **UK and Local Biodiversity Action Plans**

- 7.24 As a signatory to the Convention on Biological Diversity (Biodiversity) at the Rio Earth Summit in 1992, the UK Government committed itself to maintain and increase the diversity of wildlife in the UK. The current Biodiversity Action Plan (Biodiversity Reporting and Information Group, 2007) identifies key habitats and rare and vulnerable species for which priority action should be taken. Targets have been set for these priority habitats and species. Species and habitats of concern are those that require action but are considered a lower priority.
- 7.25 Implementation of the plans is to be achieved at the local level through Local Biodiversity Action Plans (LBAP). The route of the proposed pipeline falls within two Local Biodiversity Action Plan areas (Ryedale and North York Moors, and adjacent to a third (Scarborough). The latest plan for Ryedale covers the years 2007-2012, for the National Park 2008 - 2012 and the latest plan produced for Scarborough is from 2005. The habitats listed in the LBAP's considered most relevant to this application are:
- Woodland;
  - ancient/species rich hedgerows;
  - farmland; and
  - arable field margins.

- 7.26 Species currently listed in the LBAP's that have potential to be relevant to the application include bats, farmland birds and reptiles.

### **Assessment Methodology and Significance Criteria**

- 7.27 The assessment identifies sites, habitats, species and other ecological features that are of international, national, regional or local ecological value. Key areas and/or species of ecological value within the permitted area are identified and the main factors contributing to their current ecological value are described. The assessment considers the main items of current relevant wildlife legislation and policy as well as non-statutory strategies such as national and local Biodiversity Action Plans (UKBAP and LBAP respectively), which provide both national and local context to nature conservation objectives.

- 7.28 The methodology for assessment of the nature conservation value of ecological features affected by development (ecological receptors) is adapted from the Institute of Ecology and Environmental Management (IEEM) guidelines for ecological impact assessment (IEEM, 2006). These guidelines recommend assignment of value (or potential value) to ecological receptors in accordance with the following scale:

- International;
- UK;
- National (i.e. England/Northern Ireland/Scotland/Wales);
- Regional;
- County (or Metropolitan - e.g. in London);
- District (or Unitary Authority, City, or Borough);
- Local or Parish; and/or
- within immediate zone of influence only.

- 7.29 When describing impacts on ecosystem structure and function, reference is made to the following aspects where appropriate:

- confidence in predictions (levels of uncertainty);
- extent;
- magnitude;
- duration;
- reversibility;
- timing and frequency; and

- cumulative effects.

7.30 Understanding the nature of the impact enables determination of the effect on ecological integrity of the ecological receptor. This in turn is assessed against the importance of the receptor to determine the significance of the effect on nature conservation interests as being (i) not significant, or (ii) a significant positive or adverse impact.

### **Scoping**

- 7.31 The Scoping Report for ecology included (i) an outline of the field surveys to be undertaken including: Extended Phase 1 Habitat survey, hedgerows survey, badger survey, otter and water vole survey and other species surveys, (ii) the scope of a desk study for known information and (iii) reference to relevant guidance including the IEEM Guidelines for Ecological Impact Assessment.
- 7.32 Scoping responses from North Yorkshire County Council and Natural England confirm agreement with the proposed scope of work. Natural England also recommended that the potential for dormice in hedgerows be considered within the assessment.

### **Baseline Conditions**

#### *Desk Study Methodology*

- 7.33 Baseline data has been gathered by a desk-based study exercise and through field surveys undertaken by White Young Green Environmental Ltd (WYGE) in 2007 for the Ebberston Wellsite and by URS Corporation Ltd in 2009 for the proposed route of the pipeline, the proposed Hurrell Lane Gas Processing Facility, contractors compound, pipe lay down area and hot tap connection compound and an updated study for the Ebberston Wellsite.
- 7.34 The desk-based study work has involved written consultation with statutory and non-statutory consultees including North and East Yorkshire Ecological Data Centre (NEYEDC) to obtain records for protected and/or notable species as defined by the Wildlife and Countryside Act 1981 (as amended), the NERC Act 2006, The Countryside and Rights of Way Act (2000), The Conservation (Natural Habitats &c) Regulations, 1994 (as amended) and the Protection of Badgers Act 1992). North York Moors National Park Authority (NYMNP) was also contacted for records of protected/notable species. The online Multi Agency Geographical Information for the Countryside (MAGIC)



website was used to identify statutorily designated sites of nature conservation importance and the National Biodiversity Network (NBN) for any further records for protected/notable species. The Forestry Commission was consulted for details of their plantation woodland, which forms part of the northern end of the proposed route. Information within the WYGE 2007 report into the Ebberston Moor Wellsite has also been used where relevant. The North Yorkshire Bat Group and the Yorkshire Mammal group were also consulted for biological records.

- 7.35 Details of the consultees and information requested from them are summarised in **Table 7.1** below. Copies of desk study and consultation responses are provided in **Appendix 7.1** along with a plan showing the area of search for which information was requested regarding non-statutory sites and protected species.

**Table 7.1: Consultees and Information Requested**

Consultee	Information Sought
Multi Agency Geographic Information for the Countryside (website)	i) Statutory designated sites of nature conservation importance.
National Biodiversity Network Gateway (website)	i) Records of protected/notable species.
North and East Yorkshire Ecological Data Centre (NEYEDC)	i) Records of protected/notable species ii) Non-statutory designated sites of nature conservation importance
North York Moors National Park Authority	i) Protected/notable species
Yorkshire Mammal Group	i) Protected/notable species, particularly hazel dormouse
North Yorkshire Bat Group	i) Information on bat boxes installed on trees near the proposed Hurrell Lane Gas Facility
Forestry Commission	i) Information on woodland near to Ebberston Wellsite

### Field Survey Methodologies

#### *Vegetation and Habitats*

- 7.36 A Phase 1 Vegetation and Habitat Survey based on published methodology (Joint Nature Conservation Committee, 2007) was undertaken of the Ebberston Wellsite area on the

15<sup>th</sup> June and 3<sup>rd</sup> July 2007 by WYGE and confirmed by URS Ltd on the 17<sup>th</sup> November 2009.

- 7.37 A Phase 1 Vegetation and Habitat Survey of the proposed route of the pipeline and the proposed Hurrell Lane Gas Processing Facility was undertaken by URS Ltd on the 25<sup>th</sup> and 26<sup>th</sup> September 2009, with a survey of areas where no access was available on the original dates undertaken on the 17<sup>th</sup> November 2009. Pipeline re-routes and temporary working areas were surveyed during February and March 2010.
- 7.38 Although the months during which the survey work was undertaken are generally considered to be outside the optimal survey season for some vegetation types, the habitats surveyed were predominantly intensively managed arable and pasture habitats, and as such, the survey timing is not considered a significant limitation to the survey work; it is unlikely that vegetation or habitats of significant conservation value could not be identified by the surveys.
- 7.39 Field surveys typically extended to a distance of 50-100m from the Development Zone, more detailed data being gathered from areas within 50m. The survey area therefore included land up to 100m around the Ebberston Wellsite and proposed Hurrell Lane Gas Processing Facility and land up to 100m either side of the proposed pipeline route (depending on availability of access to adjacent land). Beyond the detailed survey area, the survey generally recorded habitat types but without collecting detailed information on botanical composition, unless particularly significant habitats were encountered in which case a more detailed survey was undertaken.
- 7.40 The results obtained within these survey areas have been reviewed to determine if the survey area needs to be extended. No habitats of significant value that could be adversely affected by the proposals beyond 100m from the Development Zone were identified during the surveys.

#### *Hedgerows*

- 7.41 All hedgerows crossed by the proposed pipeline route or otherwise potentially affected by the development proposals were surveyed to determine whether they might qualify as 'important' under The Hedgerows Regulations 1997. The surveys only considered the wildlife and landscape criteria within the Regulations (below) which state that a hedgerow may qualify as 'important' if it:-

- Contains certain categories of species of birds, animals or plants listed in the Wildlife and Countryside Act 1981 (as amended) or any relevant published Red Data Books.
- Includes:
  - (a) at least 7 woody species, on average, in a 30m length;
  - (b) at least 6 woody species, on average, in a 30m length and has at least 3 associated features;
  - (c) at least 6 woody species, on average, in a 30m length, including a black-poplar tree, or large-leaved lime, or small-leaved lime, or wild service tree; or
  - (d) at least 5 woody species, on average, in a 30m length and has at least 4 associated features.

(NOTE: The number of woody species is reduced by one in several northern counties including North Yorkshire).

- Runs alongside a bridleway, footpath, road used as a public path, or a byway open to all traffic and includes at least 4 woody species, on average, in a 30m length and has at least 2 of the associated features listed below. The associated features referred to above are:
  - (i) a bank or wall supporting the hedgerow;
  - (ii) less than 10% gaps;
  - (iii) on average, at least one tree per 50 metres;
  - (iv) at least 3 species from a list of 57 woodland plants;
  - (v) a ditch along at least half the length of the hedgerow;
  - (vi) connections with other hedgerows (1 point), ponds or woodland (2 points) that total 4 or more points; and
  - (vii) a parallel hedge within 15 metres.

#### *Protected Fauna Species*

7.42 Specific breeding or wintering surveys for birds were not undertaken, though records were kept of bird species observed during other survey work and appraisal of habitat suitability for wintering and breeding birds was undertaken. The relatively small scale and nature of the development, the temporary nature of most of the effects, and the habitats present within and adjacent to the development boundary meant that such detailed surveys were not necessary to assess likely significant impacts on birds.

- 7.43 WYGE in 2007 and URS Ltd in 2009 undertook field surveys and/or habitat potential appraisals for badger, water vole, otter, hazel dormouse, bats, birds, reptiles, amphibians (including great crested newt) and invertebrates. The methods used and dates of completed fauna surveys are given in **Table 7.2** below.
- 7.44 The potential for the proposed development area and immediately surrounds to support other species or assemblages of flora and fauna was assessed in accordance with published guidance for baseline ecological assessment (Institute for Environmental Assessment, 1995).

**Table 7.2: Fauna Survey Methods and Programme**

<b>SURVEY</b>	<b>METHOD</b>	<b>AREA</b>	<b>DATE</b>
<b>Badger</b>	Search for badger setts, paths, prints, latrines & evidence of feeding. (Harris, Creswell & Jefferies, 1989)	All land within proposed Development Zone and up to 50m either side.	15/06/07 03/07/07 28/09/09 29/09/09 17/11/09 28/01/10 11/03/10
<b>Otter</b>	Search in areas of suitable aquatic habitat for signs of otter	All land within proposed Development Zone and up to 100m either side.	17/11/09 28/01/10 11/03/10
<b>Water Vole</b>	Search in areas of suitable aquatic habitat for signs of water vole (Strachan and Moorhouse, 2006)	All land within proposed Development Zone and up to 50m either side.	17/11/09 28/01/10 11/03/10
<b>Bat Roosts</b>	Visual search for potential roost sites in buildings, other structures and trees. (Mitchell Jones & McLeish, 1999) (Bat Conservation Trust, 2007)	Any existing buildings, structures and trees considered likely to be disturbed or lost as a result of the proposed scheme.	15/06/07 03/07/07 28/09/09 29/09/09 17/11/09 11/03/10
<b>Bird habitat Appraisal</b>	Assessment of potential habitat value for wintering and breeding	All land within the Development Zone and up to 50m either side.	28/09/09 29/09/09

SURVEY	METHOD	AREA	DATE
	bird populations		
<b>Reptile Habitat Appraisal</b>	Appraisal of habitats to support reptile species (Gent and Gibson, 2003)	All land within the Development Zone and up to 50m either side.	28/09/09 29/09/09
<b>Amphibian Habitat Appraisal</b>	Assessment of aquatic and terrestrial habitat suitability for amphibians (English Nature, 2001)	All land within the Development Zone and up to 500m either side.	28/09/09 29/09/09 11/03/10
<b>Invertebrate Habitat Appraisal</b>	Assessment of potential habitat value for invertebrates (IEA, 1995)	All land within the Development Zone and up to 50m either side.	28/09/09 29/09/09

7.45 There were no significant limitations to the surveys. Some areas of the route were inaccessible due to landowner consent issues on the first two field visits of 2009, but these areas were accessed during the field survey carried out in November 2009 and January - March 2010. It is considered unlikely that any areas of ecological value were missed during the surveys.

### Desk Study Results

#### *Statutory Designated Sites*

7.46 Six statutory designated sites are located within approximately 1km of the Development Zone (see Appendix 7.1):

- ***The North York Moors National Park***: This site is designated primarily due to its landscape and amenity value, the mosaic of habitats present within it and its Jurassic geology. In the northern section, the proposed pipeline corridor is situated just within the boundary of the National Park, as is the previously constructed Eberston Well site.
- ***Ellerburn Bank SSSI***: This site, designated due to its species-rich calcareous grassland flora over Oolitic limestone, is situated approximately 600m to the north of the proposed pipeline corridor in the 'central section' of the Development Zone at SE 916 848.
- ***Nabgate SSSI***: Designated due to its species rich calcareous grassland in an otherwise extensively forested area, this site is situated approximately 600m to

the north of the proposed pipeline corridor in the 'central section' of the scheme at SE 867 847.

- ***Ellers Wood and Sand Dale SAC and SSSI:*** The SAC (approximately 4ha) is designated because of the presence of a species - Geyer's Whorl snail (*Vertigo geyer*) - listed on Annex II of the Habitats Regs 1994 (as amended). Also present, though not a primary reason for designation, is an Annex 1 habitat type - Petrifying springs with tufa formation. The SSSI (approximately 8.9ha), part of which forms the SAC is designated due to the presence of a series of springs in coppiced alder woodland and fen habitat that support a species rich floral assemblage. Both the SAC and SSSI are at their closest approximately 600m to the west of the proposed pipeline corridor in central section of the Development Zone at SE 855 848.
- ***Troutdale and Rosekirk Dale Fens SSSI:*** Designated due to its nationally rare spring and flush fen habitats, this site is situated approximately 500m to the north of the proposed pipeline corridor and Ebberston Wellsite in the northernmost section of the Development Zone at SE859 848.

#### *Non-Statutory Designated Sites*

7.47 Five sites of Importance for Nature Conservation (SINC's) were identified from the search area, with three of these sites within 1km of the boundary of the Development Zone. These are sites designated at the County or administrative area level. There are also two Yorkshire Wildlife Trust Nature Reserves in the area of search, one of which is within 1km of the Development Zone. (Appendix 7.1). The sites within 1km are described below:

- ***Wilton Heights Quarry SINC:*** This site is a disused quarry with exposures of limestone and sandstone shale. It is considered to be important due to the flora species and invertebrates found there. It is situated approximately 500m to the north of the Central Section of the Development Zone at SE 860 844.
- ***Ellerburn Bank SINC:*** This site is coincident with Ellerburn Bank SSSI, details of which are given above.
- ***Cockmoor Hall SINC:*** This site is a newly ratified SINC falling under Scarborough District. No formal information on its designation has been provided but it is located approximately 800m to the east of the Ebberston Wellsite at SE 913 866.
- ***Ellerburn Bank Nature Reserve:*** This site is calcareous grassland and wood on free draining shallow soils on the Lower limestone.

*Protected/Notable Flora and Fauna and Notable Habitats*

- 7.48 **Badger:** Details of the records received are provided in the Confidential Badger Survey **Appendix 7.2** submitted with this ES.
- 7.49 **Bats:** Records exist for a number of bat species within the search area, including common and soprano pipistrelle bats (*Pipistrellus pipistrellus* and *P. pygmaeus*), whiskered bat (*Myotis mystacinus*), noctule bat (*Nyctalus noctua*), Brandt's bat (*Myotis brandtii*), Daubenton's bat (*Myotis daubentonii*) and brown log-eared bat (*Plecotus auritus*). Most records are for pipistrelle bats with records for the other species being confined generally to SE8484 and SE8584 at two specific locations, neither of which is within 500m of the proposed pipeline corridor. There is a single record for pipistrelle bats within SE8583 through which the proposed pipeline corridor passes but it dates back to 1985.
- 7.50 **Other Mammals:** There are no records for hazel dormouse within the area of search. Consultation with the Yorkshire Mammal Group has confirmed that the nearest known record is from a re-introduction site to the north-west of Helmsley, more than 20km from the Development Zone. There are otter records at Pickering and in Dalby Forest and also on Thornton Beck, more than 1km to the west of the Development Zone. There are water vole records at Pickering and to the south of Thornton-le-dale around Thornton Beck more than 1km to the west of the Development Zone, and also at Ebberston Beck more than 1km to the east of the Development Zone. There are a number of records for European hedgehog (*Erinaceus europaeus*) from within the data search area, with records being provided from within Pickering, Thornton Dale, Great Habdon, Wilton, Ebberston and Snainton. The nearest record is from 200m west of the central section of the proposed pipeline corridor.
- 7.51 There are also records of brown hare (*Lepus europaeus*) from within the data search area at SE 911 862; SE88 and SE78 and water vole from SE 8586 but none of these records can be determined with any accuracy to be close to the proposed pipeline corridor or installations.
- 7.52 **Breeding birds:** There are a large number of records for common passerine species within the search area. Notable species records from the data search include corncrake (*Crex crex*) SE 78; cuckoo (*Cuculus canorus*) SE 78; hen harrier (*Circus cyaneus*) SE 833 850; merlin (*Falco columbaris*) SE 876 822; nightjar (*Caprimulgus europaeus*) SE 8585, 859 857; redwing (*Turdus iliacus*) SE 867 853; yellowhammer (*Emberiza citrinella*) SE 858 849, 916 868 and 916 878; yellow wagtail (*Motacilla flava*) SE 883 835 and

woodcock (*Scolopax rusticola*) SE 8886, 8685, 8686, 883 843. Only the record for woodcock is within one of the same 1km squares occupied by the Development Zone.

- 7.53 **Reptiles:** There are a number of results from within the search area for slowworm (*Anguis fragilis*) SE 8484; SE 8585; SE 8584; SE 8887 SE 8586; common lizard (*Zootoca vivipara*) SE 8483; SE 8585; SE 8485; SE 8484; SE 8587; SE 8687; SE 8887; SE 8784; SE 8987 and adder (*Vipera berus*) SE 8584; SE 8585; SE8484; SE 8887; SE 8888; SE 9087; SE 8988; SE 9186; SE 8587. The majority of these records are from within Dalby Forest, Ellerburn Bank SSSI and Ellers Pond, which are to the north west of the Development Zone. There are records however for all three species within SE 8887, common lizard within SE 8987 and adder from SE 9087. SE 8887 includes a small part of the Dalby Forest and SE 8987 and SE 9087 includes Ellers Wood and Sand Dale SSSI and SAC.
- 7.54 **Amphibians:** There are records of great crested newt from within the search area but none from within 1km of the Development Zone.
- 7.55 **Invertebrates:** There are records provided by NEYEDC for Geyer's whorl snail (*Vertigo geyeri*). No site name is given for this record, but the grid reference places the sighting within the Ellers Wood and Sand Dale SSSI and SAC where this species is known to be found, and for which the SAC is designated. This species is mostly recorded on permanently wet calcareous flushes, a habitat type that is not present within or immediately adjacent to the Development Zone.
- 7.56 **Other Habitats:** Information within the WYGE report in 2007 notes the presence of a number of grasslands of nature conservation value within 2km of the Ebberston Moor Well site. One of these, Givendale Dike, is noted as being located approximately 0.5km west of the well site. No further details are provided in the WYGE report or the appendix at the back of the report that list information provided by consultees.

## Field Survey Results

### *Phase 1 Habitat Survey Results*

- 7.57 The habitats recorded within the Development Zone include arable land; areas of broad-leaved plantation woodland; semi-natural broadleaved woodland; dense and scattered scrub; improved grassland; scattered tall ruderal vegetation; hedgerows and plantation conifer woodland (**Figures 7.1a - 7.1e**).



- 7.58 Within the wider survey corridor, the habitats are generally the same as those listed above, with extensive areas of conifer plantation dominating the wider area in the north and large, open arable fields in the central and southern areas.
- 7.59 In the following sections, the habitats within and immediately adjacent to the Development Zone are described first, followed by the other habitats within the wider survey area. Plant species names are taken from Stace (1997).

*Habitats within the Development Zone*

- 7.60 **Arable land:** The majority of the proposed pipeline corridor and the area of land comprising the proposed Hurrell Lane Gas Processing Facility, contractors compound, hot tap compound and pipe lay down area are within open, cultivated, arable land. The Ebberston Well site already exists and is fenced as part of the previous consent for drilling investigations. The area inside the fence has been stripped and soil bunds formed. The large arable fields throughout the survey area are intensively farmed, bordered by species-poor, well-managed hedgerows and/or fence lines. These fields are typically cultivated to their edges with few areas of marginal habitat suitable to support significant floral or faunal species or communities and therefore were not subject to detailed botanical survey. The flora within the field margins, where present, is fairly uniform throughout the Development Zone and dominated by common arable 'weeds', grasses and ruderal species, typically including false oat-grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), perennial ryegrass (*Lolium perenne*) and stinging nettle (*Urtica dioica*). Other species found included Timothy grass (*Phleum pratense*), red fescue (*Festuca rubra*), creeping buttercup (*Ranunculus repens*), creeping thistle (*Cirsium arvensis*), bramble (*Rubus fruticosus* agg.), broad-leaved dock (*Rumex obtusifolius*), dandelion (*Taraxacum officinale* agg.) and red clover (*Trifolium pratense*). Field drains are present on some field boundaries to the south of the A170 and around proposed the Hurrell Lane facility and contractors compound areas including the named Eastfields Drain. These are small, well-managed features that were largely dry in September & November 2009 but with shallow (c. 0.2m) southward flows recorded in March 2010. Some of the drains were unvegetated having been recently cleaned out, but species included occasional water forget-me-not (*Myosotis scorpioides*) and fool's water-cress (*Apium nodiflorum*).
- 7.61 **Improved Grassland:** There are fields of improved grassland to the west of the proposed Hurrell Lane Gas Facility, at the southern end of the proposed pipeline corridor and towards the northern section of the proposed pipeline route, south of Warren Hill Farm and Givendale Head Farm. These areas are used for livestock grazing and

generally have a very short sward. Species noted in these areas during survey include cock's-foot, perennial rye-grass, fescue species, creeping buttercup, dandelion and red clover. It is possible that some species were under-recorded because of the time of year and the grassland being hard grazed, but due to the level of agricultural improvement it is considered very unlikely that there are any protected or notable flora species are present and assessment of the ecological value of the improved grassland is considered to be robust.

- 7.62 **Semi-Natural Broadleaved Woodland:** The woodland along part of the railway embankment that forms the northern boundary of the proposed Hurrell Lane Gas Facility appears to have developed naturally and comprises ash, oak and sycamore with hawthorn (TN1, Figure 7.1a). From Hurrell Lane for approximately 400m eastwards, the embankment is more open and the trees smaller (recently planted) and sparse.
- 7.63 **Plantation Woodland:** At the western end of the disused railway embankment that forms the northern boundary to the proposed Hurrell Lane Gas Facility, there has been some broadleaf tree planting, which is still very young (<5 years). Much of the proposed pipeline corridor passes through/close to two areas of broadleaved plantation woodland and a large area of plantation conifer woodland. At the northern end of the route through the large plantation, there is a 10m - 15m wide fringe of dry heathland along the north side of the track that runs west of Givendale Dike (TN2, Figure 7.1d). This fringe also has scattered self-sown silver birch. The heath is dominated by mature common heather (*Calluna vulgaris*) and bilberry (*Vaccinium myrtillus*).
- 7.64 Some trees appear to also have been planted along parts of Givendale Dike, an old earthwork to the west of the Ebberston Well site. Trees are largely hawthorn, blackthorn and elder (*Sambucus nigra*) with scattered alder and crab apple (*Malus* sp.). There is a dense understory dominated by bramble, burdock (*Arctium lappa*), ivy (*Hedera helix*) and cleavers (*Galium aparine*).
- 7.65 A section of the proposed pipeline corridor to the east and north of Warren House Farm passes through/adjacent to areas of mature conifer and mixed plantation woodland owned by the Forestry Commission. Where the proposed pipeline corridor crosses the track to Givendale Head Farm to join the Ebberston Well site it passes through an arable field bounded to the north by plantation woodland comprising larch (*Larix* sp.), Scots pine (*Pinus sylvestris*), Sitka spruce (*Picea sitchensis*), Douglas fir (*Pseudotsuga menziesii*), Japanese larch (*Larix kaempferi*), Corsican pine (*Pinus nigra*), and Norway spruce (*Picea abies*). Immediately to the south is more plantation woodland but this is much younger and mixed broadleaf and conifer.

- 7.66 **Hedgerows:** Data collected for hedgerows is presented in **Appendix 7.3**. The hedgerows recorded are typically managed, gappy, and dominated by hawthorn, blackthorn and elder with occasional ash, rose (*Rosa* sp.) and field maple (*Acer campestre*). All have a very limited ground flora due to the intensive arable farming. Where present, the ground flora is typically dominated by species such as stinging nettle, bramble and broad-leaved dock and many of the arable 'weed' species listed above under 'Arable'. Within the survey corridor, only two hedgerows (H35 and H40 Figure 7.1) contained the number of woody species/30m and associated features likely to qualify it as "important" under the wildlife and landscape criteria of The Hedgerow Regulations 1997.
- 7.67 **Tall Ruderal Vegetation:** The proposed pipeline corridor passes through two strips of rough grass/ruderal vegetation along the margins of arable fields in the central section to the north of the A170. These are relatively small areas (<5m wide and approximately 30m in length) and contain species including stinging nettle, broad-leaved dock, creeping thistle and bramble with occasional cleavers, rosebay willow herb (*Chamaerion angustifolium*), and arable weeds. There is a larger area currently dominated by tall ruderal vegetation through which the pipeline passes north of Warren House Farm, which appears to be an area of re-planting on previously arable land.
- 7.68 **Hard Standing & Bare Ground:** There are a number of forestry tracks followed by the pipeline route in the northern sections of the Development Zone and the pipeline also crosses the access road to Givendale Head Farm, to the west of the Ebberston Well-site.

#### *Habitats outside the Development Zone*

- 7.69 **Figures 7.1a – 7.1e** also show the habitats beyond the immediate Development Zone. These areas are included in this assessment to (i) provide the ecological context with which the value of habitats within the operational development areas can be assessed and (ii) to enable identification of any potential sensitive receptors in the wider area that could be subject to indirect effects. The habitats outside the Development Zone are almost invariably continuation of those within the Development Zone; being dominated by intensively cultivated arable land with boundaries of species-poor hedgerow and small pockets of woodland and scrub. Plantation woodland in the wider area includes large areas of broad-leaved and conifer woodland to the north, both within and bordering the North York Moors National Park.

## Protected and Notable Fauna Species

### *Badger Survey Results*

- 7.70 The results of the badger survey are described in Confidential Badger Survey reported in Appendix 7.2.

### *Otter and Water Vole*

- 7.71 No suitable habitat for otter or water vole has been recorded within or adjacent to the Development Zone. Areas of standing or flowing water are restricted to small, well-managed agricultural drainage ditches, which have low water depths, flows and permanence. No signs of otter or water vole were recorded during the survey work

### *Dormouse Habitat Appraisal*

- 7.72 Natural England have requested that the assessment consider the potential for hazel dormouse, as there have been a number of successful re-introductions in North Yorkshire over the last 10 years. The Yorkshire Mammal Group confirmed that closest re-introduction site is at Helmsley, which is around 20km to the west. There are no local records for dormouse within at least 2km of the Development Zone and the habitats, including the hedgerows and plantation woodland within and adjacent to the Development Zone are generally of low quality or unsuitable for dormouse and are not connected to sites of high potential value for this species. It is considered very unlikely that dormouse is present within or adjacent to the Development Zone and no further assessment is considered necessary for this species.

### *Bat Roost and Foraging/Commuting Appraisal Results*

- 7.73 There are no mature trees considered likely to have the potential to support roosting bats within the Development Zone, though some mature ash trees outside the Development Zone within hedgerows just south of the A170 have some cracks and crevices and ivy covering, offering low to moderate potential to support roosting bats. There is a single farm building just south of the proposed Hurrell Lane Gas Processing Facility and this has potential to support roosting bats (TN3, Figure 7.1a). There is also a bridge where the pipeline passes under the disused railway embankment just north of the Hurrell Lane Gas Processing Facility that has potential to support roosting bats (TN4 Figure 7.1a). A number of bat boxes have been erected in four trees alongside Hurrell Lane to the west of the proposed Hurrell Lane Gas Processing Facility (TN5, Figure 7.1a). A number of the hedgerows that are crossed by the proposed pipeline working

width, particularly immediately south of the A170 may be used by foraging and/or commuting bats the disused railway embankment on the northern boundary of the proposed Hurrell Lane Gas Processing Facility is also likely to be a foraging and/or commuting route. In the north of the Development Zone, bats are also likely to use forestry rides and cleared areas for foraging. Habitats between the forestry plantations in the north of the Development Zone and the A170 are at greater altitude and are more exposed and open and considered less suitable for foraging bats due to lower insect prey productivity and availability.

#### *Bird Habitat Appraisal Results*

- 7.74 There are no designated sites of nature conservation importance within or adjacent to the Development Zone that are notified for their breeding and/or wintering bird populations. Records from the NEYEDC did not indicate any significant wintering flocks in the area that could be affected significantly by the proposals.
- 7.75 It is likely that nesting birds will utilise the habitats such as hedgerows in the Development Zone and the Forestry Commission woodland (outside the Development Zone) for nesting. Farmland and other bird species recorded during other survey work were predominantly widespread species including yellowhammer, linnet, blackbird, blue tit, great tit, wren, woodcock, robin, song thrush and carrion crow. There is potential for ground nesting birds to be present within the Development Zone and skylark was noted within the arable fields to the north of the A170 during the field survey work in September 2009. No habitats or other features were recorded within or immediately adjacent to the Development Zone that are considered to offer particularly notable or significant nesting, roosting or feeding habitats for birds or habitats that are not available in the extensive areas of similar habitat in the wider locality.

#### *Reptile Habitat Appraisal Results*

- 7.76 It is considered that there is some suitable habitat for reptiles, particularly adder (*Vipera berus*), slowworm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*), within the forestry plantations at the northern section of the Development Zone. While reptiles may be present, it is considered that the populations are likely to be small and consist of residual fragmented groups restricted mainly to the margins of plantations adjacent to forestry rides and tracks. Elsewhere within the Development Zone the intensively managed agricultural landscape generally does not offer suitable habitat for reptile species.

*Amphibian Habitat Appraisal Results*

- 7.77 There is a pond (P1, Figure 7.1) in the field to the east of Hurrell Lane and north of the railway embankment. In September 2009 this pond was completely dry but was holding approximately 0.5m depth of water in early March 2010 to an estimated maximum depth of 0.5m and area of c 75m<sup>2</sup>. The pond supports no aquatic vegetation and is considered likely to dry out in spring/summer. The surrounding pasture and arable habitats are of low suitability for amphibians; consequently pond P1 is assessed as being sub-optimal for breeding amphibians, including great crested newt. A second Pond (P2, Figure 1) is located to the east of the Development Zone (pipeline) but was confirmed as absent/dry in March 2010 and it is considered very unlikely to provide suitable breeding habitat for amphibians. There is an ephemeral area of standing water (P3, Figure 7.1d) located just off the pipeline route through the conifer plantation north of Warren House Farm. This is located in an open area of grassland just to the west of the forestry track. It appears to be a dry hollow that has filled with snow melt/rainfall, as standing water was not recorded as present on previous survey occasions in Autumn 2009. There are a number of ditches between the proposed Hurrell Lane gas Processing Facility and the A170 that were holding water in March 2010; most of these were flowing southward and therefore unlikely to support breeding amphibians and the drain margins were typically steep and sparsely vegetated. An exception is a short section of drain to the east of Hedgerow H26 and the proposed pipeline route (TN6, Figure 7.1a) which had static water/very slow flows in March 2010 and also supported some wetland vegetation including water forget-me-not. This drain is also likely to dry considerably in spring/summer and is also considered sub-optimal for breeding amphibians due to the poor adjacent terrestrial habitat quality. No other suitable waterbodies have been identified from the field surveys, desk-based study or review of OS mapping and aerial photography that have potential to support breeding amphibian populations that could also use habitats within the Development Zone.

*Other Notable Species*

- 7.78 Several brown hare were noted in arable fields to the north of the proposed Hurrell lane facility during survey work in March 2010.
- 7.79 No other notable species of flora and fauna were observed during the surveys and there are no habitats within or adjacent to the Development Zone that are likely to support protected or notable species that would be susceptible to effects arising from the proposed development activities.

*Trends in Baseline Conditions (without Development)*

- 7.80 Conifer plantations and rides likely to be disturbed and lost/replanted as the forestry is an agricultural crop. All other habitats likely to remain the same as the landscape is more likely to remain in intensive agricultural management than to change to alternate land-use, limiting successional changes or possibility of other habitat creation. Hedgerows may mature but not necessarily improve significantly in structure or reduction in gaps, and will still be heavily managed.

**Evaluation of Nature Conservation Value***Statutory Designated Sites*

- 7.81 The nearest statutory designated site is the North York Moors National Park. The National Park is located no closer than 0.5km to the north and west of the majority of the Development Zone. The exceptions to this are (i) the section of the pipeline route to the west of the Eberston Wellsite; (ii) the Wellsite itself, which are both just within the National Park boundary and (iii) the proposed Hurrell Lane Gas Processing Facility, which is within approximately 200m of the most south-easterly point of the National Park. The National Park is recognised as being of National importance because of the heather moorland, coastline landscape, ancient woodlands and historically significant sites.
- 7.82 None of the flora and fauna recorded within the Development Zone or the wider survey area is considered to make a significant contribution to the ecological integrity of the notable vegetation, habitats and fauna within the National Park.
- 7.83 There are four SSSIs and an SAC within 1km of the Development Zone. The Eilers Wood and Sand Dale SAC is recognised as being of International importance because of the presence of an Annex II species (Geyer's Whorl snail) whilst the four SSSIs are of at least National importance being designated because they contain features that meet national criteria for designation. No habitats, flora or fauna has been recorded within or adjacent to the Development Zone that is considered likely to be important in maintaining the ecological integrity of the SSSI or SAC.
- 7.84 No habitats, flora or fauna has been recorded within the Development Zone that is considered likely to merit statutory designation for its nature conservation value. The habitats within and adjacent to the Development Zone are common and widespread, generally of low structural and botanical diversity and do not support substantial areas

or high quality examples of protected or priority vegetation/habitat types or significant populations of individual species or assemblages that would be likely to merit statutory designation.

#### *Non-Statutory Designated Sites*

- 7.85 There are no non-statutory designated sites within or immediately adjacent to the Development Zone.
- 7.86 Three SINC's were identified within 1km of the Development Zone and the nearest site is Wilton Heights Quarry SINC. SINC's meet criteria set out in published guidelines (North Yorkshire SINC Panel, 2002) and are considered to have ecological value at County level.
- 7.87 No habitats, flora or fauna were recorded within or immediately adjacent to the Development Zone that are likely to merit designation as a Site of Importance for Nature Conservation (or similar non-statutory site) at a County or District level.

#### *Statutory Protected Species*

- 7.88 **Flora:** No statutory protected plant species were recorded by the surveys or desk study within or immediately adjacent to the Development Zone and such species are considered highly unlikely to be present within the intensively managed arable, pasture and plantation areas that would be affected by the development proposals.
- 7.89 **Badger:** Details can be found in Confidential Badger Survey Appendix 7.2.
- 7.90 **Bats:** There is potential for bats to be present within the building at the proposed Hurrell Lane Gas Facility, the small bridge along the disused railway embankment and within the bat boxes present in the trees to the west of the proposed Hurrell Lane Facility. Most trees within and adjacent to the Development Zone, including the coniferous plantations, are of low suitability for roosting bats, being young and intact and offering very limited roosting opportunities. There are a number of mature ash trees along Hedgerows to the south of the A170 that are semi-mature to mature and support substantial ivy growth, which could offer shelter for roosting bats, though the open arable landscape and quality of foraging habitats in the immediate area reduces their suitability as roost sites and they are therefore assessed as only being low/moderate suitability for roosting bats.



- 7.91 It is likely that the hedgerows and field margins within the Development Zone provide commuting and foraging areas for bats. However, given the amount of similar habitat over the wider area and the generally well-managed, low hedgerows, it is considered unlikely that areas within the Development Zone would provide roosting, foraging or commuting habitats of particularly high value for bats. The Development Zone and immediate environs is assessed as being of importance for bat populations at the Local level.
- 7.92 ***Nesting birds:*** Breeding and other farmland birds are likely to be present in the trees and hedgerows throughout the Development Zone, and for ground nesting birds to utilise the arable land within and surrounding the Development Zone. However, the area for nesting birds within the Development Zone is small relative to the similar habitat in the wider landscape, and it is assessed that the value of the habitats within the Development Zone for breeding and other farmland birds is of Local importance.
- 7.93 ***Reptiles:*** Habitats suitable for reptiles is limited both in extent and quality within and immediately adjacent to the Development Zone: reptile populations are likely to be small, particularly as most known records are from areas of better quality habitat within the large forestry plantations and SSSIs to the west and north west. Based on this it is considered that populations of reptiles within the Development Zone are likely to be of Local importance.
- 7.94 ***Amphibians:*** It is considered there is low probability that breeding amphibians (including great crested newt) are present in Pond P1 and the short section of drainage ditch to the east, because the water features appear to be ephemeral and the surrounding terrestrial habitat largely unsuitable. Consequently, amphibian populations are likely to be small, if present at all. The habitats within the Development zone are terrestrial and assessed as of value for amphibians at the scale of the immediate zone of influence. Pond P1, the drainage ditch and Pond P3 are to be monitored in spring 2010 to confirm their condition and permanence of standing water. If water levels are maintained, then surveys shall be undertaken to confirm the presence or absence of breeding species of amphibian.

*UK and Local BAP Habitats and Species (including Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006)*

- 7.95 ***Hedgerow:*** Under the current UK Biodiversity Action Plan (2007) hedgerows comprising at least 80% vegetation cover of native tree/shrub species, even if species-poor, are included as a Priority Habitat type. There are hedgerows within and crossed by the

proposed pipeline corridor which fulfil this description, though it should be noted that all are species-poor and a significant proportion have very limited ground flora of common and widespread species. Nevertheless, the hedgerow network represents a nature conservation resource in the local area, which has significantly greater structural heterogeneity than the intensively managed arable habitats and represents corridors for movement and colonisation of flora and fauna as well as places of shelter for fauna. As a whole, this network within the Development Zone is considered to be of Local importance.

7.96 **Arable Field Margins:** The UK Biodiversity Action Plan lists certain types of arable field margin as priority habitats. Margin types included are:

- i) cultivated, low-input margins. These are areas within arable fields that are cultivated periodically, usually annually or biennially, but are not sprayed with spring/summer insecticides and not normally sprayed with herbicides (except for the control of injurious weeds or problem grasses such as creeping thistle, black grass, sterile brome or wild oat). Cultivated, low-input margins include conservation headlands and land managed specifically to create habitat for annual arable plants;
- ii) margins sown to provide seed for wild birds. These are margins or blocks sown with plants that are allowed to set seed and which remain in place over the winter. They may be sown with cereals and/or small-seeded broad-leaved plants or grasses but areas sown with maize are excluded as they are of lower value for wild birds;
- iii) margins sown with wild flowers or agricultural legumes and managed to allow flowering to provide pollen and nectar resources for invertebrates;
- iv) margins providing permanent, grass strips with mixtures of tussocky and fine-leaved grasses. Areas of grass established as cross compliance requirements are excluded from this definition, but all other strips of grassland created by sowing or natural regeneration, such as field margins or beetle banks, are included.

7.97 The field margins within the Development Zone are generally of poor quality and with little or no floral diversity. As such, they are not considered to be of importance within the general ecological structure of the surrounding area and are assessed to be of importance within the immediate zone of influence only.

*Other Local BAP Habitats*

- 7.98 There are no other habitats considered of importance in the Ryedale or Scarborough BAP's present within the Development Zone.

*Other Species of Principal Importance for Conservation*

- 7.99 Brown hare, skylark, European hedgehog, common lizard, slowworm, adder and common toad (*Bufo bufo*) have either been recorded during the surveys undertaken in 2009-2010 or reported as being present within the wider area in records identified by the desk study. All are Species of Principal Importance in England, listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Suitable habitat for all these species exists within the Development Zone and its immediate surroundings. Reptiles are also listed as Priority Species on the Scarborough BAP and brown hare and skylark are listed as Priority Species on the Ryedale BAP. Evaluation for reptiles and skylark (farmland birds) has been discussed above.
- 7.100 Brown hare are likely to utilise the arable fields and field margin habitats, but there are no habitats within the Development Zone that are of significantly greater value for this species in comparison with the extensive areas of similar agricultural habitats; this species is likely to be widespread throughout the Development Zone and surrounding land. Habitat management within agricultural areas is the main influence on brown hare status and the Development Zone is assessed to be of importance for the species at the scale of the immediate zone of influence.
- 7.101 The habitats for hedgehog within the Development Zone are poor due to the lack of ground cover and limited foraging/nesting habitat and are assessed to be of importance within the immediate zone of influence only.
- 7.102 Common toad may be present within P1 and the ditches that form a number of the field boundaries but suitable habitat is limited within the Development Zone and is assessed to be of importance within the immediate zone of influence only.

*Other Habitats and Species*

- 7.103 All other habitats and species within the Development Zone are evaluated as being of low ecological value, at most of importance within the immediate locality or 'zone of influence'. There are no rare or scarce habitats, or other rare or scarce species of flora and fauna. This is primarily due to the low naturalness, and the low floristic and

structural diversity of the open and intensively managed agricultural landscape, which offers few opportunities for a diverse and/or notable associated fauna.

7.104 The evaluation of habitats and species within the Development Zone and wider area of search are summarised in **Table 7.3** below. Rather than providing evaluation for each habitat type, the value of the woodland, hedgerow and field margin habitats are expressed as an aggregated 'network' resource that supports a range fauna, including some protected and/or notable species/ groups. Together, these features provide some (albeit often limited) habitat continuity and connectivity in an otherwise open and homogenous agricultural landscape.

**Table 7.3: Ecological Evaluation Summary**

Feature	Location	Level of Value	Notes
Eller's Wood and Sand Dale SAC		International	More than 0.5km from the Development Zone. No substantive habitat connectivity with the Development Zone or other relationship that maintains the site's ecological integrity
Eller's Wood and Sand Dale SSSI	More than 0.5km from the Development Zone.	National	No substantive habitat connectivity with the Development Zone or other relationship that maintains the site's ecological integrity
Troutsdale and Rosekirk Dale Fens SSSI	More than 0.5km from the Development Zone.	National	More than 0.5km from the Development Zone. No substantive habitat connectivity with the Development Zone or other relationship that maintains the site's ecological integrity
Ellerburn Bank SSSI	More than 0.5km from the Development Zone.	National	More than 0.5km from the Development Zone. No substantive habitat connectivity with the Development Zone or other relationship that

Feature	Location	Level of Value	Notes
			maintains the site's ecological integrity
Nabgate SSSI	More than 0.5km from the Development Zone.	National	More than 0.5km from the Development Zone. No substantive habitat connectivity with the Development Zone or other relationship that maintains the site's ecological integrity
North York Moors National Park	Outside proposed development boundary to the north and west: distance varies from c. 800m to c. 200m along course of pipeline route	National	Integrity of site not significantly supported by habitats within the development area.
Wilton Heights Quarry SINC	500m north of proposed Development Zone.	County/District	Integrity of site not significantly supported by habitats within the development area.
Plantation woodland, hedgerows, and field margins	Throughout survey area.	Local	Low botanical and structural diversity and primarily of value for fauna species including brown hare, hedgehog, bats and breeding farmland birds.
Agricultural Land (Arable and improved pasture)	Throughout survey area.	Immediate Zone of influence	Intensively managed arable land dominates the Development Zone and is of low structural and botanical heterogeneity, though of some value to fauna, including farmland 'open country' birds species.

## Potential Impacts

- 7.105 A detailed development description is provided in Chapter 4 of the Environmental Statement. The proposed development includes the construction of approximately 8.6km of pipeline connecting the proposed Hurrell Lane Gas Processing Facility at the southern end of the Ryedale Gas Project with the existing Ebberston Wellsite to the north. Construction work is to include a working width for the length of the pipelines, construction of the Hurrell Lane Gas Processing Facility (322 x 177m area); adjacent 'hot tap' and Above Ground Installation (AGI) connection to the National Transmission System; a new access road from the A170 to the Hurrell Lane Facility, and temporary pipe storage areas, and site compounds.
- 7.106 The proposals include landscaping to (i) replace habitats lost as a result of the development and (ii) new landscaping (woodland planting) around the proposed Hurrell Lane facility, hot tap and AGI. These proposals are described in Chapter 8 of the Environmental Statement.
- 7.107 Subject to the grant of planning permission it is anticipated that the Proposed Development will be constructed and operational by 2012. The proposed Gas processing Facility has the potential to process gas from surrounding gas fields for the next 25 years.
- 7.108 The proposed pipeline construction represents the activity with the greatest potential for environmental effects, though these are likely to be temporary as land within the pipeline corridor is to be reinstated following construction to the existing land-use. The pipeline construction methodology is summarised below.

### *Pipeline Construction Methodology*

- 7.109 The proposed pipeline from the existing Ebberston Wellsite to the proposed Hurrell Lane Gas Processing Facility is approximately 8.6km in length.
- 7.110 There are two pipes to be installed - a 300mm and a 100mm diameter pipe - within a working width that is 15-42m in width, narrowed significantly along sections that are relatively more environmentally sensitive. Where hedgerows are breached, the working width will be kept to a minimum to permit installation of pipe and plant access.
- 7.111 With the exception of areas where the pipeline is to be installed through directional drilling (for example, under the A170 and the disused rail embankment), construction

will involve the stripping of soils and excavation of a 1.1m - 1.5m deep open trench followed by pipeline installation and then reinstatement to the current land-use. Soils are to be stored within the pipeline working width and reinstated on completion of the pipeline installation.

*Potential Construction and Decommissioning Effects on Statutory Designated Sites*

- 7.112 There would be no direct effects on the ecological integrity of the identified statutory designated nature conservation sites. The nearest development work is the installation of the northern section of the pipeline where it runs just inside the National Park (the existing access track to the Ebberston Wellsite forms the boundary to the Park). The proposed pipeline corridor also passes within 200m of the National Park boundary where it runs through the Forestry Commission woodland. The proposed Hurrell Lane Gas Processing Facility will be approximately 200m to the east of the southernmost boundary of the National Park. The development work closest to the National Park would include (i) trench excavation and installation of the pipeline in the northern section of the Development Zone, and (ii) construction of the Hurrell Lane Gas Processing Facility within the southern section. The section of pipeline to be installed just within the National Park runs alongside an existing unmetalled track and through the arable field to the west of the existing Ebberston Wellsite (Figure 7.1e). Based on the low nature conservation value of the affected arable habitat and the small scale and the temporary nature of the disturbance, it is assessed there would not be any significant direct impact arising from the installation of the pipeline or other activities on the ecological integrity or nature conservation value of the National Park.
- 7.113 No significant indirect effects are anticipated on the value or ecological integrity of the National Park. This is based on the nature of the habitat affected (arable land) and the temporary nature of the disturbance and the fact that there are no substantive connecting or supporting habitats that would be affected by the development and that could also significantly influence the ecological integrity of the National Park.
- 7.114 The Eller's Wood and Sand Dale SAC/SSSI are situated approximately 600m to the west of the central section of the proposed pipeline corridor. The SAC is designated because of the presence of an Annex 2 species, Geyer's Whorl snail, a mollusc that typically occurs in wet, spring habitats. The SSSI is designated partly because of the presence of springs and associated wet woodland and fen. It is not anticipated there would be any effect on the hydrology of the SAC/SSSI from installation of the pipeline, as the excavation trench would be a relatively superficial feature (c.1.5m depth) and would not intrude or otherwise disrupt groundwater flows that could affect the SAC/SSSI. As

such, it is assessed that there would be no significant impact on any of the wetland features within the SAC/SSSI and or on Geyers Whorl snail, for which the SAC is designated. Confidence in this assessment is high and there is considered to be no requirement for the competent authority to undertake Appropriate Assessment of potential effects on the ecological integrity of the SAC European Designation.

- 7.115 Similarly, no significant direct or indirect impacts are anticipated on the Troutdale and Rosekirk Dale Fens SSSI, which is the closest statutory site to the Development Zone; approximately 500m north of the Ebberston Well site. The SSSI is designated primarily on the presence of spring fed mires and fen systems. It is not anticipated there would be any effect on the hydrology of the SSSI from installation of the pipeline, as the excavation trench would be a relatively superficial feature and would not intrude or otherwise disrupt groundwater flows that could affect the SSSI. It is considered that there would be no significant impact on any of the wetland features for which the SSSI is designated, or on other nature conservation interests associated with the SSSI.
- 7.116 The other two SSSI also have no hydrological or other dependence on the habitats within the Development Zone. There are no other habitats or features within or immediately adjacent to the Development Zone that considered likely to influence the integrity of these sites. It is not anticipated that the construction would have any significant impact upon their ecological integrity, given the distance from the Development Zone and the limited zone of influence of the construction activities and other development proposals, and the temporary nature of much of the development activities.

*Potential Construction and Decommissioning Effects on Non-statutory Designated Sites*

- 7.117 The proposals would not have any significant direct or indirect effect on the ecological integrity of Wilton Heights Quarry SINC, as the nearest development work is construction of the pipeline situated at least 500m to the south of the SINC. The site is beyond the likely zone of influence of the proposed development activities. The ecological interest of the SINC is its assemblage of flora and fauna species; the habitats affected by the pipeline construction do not substantively contribute to the reasons for designation of this site, or its connectivity to other more ecologically valuable sites within the area.
- 7.118 Other non-statutory sites nearby are considered to be beyond the zone of influence of the proposed construction activities. No significant direct or indirect effects on these sites are predicted and they are not considered further in this assessment.



*Potential Construction and Decommissioning Effects on Protected Fauna Species*

- 7.119 **Badger:** Badgers and their setts are protected under the Protection of Badgers Act 1992. Potential effects on badger are discussed in Confidential Appendix 7.2 submitted with this ES.
- 7.120 **Bats:** Bats and their roosts are afforded protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats &c. Regulations) 1994 (as amended). Offences include damage, disturbance or obstruction of access to bat roosts as well as direct harm or disturbance of bats themselves.
- 7.121 No buildings are to be demolished or modified as a result of the proposals and there are no mature trees that would be directly affected by the proposals. There are potential roost sites in the wider vicinity of the proposed Hurrell Lane Gas Processing Facility, namely a small farm building, a number of bat boxes within trees on the boundary along Hurrell Lane and a bridge structure on the dismantled railway. There is the potential for indirect impact on any bats that may be using the building or one or more of the bat boxes from noise and use of high power lighting during construction, although the nearest lighting for the main construction areas are estimated to be at least 50m from these potential roost sites in bat boxes, buildings and mature trees, and would be shielded, directional lighting. The bridge on the dismantled railway line is estimated to be more than 50m from the pipeline construction areas (the pipeline is to be drilled underneath the disused railway embankment) and 100m east of the main construction area for the facility, 20-30m from the access road route, and screened from temporary construction lighting to a large extent by existing vegetation.
- 7.122 Noise levels from pipeline construction in proximity to buildings, trees and other features are likely to be similar to noise levels from routine agricultural operations with the closest activities (fencing installation, access road and car park construction) creating only temporary increases in noise and the presence of plant and personnel.
- 7.123 Temporary security lighting would be provided at the storage areas and construction compounds, but this would be subject to controls under a lighting management plan to be agreed with Local Authority, specifying location of temporary lighting. Temporary lighting will be directed into the centre of the temporary construction areas at Hurrell Lane and storage areas alongside the pipeline, to minimise spill and would be designed with full cut-off and would be directionally shielded. Tilt angles and shields will minimise upward light loss to 'sky glow'. Lighting will be switched off when not required and night working is not anticipated, significantly reducing the likelihood of disturbance or

localised displacement of bat activity. Noise levels and duration (Chapter 10) would also be limited and there are no activities that are likely to cause significant disturbance to potential roost sites. Overall, it is assessed that there would be no harm or significant disturbance impact on the potential roost sites from construction activity.

- 7.124 The most productive potential foraging habitats for bats within the area are generally restricted to the farmyards where livestock are kept, and hedgerow/woodland edges. Pipeline construction would result in the temporary loss of hedgerow habitat, albeit relatively short sections of species-poor hedgerows, that would be replaced on reinstatement of the pipeline working width so that the effect is reversible in the short-medium term. The narrow, temporary working corridor of the majority of the development and the small temporary losses of generally short, regularly managed hedgerow habitat and interruption of drain lines is not expected to have a significant impact on the local bat populations ability to commute and forage in the locality.
- 7.125 Ecological monitoring of the site during construction will identify changes in the condition/suitability of potential roost sites and will check on lighting arrangements in proximity to identified potential roost sites. This will feed into a construction environmental management plan (or similar) for the development, which will specify areas and features requiring precautionary construction stand-offs or protection from noise/lighting or other disturbances. High levels of bat activity within the Development Zone are unlikely but monitoring surveys will review this prior to construction commencing so that activity before, during and after development can be assessed and to identify any areas that require particular measures such as lighting reduction or screening. It is assessed that there would be no significant impact on the conservation status of local bat populations from construction activities. The same assessment applies to decommissioning activities, which are likely to be very similar in nature.
- 7.126 **Reptiles:** All British reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). Grass snake (*Natrix natrix*), slowworm (*Anguis fragilis*), common lizard (*Zootoca vivipara*) and adder (*Vipera berus*) are protected against intentional killing or injury and against sale. In addition, all British reptiles are UKBAP priority species and are listed as Species of Principal Importance under the provisions of the NERC Act 2006.
- 7.127 Common reptiles species are likely to be present within some of the woodland edge habitat within the Forestry Commission plantation areas. Following reinstatement reptile habitats would be re-established in the short-medium term, though there remains some risk that, without mitigation, harm could be caused to low numbers of reptiles within the Development Zone during construction work. Should this occur it is assessed that

there would be an adverse impact at the scale of the Development Zone only. Whilst unlikely to affect the conservation status of local reptile populations, killing or injury to reptiles could constitute a legal offence and requires a mitigation response. The same assessment applies to decommissioning activities, which are likely to be very similar in nature

- 7.128 ***Amphibians:*** Great crested newts and their aquatic and terrestrial habitat are afforded legal protection under both the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats &c.) Regulations 1994 (as amended). Offences include actions that harm or disturb the animals and/or their habitats. Great crested newts are also listed as a priority species on Section 41 of the NERC Act, the UKBAP and the LBAP.
- 7.129 It is considered that there is very low risk that great crested newt is present within the zone of influence of the proposed development, because there are no local records of this species in the immediate area, the recorded standing water features in the wider survey area appear to be ephemeral, and the terrestrial habitats predominantly unsuitable. No significant effects on this species are anticipated. However, a precautionary approach is to be taken and the standing water areas monitored in spring/early summer 2010 to confirm their ephemeral nature. Should the standing water persist then they shall be subject to surveys to determine presence or absence of breeding amphibians, and particularly great crested newt.
- 7.130 Common toad is listed as a priority species under Section 41 of the NERC Act 2006 and the UK BAP. It is also considered low risk that toads are present for the same reasons given for great crested newt, and no significant impact on this species, or other amphibians is anticipated. As discussed above, should the standing water persist then these features shall be subject to surveys to determine presence or absence of common toad and other breeding amphibians.
- 7.131 ***Nesting birds:*** No schedule 1 (Wildlife and Countryside Act, 1981) bird species are likely to be affected by the development proposals. The nests of all wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) while they are being built or are in use. Removal of vegetation and stripping of soils within the Development Zone has the potential to disturb or damage nests of breeding birds if undertaken during the nesting season (typically March-September inclusive). There would also be a temporary loss of habitat for nesting and possible avoidance of construction areas and immediate environs due to noise and the presence of plant and personnel. This includes birds that nest in hedgerows and ground nesting birds such as skylark. However, the magnitude of habitat loss (or avoidance effects through noise and other disturbance) resulting from the temporary pipeline works and the construction of

the new installations is assessed as insignificant in comparison to the large area of similar suitable habitat in the immediate and wider locality; it is not anticipated there would be any significant effect on the conservation status of local bird populations beyond a minor, temporary and reversible effect during the construction period at the scale of the Development Zone. There remains however, the potential for damage or destruction of nests should any nesting birds be present in hedgerows or on the ground when vegetation is removed or soils are stripped.

7.132 Other birds that could potentially utilise habitats within the Development Zone include wildfowl and wader species within arable fields during the winter period. However, there no special interest for this group of birds has been identified through the desk-based investigations and, as with nesting birds, the scale of the development in relation to the abundant alternative habitats in the wider area means that there would not be any significant impact on habitat availability as a result of the development proposals.

7.133 Brown hare use arable fields within and adjacent to the Development Zone. Although no significant effects on this Species of Principal Importance are anticipated to arise from the limited and largely temporary habitat loss, Brown hare young (leverets) are at risk of direct harm from construction plant, particularly if soils are stripped within the pipeline working width during the breeding season. The adverse impact is likely to affect only a small number of individuals and would be short lived and reversible, significant at the scale of the Development Zone only; the effect is unlikely to affect the conservation status of local Brown Hare populations.

7.134 No other significant effects on specially protected fauna species are anticipated from construction activities associated with the proposed development. Effects are predominantly temporary and affect a small area of habitats of relatively low ecological with no distinctive attributes that set them apart from the large areas of similar habitat in the locality

*Potential Construction and Decommissioning Effects on Other Habitats and Species*

7.135 **Woodland:** There is the potential for minor impacts on the margins of the plantation woodlands if fringing vegetation has to be removed to allow for the construction of the pipeline. However, this is a small and temporary impact and is not expected to cause any significant permanent adverse effects on the ecology of the plantation areas. There would be no effect on the broadleaf woodland on the dismantled railway line as the pipeline is to be drilled underneath this feature, avoiding the need for vegetation removal.

- 7.136 Standard dust suppression techniques during construction will avoid significant dust deposition to woodland vegetation. Other changes in air quality (due to construction plant and vehicle emissions) are highly localised, temporary and reversible and no significant effects on hedgerow vegetation are anticipated.
- 7.137 **Hedgerow:** There would be temporary loss of short sections of species-poor hedgerows along the pipeline route. The route has already been designed to avoid hedgerow trees and whilst the working width is 42m wide at its maximum, this is reduced significantly where hedgerows are breached to minimise losses. Only two of the hedges surveyed are considered to potentially qualify as important under the wildlife and landscape criteria of The Hedgerows Regulations 1997 (H35 and H40, Figure 7.1a). These hedges are expected to remain intact as it forms the southern boundary of the proposed Hurrell Lane Gas Facility along Ings Lane.
- 7.138 There would be loss of two short sections (<20m) of Hedgerow H38 alongside Hurrell Lane due to construction of the hot tap and AGI. There would also be loss of a short section of Hedgerow H34 (<20m) on the eastern boundary of the proposed Hurrell Lane facility, arising of construction of the access road. There would also be hedgerow lost within H24a. These are well-managed, species-poor hedgerows, the losses are not considered to have a significant adverse effect on local nature conservation interests, and are offset by replacement and new planting throughout the scheme.
- 7.139 Standard dust suppression techniques during construction will avoid significant dust deposition to hedgerow vegetation. Other changes in air quality (due to construction plant and vehicle emissions) are highly localised, temporary and reversible and no significant effects on hedgerow vegetation are anticipated.
- 7.140 The sections of hedgerow lost would be replaced during reinstatement by replanting with native species and would typically include hawthorn, blackthorn, elder and ash. None of the affected hedgerows is species-rich, mature, or supports any notable flora or fauna. The reinstatement of hedgerows following completion of pipeline construction reduces the effect to a temporary, reversible impact that is assessed as not significant to local conservation interests, and is likely to be a long-term, beneficial effect at the scale of the Development Zone once the planted vegetation has established and matured.
- 7.141 **Other Habitats:** Other habitat losses that would result from the development proposals include the permanent loss of arable land at the site of the proposed Hurrell Lane Gas Processing Facility, 'hot tap' and AGI, and the connecting access road from the A170.

There would also be the temporary loss of arable land, ruderal vegetation and field margins along the pipeline route and potentially small, peripheral areas of young conifer plantation in the Forestry Commission land.

- 7.142 The loss of arable land is not considered to be significant to local ecological interests. Although the arable fields will support species such as brown hare and a range of farmland birds, the availability of these small affected areas of intensively managed arable land is not an influential factor in the status of these species or groups in the local area: the loss is assessed to be not significant. The loss along the pipeline corridor is temporary, as the land would be reinstated to its previous state following installation of the pipeline.
- 7.143 Other losses are very small and affect habitats of low naturalness and diversity, and the impacts are assessed as not having a significant effect on local nature conservation interests.

#### *Potential Operational Effects on Flora and Fauna*

- 7.144 On completion of pipeline installation, the land will be reinstated to its former use and no significant impacts are anticipated on habitats, species or features of nature conservation interest from operation of the pipeline.
- 7.145 Operation of the Hurrell Lane Gas Processing Facility and the Ebberston Well-site are not expected to result in any additional significant effects on flora and fauna species. It is anticipated that, apart from occasional visits for maintenance and checking of the facilities, the sites will be unmanned, so any increase in traffic to these sites would be low level. Predicted traffic levels are 5 staff vehicles visiting the Hurrell Lane Gas Processing Facility per shift, 1 light vehicle trip between the Hurrell Lane Gas Processing Facility and the Ebberston Well-site per day and also 1 HGV vehicle trip to and from the Hurrell Lane Gas Processing Facility per day. The disturbance effect to wildlife or potential for road casualties from the operational phase of these areas is not assessed as significant.
- 7.146 Chapter 14 of the Environmental Statement describes the proposals for 'Lighting' of the permanent facilities. Operational lighting at the Hurrell Lane facility (no lighting is proposed for the Ebberston well-site) would be limited to the minimum to satisfy safety requirements and would be restricted to areas as follows:

- adjacent to roadways (excluding the access road), footpaths and vehicle manoeuvring areas for safety reasons.
- 'comfort' lighting to doorways; and
- safety lighting on the equipment.

7.147 Lights would be fitted with shields and cowls to minimise spill from the facility. No need for high-level lighting is anticipated. Light-spill is not therefore anticipated to extend a significant distance beyond site boundary into the adjacent woodland on the dismantled railway and would not deleteriously affect the potential roost sites within trees (including bat boxes) bordering Hurrell Lane, nearby farm buildings and the bridge on the dismantled railway. The operational effects of lighting are therefore assessed to be not significant to local nature conservation interests.

7.148 Chapter 10 describes the likely noise and vibration effects arising from construction, and operation. For this ecological assessment a level of 50dBA is taken as a threshold above which localised disturbance and displacement effects may occur to breeding birds, the most likely receptor for noise emissions. The noise assessment in Chapter 10 describes noise arising at the Ebberston Wellsite as 'sporadic' and noise sources being 'a power generator, fabrication equipment, the occasional use of other diesel powered plant such as cranes and offloading plant, and movements of HGVs delivering materials to site'. At the Hurrell Lane site, construction will be over a longer period (20 weeks) and noise sources will be 'a power generator, deliveries and offloading of materials and equipment (during daytime working hours only), ancillary lifting equipment, fabrication equipment and contractors' plant'. At some locations, temporary construction noise in the immediate vicinity will exceed 50 dB ( $L_{Aeq}$ ) for short periods of time, which could displace or discourage birds and other fauna. As this is a very short-lived and reversible effect and affects a limited area, it is assessed as not significant.

7.149 Operational noise emissions arising from plant operation at both the Ebberston wellsite and Hurrell Lane facility have been assessed to be highly localised and likely to be mitigated further during detailed design. The Ebberston Wellsite will be a quiet operation and noise levels at the boundary are unlikely to exceed 50dBA; noise effects on wildlife in this locality are assessed as not significant. At the proposed Hurrell Lane facility, noise emissions of around 50dBA are likely to be experienced at distances of up to 70m from the centre of the Hurrell Lane facility, or up to 20-30m from the facility boundary (depending on detailed layout design, specifications of the plant and noise mitigation). Such noise levels are likely to be experienced intermittently from routine agricultural operations in the areas and the additional effect (if any) of more constant

noise emissions is difficult to predict. A precautionary approach would be assume that this could result in some very localised effects on local fauna (e.g. some farmland bird species). Given the small area affected, disturbance from noise is not considered likely to affect the conservation status of local fauna.

- 7.150 Chapter 9 describes the likely changes in air quality arising from construction, operation and decommissioning, and considers Nitrogen oxide (NO<sub>x</sub>) emissions from operation of the facilities, including traffic on the access road. Air quality effects on sensitive receptors are assessed, including the SSSI and European Designated sites in the wider locality. The maximum increase in nitrogen deposition at a designated or otherwise sensitive ecological receptor is anticipated to be 0.001 kg nitrogen per hectare per year (kgN/ha/y), which would occur at Eller's Wood and Sand Dale SSSI and SAC, Nabgate SSSI and Ellerburn Bank SSSI. These sites have an existing background nitrogen deposition rate of 20.4 kgN/ha/y. The increase of 0.001 kgN/ha/y equates to 0.005% of the background rate of nitrogen deposition for these sites and is considered to be not significant. In relation to critical load thresholds all the designated sites considered exceed their respective lowest critical load thresholds. However, the anticipated changes in nitrogen deposition are very small for all the sites in absolute terms and also as a proportion of background nitrogen deposition. Therefore, the predicted changes in nitrogen deposition are considered to be insignificant and no change in the condition or ecological integrity of designated sites is anticipated.

#### *Proposals for Reinstatement and Habitat Creation*

- 7.151 As described above, hedgerow vegetation along the pipeline route would be replaced with native species to create more botanically diverse hedgerows. With the consent of landowners, opportunities would be explored to gap-up existing hedgerows adjacent to the pipeline route and proposed new facilities, to improve habitat structure and connectivity. Opportunities for habitat enhancement can be secured through Section 106 agreement with the local authority. Objectives for the landscape and design (described in Chapter 8) are focused on the new facilities and include ecological and amenity enhancement through the introduction and appropriate management of woodland and tree belt planting, with an emphasis on linkage to existing ecological and landscape features.
- 7.152 The proposals include new landscaping to act as screening around the Eberston Wellsite and also Hurrell Lane Gas Processing Facility, which would include native, broadleaf tree species around the facility and adjacent to the existing hedgerows. This



would reinforce the local hedgerow network and add to the existing woodland resource on the dismantled railway to the north of the proposed Hurrell Lane facility.

- 7.153 The detailed design of the site restoration and new planting would be determined at the detailed restoration design stage, but it is considered that the final restoration habitats would be of higher ecological value than those in the existing baseline conditions, to include hedgerow and woodland enhancement, representing a beneficial effect on nature conservation interests at the scale of the Development Zone.
- 7.154 Species-specific enhancement measures include installation of barn owl and other farmland bird boxes (for both raptors and passerine species) on trees and/or bespoke posts in both the Hurrell Lane facility and Ebberston Well-site areas. These locations would be defined at the detailed design stage and would include 2 barn owl boxes and 15-20 boxes for a range of other species. Opportunities for this type of enhancement can be secured through Section 106 agreement with the local authority.
- 7.155 Depending on the outcome of amphibian surveys in spring 2010, the potential for enhancement of existing pond P1 would be explored with the landowner. Enhancement could include increasing depth/permanence of water and planting of aquatic/marginal vegetation together with fencing to protect some of the pond margins from livestock grazing and poaching. Opportunities for habitat enhancement can be secured through Section 106 agreement with the local authority.

### **Mitigation Measures (including Avoidance)**

- 7.156 The avoidance and mitigation measures described in the following sections will be captured by an environmental management plan(s) for the site, which cover the construction, operational and decommissioning phases.
- 7.157 Ecological conditions will be monitored and mitigation measures upheld throughout the lifetime of the Proposed Development.

### *Statutory and Non-Statutory Designated Sites*

- 7.158 No significant direct or indirect effects are predicted on statutory designated nature conservation sites; no avoidance or other mitigation measures are required.
- 7.159 No significant direct or indirect effects are predicted on non-statutory nature conservation sites; no avoidance or other mitigation measures are required.

*Statutory Protected Species*

- 7.160 **Badger:** Measures to address potential effects on badger are discussed in Confidential Appendix 7.2.
- 7.161 **Bats:** The monitoring and design measures described to minimise light spillage during construction/decommissioning and operation of the proposed Hurrell Lane Gas processing Facility and operation of the Ebberston Wellsite will mitigate potential lighting disturbance impacts. No specific measures are considered necessary to mitigate minor noise effects during construction and operation, as disturbance to bat is unlikely. It is not anticipated that there will be any significant adverse impacts on the conservation status of the local bat population. New planting around the Hurrell Lane facility in particular will improve habitat connectivity and structure in the immediate local area and provide a beneficial effect on local bat populations at the scale of the Development Zone.
- 7.162 No further avoidance or mitigation measures are proposed. Monitoring of bat activity before and during construction (at and around the proposed Hurrell Lane facility in particular) is to be undertaken in order to: (i) inform the detailed landscape design that will develop from the current proposed strategy (Chapter 8); (ii) identify changes in bat activity that may require a mitigation response during construction; and (iii) monitor and assess the success of mitigation against baseline (pre-construction) levels, with recommendations to modify working practices or construction design if necessary.
- 7.163 **Reptiles:** As described above, there is some suitable habitat for reptiles, particularly adder, slowworm and common lizard within the Forestry Commission land at the northern end of the pipeline route. While reptiles may be present, it has been assessed that there would be no likely significant adverse effect on the conservation status of local populations that may be present, though there is potential for harm to individual reptiles within construction areas. Where suitable habitat exists within the Development Zone, prior to soil stripping and vegetation removal, a precautionary search would be undertaken during suitable weather conditions in the period March-September, and reptiles found moved to the nearest suitable receptor area outside the Development Zone. Considering the relatively small areas affected and low numbers of reptiles anticipated, the capacity of undisturbed habitats to accommodate transferred animals is assessed as adequate.
- 7.164 The details of the search methodology and receptor areas would be presented for the approval of the local authority and included in a Construction Environmental

Management Plan (or similar). Depending on the outcome of the search, reptile exclusion fencing may be required alongside areas of suitable habitat to prevent animals entering the construction areas of the Development Zone. Through toolbox talks, site contractors would be made aware of the possibility of reptiles being present and appropriate actions to be taken to minimise risk of harm during construction, and responses in the event of discovery of reptiles on the site.

7.165 ***Amphibians:*** Should the areas of standing water persist at Ponds P1, P3 and the section of drainage ditch (TN6, Figure 7.1a) to the north of the proposed Hurrell Lane facility, then they will be surveyed for the presence of amphibian species in spring 2010, well in advance of any construction activities. If present, then avoidance of harm to amphibian species would be achieved through installation of amphibian exclusion fencing along the boundary of the Development Zone; No aquatic habitats are affected and there would be no requirement for extensive search and capture as affected terrestrial habitats are arable farmland of low suitability for amphibians. If amphibian species include great crested newt, then consultation with Natural England would determine whether the mitigation would need to be permitted under a European Protected Species licence. Such measures would avoid adverse impacts on amphibian species and where necessary, licence controls & conditions would provide the appropriate mechanism.

7.166 ***Breeding Birds:*** Where possible, vegetation removal and soil stripping for construction would be undertaken outside the bird-nesting season to avoid disturbance, damage or destruction of active nests. Where this is not possible, and depending on the scale of clearance work required within the breeding season, consideration would be given to (i) placement of netting over any hedgerows likely to support nesting birds in early spring before nesting commences and (ii) installation of bird-scarers and deterrents within proposed construction areas. In addition, prior to hedgerow removal and soil stripping, surveys would be undertaken along sections of hedgerow to be removed and in advance of soil stripping to identify any nests, which would be clearly marked, left intact and monitored so that damage is avoided and disturbance effects minimised until young have fledged.

#### ***Other Habitats and Species***

7.167 Landscape planting around the proposed new facilities would include a significant proportion of native broadleaf species, which would compensate for small losses associated with the construction of the pipeline. Surveys prior to construction would identify selected mature woody hedgerow specimens to be retained and translocated to

receptor areas within the working width during construction, and then replaced as part of the reinstatement. Breaches through hedgerows are to be reinstated using native species and a greater range of woody species would be planted than is currently present. Nature conservation benefit could be further increased through infilling any adjacent lengths of hedgerow that currently have gaps.

- 7.168 No other significant effects on flora and fauna have been identified that would require mitigation measures.
- 7.169 Proposals for planting and seeding are detailed within the landscape section of this ES. As described above, it is anticipated that there would be a net increase in the ecological value of the locality area, which is a positive effect assessed as significant at the scale of the Development Zone.

### **Residual Effects**

- 7.170 Providing the mitigation measures described above are implemented and monitored as described, the assessment concludes that there would be no significant residual adverse impacts on any features of nature conservation interests. Beneficial effects on nature conservation interests at the scale of the Development Zone would arise from new planting and species-specific enhancement measures, which would make proportionate, modest contribution to local Biodiversity Action Plan Targets for woodland, hedgerows and farmland birds. There is also the opportunity to enhance Pond P1, which would further increase the ecological benefits arising from the proposals.
- 7.171 Confidence in the assessment of residual effects is considered to be high with respect to designated nature conservation interests and other habitats and vegetation, as no significant effects are anticipated and the value of these receptors is unlikely to change significantly in advance of the proposed development.
- 7.172 Confidence in the assessment for protected species (badger, bats, reptiles, nesting birds) is considered to be medium/high. Whilst sufficient baseline data has been gathered to assess current potential effects and the mitigation proposals provided are considered sufficient to mitigate for likely effects, it is recognised that the local status and distribution of fauna species may change before construction commences and also during construction.

7.173 The likely potential impacts on the principle ecological receptors (sites, habitats, species and other features) associated with the proposed development are summarised below in **Table 7.4**.

Table 7.4: Summary of Ecological Impacts, Mitigation and Residual Effects

Ecological Receptor	Proposed activity, biophysical change and relevance to receptor in terms of ecosystem structure and function	Characterisation of Impact	Effect on integrity or conservation status; confidence in this assessment; and rationale	Mitigation	Residual impact and significance
<b>Designated Nature Conservation Sites</b>	No changes anticipated to ecosystem structure and function at statutory or non-statutory designated sites, as these sites are considered to be beyond the zone of influence of the development activities.	None	None. (Confidence = high) distance of the Development Zone from designated sites and the relatively small scale, short duration, and superficial nature of the development proposals means no likely direct or indirect adverse effects.	None required	Not significant (confidence = high)
<b>Badger</b>  Badgers are protected under the Badgers Act 1992	See Confidential Badger Survey Appendix 7.2 provided with the ES. Some significant effects are expected during construction but appropriate mitigation will minimise this impact. No significant residual effects are anticipated. Confidence = moderate/high				
<b>Bats</b>  Bats are protected under the Wildlife and Countryside Act 1981 (as amended), and by the Habitats Regulations 1994 (as amended)	Removal of hedgerows for pipeline construction resulting in temporary loss of some foraging/commuting habitat.  Potential disturbance to roosting bats identified but avoided through distance of construction from potential roosts and sensitive	Removal of hedgerows is temporary as they would be replaced on reinstatement	Temporary loss of habitat is not significant to the conservation status of bat populations (confidence = high).  New hedgerow and woodland habitats will provide some improvement in habitat quality for local bat populations, providing planting is informed	Replacement of hedgerows following construction.  Routine monitoring to inform design and monitor success of mitigation measures.	Not significant (confidence = moderate/high)

Ecological Receptor	Proposed activity, biophysical change and relevance to receptor in terms of ecosystem structure and function	Characterisation of Impact	Effect on integrity or conservation status; confidence in this assessment; and rationale	Mitigation	Residual impact and significance
	operational lighting design.  New planting at Hurrell Lane facility will result in beneficial effects.		by pre-construction monitoring.		
<p><b>Nesting Birds</b></p> <p>Bird nesting may occur within construction areas including hedgerows and arable habitats</p> <p>Nests of wild birds are protected under the Wildlife &amp; Countryside Act 1981 (as amended)</p>	<p>Site clearance including vegetation removal and hedgerow clearance for pipeline, and soil stripping in construction areas.</p> <p>Temporary loss of some nesting habitat until replacement and new planting is established.</p>	<p>Effects along pipeline largely temporary as soils/vegetation replaced on reinstatement.</p> <p>Only small areas affected relative to large similar habitat in locality</p> <p>Principle risk is of direct harm to adults, young and eggs.</p> <p>New landscape planting and installation of nest boxes would compensate for losses of woody vegetation</p>	<p>Loss of habitat is not significant to the conservation status of nesting bird populations in the locality (confidence = high)</p> <p>The losses are low in magnitude relative to the abundant alternative habitat in the area.</p> <p>However, potential harm to nesting would be of significance to the animals concerned, causing harm or failure to breed (confidence = high)</p> <p>New woodland and hedgerow planting and wetland creation would offset losses and bring benefits at the scale of the Development Zone/immediate</p>	<p>Remove nesting habitat outside the breeding season where possible.</p> <p>Undertake pre-commencement checks for nests and protect/retain any active nests until young have fledged.</p>	<p>Positive effect at scale of Development Zone/immediate zone of influence</p> <p>(Confidence = high)</p>

Ecological Receptor	Proposed activity, biophysical change and relevance to receptor in terms of ecosystem structure and function	Characterisation of Impact	Effect on integrity or conservation status; confidence in this assessment; and rationale	Mitigation	Residual impact and significance
			area.		
<b>Herpetofauna</b>	Removal of vegetation and soil stripping has potential to cause direct harm and disturbance	Temporary impact affecting small areas of generally low quality habitat for herpetofauna.  Reinstatement would result in no significant net loss of habitats following establishment of new vegetation.	No adverse impacts on conservation status (confidence = moderate) due to small affected areas and low risk of species being present throughout the majority of the Development Zone.	Monitor habitat condition (amphibians in spring 2010. Where necessary, survey/search for reptiles & amphibians in advance of construction to identify areas requiring mitigation.  Agree methodology and approach with local authority and Natural England where necessary.	Not significant. Confidence = high.
<b>Vegetation and Habitats</b>  No rare or scarce habitats or species of flora.  Generally species-	Site clearance including vegetation removal, hedgerow clearance, and culverting of ditches for pipeline installation where necessary.	Effects along pipeline largely temporary as soils/vegetation replaced on reinstatement  Only small areas affected relative to	Loss of habitat is not significant to the nature conservation interests of the locality (confidence = high)  New hedgerow planting and planting around new facilities would offset losses and	Working width at hedgerow crossings minimized.  Replacement of all affected hedgerows along pipeline route with native species.	Positive effect at the scale of Development Zone/immediate zone of influence  (Confidence =



Ecological Receptor	Proposed activity, biophysical change and relevance to receptor in terms of ecosystem structure and function	Characterisation of Impact	Effect on integrity or conservation status; confidence in this assessment; and rationale	Mitigation	Residual impact and significance
<p>poor agricultural habitats, field boundaries and poor, often fragmented hedgerows.</p> <p>Hedgerows, though poor, are a UK BAP priority habitat and a locally important resource.</p>		<p>large similar habitat in locality</p> <p>New landscape planting would compensate for losses</p>	<p>potentially bring minor benefits. (confidence = high)</p>	<p>Liaison with landowners re 'gapping-up' of adjacent hedgerows to improve structure and connectivity.</p> <p>Retention and planting of trees from existing planting areas around Wellsites. New planting to include native species in keeping with local woodland habitats</p>	<p>high)</p>

## Planning Policies

7.174 The relevant nature conservation policies from the Ryedale (ENV-) and Scarborough (E-) Local Plans and an assessment of the proposed development's compliance with each policy are given below in **Table 7.5**.

**Table 7.5: Planning Policies (Nature Conservation)**

Policy	Description / Purpose	Relevance	Compliance
E1	Protection of open countryside	Applies throughout the Development Zone	Development complies with policy as there will be no significant adverse effects on the ecology open countryside and effects will be temporary, with increased ecological value following reinstatement and establishment of new, planted vegetation.
E7, ENV12	Control of development affecting Non-Statutory Designated Sites	Applies to protection of Wilton Heights Quarry SINC and their proximity to development	Development complies with policy as there will be no significant effects on the ecological integrity of the SINC designations.
E39	Control of development affecting hedgerows and trees	Applies throughout the Development Zone	Development complies with policy as there will be no hedgerow or other broadleaf tree removal (there may be minor effects on conifer plantations) and hedgerow reinstatement will occur following development.

## Summary & Conclusion

7.175 The ecological assessment for the proposed Ryedale Gas Project has included desk study and field surveys to describe the ecological baseline, an evaluation of nature conservation interests, assessment of potential effects, description of mitigation measures and assessment of residual effects on flora and fauna.

7.176 No designated statutory or non-statutory sites of nature conservation value would be significantly affected by the proposed development.

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- 7.177 Other potential minor, temporary and indirect effects would be avoided and minimised through control of construction methods and design. The site would be monitored before and during construction to detect protected and/or notable species in close proximity to working areas.
- 7.178 Details for badger are given in Confidential Appendix 7.2.
- 7.179 Habitat losses are restricted to areas of low nature conservation value, including arable land, improved grassland and species-poor hedgerows. With the exception of losses of arable land to the proposed Hurrell Lane Gas Facility, these losses would be temporary and the habitats would be reinstated on completion of the pipeline installation.
- 7.180 New planting would offset minor losses to hedgerow habitats and would enhance the ecological value of the site for fauna, including farmland birds and bats.
- 7.181 It is concluded that there are no significant residual adverse effects on flora and fauna arising from the proposed Ryedale Gas Project and that the proposals do not conflict with relevant policies for nature conservation.

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