



**Ryedale Gas Project**  
**Species Surveys &**  
**Monitoring 2010**




August 2010  
Final

Issue No 2  
49306721 / DBRP0003

**Project Title:** Ryedale Gas Project  
**Report Title:** Species Surveys 2010  
**Project No:** 49306721  
**Report Ref:** DBRP0003  
**Status:** Final  
**Client Contact Name:** Lawrie Erasmus  
**Client Company Name:** Moorland Energy  
**Issued By:** URS Corporation Ltd.  
 Unit 5 Derwent Centre  
 Clarke Street  
 Derby DE1 2BU  
 United Kingdom  
 Tel: + 44 (0) 1332 364 159  
 Fax: + 44 (0) 1332 364159  
 www.urseurope.eu

NYMADA  
27/07/10

**Document Production / Approval Record**

Issue No:	Name	Signature	Date	Position
1				
Prepared by	Natasha Stentiford	Pp 	20.07.10	Ecologist
Checked by	Ryan Mellor		20.07.10	Associate Director
Approved by	Carlos Abrahams		20.07.10	Principal Ecologist

**Document Revision Record**

Issue No	Date	Details of Revisions
1	20.07.10	Original issue
2	19.08.10	Revised following comments and including Figure 1

**LIMITATION**

URS Corporation Limited (URS) has prepared this Report for the sole use of Moorland Energy in accordance with the Agreement under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us. This Report may not be relied upon by any other party without the prior and express written agreement of URS. Unless otherwise stated in this Report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from third parties has not been independently verified by URS, unless otherwise stated in the Report.

**COPYRIGHT**

© This Report is the copyright of URS Corporation Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.



**CONTENTS**

Section	Page No
<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1. Background .....	1
1.2. Scope .....	2
<b>2. METHODS</b> .....	<b>2</b>
2.1. Amphibian Survey .....	2
2.2. Bat Surveys .....	3
2.3. Vegetation Survey (Disused Railway Line) .....	4
<b>3. RESULTS</b> .....	<b>4</b>
3.1. Amphibian Survey .....	4
3.2. Bat Surveys .....	5
3.3. Vegetation Survey .....	8
3.4. Other Observations .....	8
<b>4. DISCUSSION &amp; RECOMMENDATIONS</b> .....	<b>9</b>
4.1. Amphibian (Great Crested Newt) Mitigation .....	9
4.2. Bats .....	12
4.3. Vegetation .....	13
4.4. Barn Owl.....	14
<b>5. SUMMARY</b> .....	<b>15</b>

**APPENDIX A - BOTANICAL SPECIES LIST (DISUSED RAILWAY)**

**FIGURES**

NYMADA  
 270321

**1. INTRODUCTION**

URS Corporation Ltd (URS) was commissioned by Moorland Energy to undertake vegetation, bat and great crested newt surveys around the proposed site of the Ryedale Gas Project near Thornton-le-Dale, North Yorkshire.

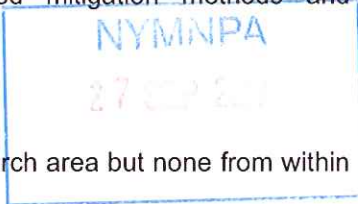
The surveys have been undertaken to supplement information within the Environmental Statement submitted in April 2010, so that the programme and approach to avoidance and mitigation of effects on flora and fauna could be developed in more detail, prior to commencement of the development.

**1.1. Background**

A Phase 1 Vegetation and Habitat survey and surveys for protected and notable species were carried out on the Site in 2009 and early 2010. The surveys were undertaken along the proposed pipeline route and the areas surrounding the Ebberston Well site and the proposed Hurrell Lane Gas Processing Facility, the contractor's compound, pipe lay down area and the hot tap and AGI connection compound, referred to collectively as the Development Zone.

A desk-based study was also undertaken within a search area of at least 1km of the Development Zone to identify designated sites and records of protected and notable species of flora and fauna that may be affected by the development proposals.

These investigations and the ecological impact assessment, which were reported within the Environmental Statement, identified areas with the potential to support certain protected species (including great crested newt *Triturus cristatus* and bat species) and confirmed that further survey and monitoring would be undertaken in 2010 in order to develop the proposed mitigation approach into defined mitigation methods and timescales.



**1.1.1. Great Crested Newt**

There are records of great crested newt from within the search area but none from within 1km of the Development Zone.

The previous survey and assessment work reported in the ES identified two ponds and a short section of ditch that could potentially support great crested newt: (i) Pond P1 to the north of the proposed Hurrell Lane facility at SE 846 822; (ii) a section of ditch to the north of the proposed Hurrell Lane facility at SE 851 821 and (iii) Pond P3 (a shallow depression) immediately adjacent to the proposed pipeline route through the forestry plantation at SE 881 861.

**1.1.2. Bats**

The ES reported no previous records for bat roosts in the immediate vicinity of the proposed development, but recognised the potential for bats to be present within the agricultural building off Ings Lane near the proposed Hurrell Lane facility, the small bridge

along the disused railway embankment to the north of the proposed Hurrell Lane facility and within the bat boxes present in the trees to the west of the proposed Hurrell Lane Facility. Although none of these features would be lost or damaged, the ES recognised the potential for noise and lighting effects on bats. It was also considered likely that the hedgerows and field margins within the Development Zone provide commuting and foraging areas for bats.

## 1.2. Scope

The scope of work undertaken between April and July 2010 included the following surveys:

### 1.2.1. Amphibian Survey

Amphibian surveys to determine presence or probable absence of great crested newt were undertaken at Pond P1 (Figure 1) during the period April-June 2010. Pond P3 and the drainage ditch were confirmed as dry during this period and therefore these were not surveyed further.

### 1.2.2. Bat Surveys

Transects routes around the proposed location of the Hurrell Lane Facility and temporary works areas were surveyed on several occasions in the period April-July 2010.

Emergence surveys using a combination of manual and automated recorders were carried out at (i) an agricultural building (barn) alongside the Ings' Lane; (ii) a bridge on the disused railway embankment to the north of the proposed facility and (iii) mature trees along Hurrell Lane (Figure 1).

### 1.2.3. Vegetation Survey

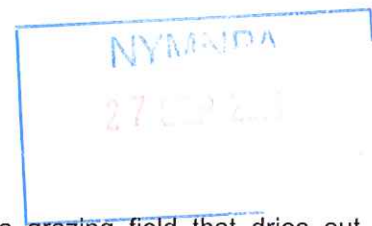
Vegetation along the disused railway line immediately to the north of the application area was surveyed.

## 2. METHODS

### 2.1. Amphibian Survey

Pond 1 (P1) is a small, cattle poached depression in a grazing field that dries out regularly. There is no aquatic or emergent vegetation present, but there are two hawthorn trees on the north-east edge of the pond.

Surveys to determine the presence/absence of great crested newt followed the methodology provided in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). Surveys were conducted on six separate occasions within the optimal survey season (mid-March 2010 to mid-June 2010), with three of the surveys within the period mid-April 2010 to mid-May 2010.



On each occasion, at least two different survey techniques were used (bottle trap, hand-net) to establish presence/absence and estimate breeding population size class. There was no vegetation to search for eggs and P1 was not suitable for torching due to landowner access restrictions with regard to a herd of bullocks present in the field. This is not considered to be a significant limitation as other techniques could be used effectively.

Fifteen bottle traps were used on each occasion during the surveys. Surveys took place on the 22<sup>nd</sup> April (Ditch survey only), 10<sup>th</sup> May, 12<sup>th</sup> May, 19<sup>th</sup> May, 24<sup>th</sup> May, 1<sup>st</sup> June and 9<sup>th</sup> June 2010.

## 2.2. Bat Surveys

Following a scoping survey and desk study in 2009, bat surveys were recommended for the area close to the Hurrell Lane Facility. 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 noctula*, Brandt's bat *Myotis brandtii*, Daubenton's bat *Myotis daubentonii* and brown log-eared bat *Plecotus auritus*.

The Hurrell Lane site is situated near to a farm building (Barn B1) at SE 845 817 and two trees (both ash *Fraxinus excelsior*) along Hurrell Lane to the west of the proposed facility were considered to have suitability to support roosting bats. There are also several bat boxes installed on trees alongside Hurrell Lane to the west of the proposed facility

### 2.2.1. Potential Roost Sites

The barn (B1) off Ings Lane comprises two sections. There is an older, stone-built section at the northern end, and a long barn with half brick, half metal walls and a metal roof to the south. The stone section has a tiled roof with a single central apex. There are some gaps in the mortar on the gable and the chimney in the western end is brick-built with large gaps in the mortar. The interior of the barn has a latted roof with good potential for roosting bats. To the east and adjacent to the barn is a large manure heap.

The bridge within the disused railway embankment is of concrete construction on brick pillars. Scrub encroachment blocks much of the approach to the structure. Opportunities for roosting bats are fairly limited but include some gaps between the pillars and the concrete deck.

The barn and the bridge were subject to a visual internal and external inspection to search for evidence of occupation by bats. This involved a search for droppings, feeding remains and evidence of bats at potential access points (staining and scratch marks).

Emergence surveys for bats were undertaken on the farm building on Ings Lane on 24<sup>th</sup> May, 1<sup>st</sup> June and 9<sup>th</sup> June 2010.

Emergence surveys at the bridge within the railway embankment were undertaken on 12<sup>th</sup> May, 24<sup>th</sup> May and 9<sup>th</sup> June 2010.

Emergence surveys on the trees located along Hurrell Lane were undertaken on 10<sup>th</sup> May and 1<sup>st</sup> July 2010.

Emergence surveys commenced approximately 30 minutes before dusk, and ended approximately 90 minutes after dusk. The surveys used manual detectors (Batbox Duet) with Edirol MP3 recorders in addition to Anabat SD1 recorders.

### 2.2.2. Bat Activity

Bat activity transect surveys were completed around the Hurrell Lane Facility on 24<sup>th</sup> May, and 1<sup>st</sup> June 2010.

Field boundaries around the site were walked on each occasion at a steady pace, as well as Ings Lane and Hurrell Lane. Each surveyor used a Batbox Duet and Edirol MP3 recorder. The transect surveys were augmented by the use of Anabat SD1 data recorders, which were placed adjacent to Barn B1 and by the bridge within the old railway embankment.

### 2.2.3. Survey Limitations

The visual survey could not inspect all potential roost locations of the bridge or the barn as there were small crevices within these structures that could not be accessed. This is not considered to be a significant limitation as the visual search was supplemented by the emergence surveys.

During the survey on 10<sup>th</sup> May 2010, temperatures dropped to 4<sup>o</sup>C during the survey. All other bat surveys were undertaken in suitable weather conditions (without heavy rain, or strong wind and with temperatures above 10<sup>o</sup>C).

## 2.3. Vegetation Survey (Disused Railway Line)

Following the scoping survey in 2009 it was noted that the vegetation on the disused railway line was of potential interest. A vegetation survey to generate a more detailed species list for the embankment vegetation was completed on the 9<sup>th</sup> June 2010.

### 2.3.1. Survey Limitations

There were no significant limitations to the vegetation survey.

## 3. RESULTS

### 3.1. Amphibian Survey

The six presence/absence surveys were conducted following the guidelines from Natural England. Great crested newts were found on five of six occasions in Pond P1. Results of the six surveys are given in Table 1 below.



**Table 1 Results of great crested newt surveys**

Date	Conditions	Results	
		Male (Adult)	Female (Adult)
10-May-10	Dry Still, 3°C – 4°C, 1/8 cloud	4	4
12-May-10	Dry, Still, 14°C, 8/8 cloud,	6	3
19-May-10	Dry, Still, 10 °C, 4/8 cloud	7	1
24-May-10	Dry, Still, 12°C, 8/8 cloud	0	7
01-Jun-10	Drizzle, Still, 13°C 8/8 cloud	5	7
09-Jun-10	Dry, Still, 14°C. 6/8% cloud	0	0

All great crested newts were adults. No eggs, larvae or juveniles were recorded.

The results indicate a 'small' population size-class within Pond P1 (English Nature, 2001). The Ryedale Biodiversity Action Plan reports that 'Although it is not currently threatened, great crested newt has probably declined in Ryedale due to the loss of old field ponds' and 'In Ryedale, great crested newts have been found in around 35 ponds in recent years, mainly in the west and centre of the district. Strongholds occur around Flaxton village, the Parish of Lillings Ambo and the outskirts of Pickering'.

As one of approximately 35 ponds, the small population at Pond P1 is likely to represent less than 5% of the district population. The population at Pond P1 is therefore assessed as being of importance at the Local level.



**3.2. Bat Surveys**

**3.2.1. Visual Inspection**

There were no visible signs of occupation by bats recorded by the visual inspection of the bridge or the barn off Ings Lane.

**3.2.2. Emergence and Activity Surveys**

The surveys recorded no evidence of roosting bats at the barn off Ings Lane or the disused railway line bridge. Confirmation of the presence or absence of tree roosts is usually more difficult to achieve and, although no significant activity around the trees or bat boxes was recorded that would indicate a large and/or regularly used roost site, it is possible that these features are used by small numbers of bats on an occasional basis.

Records of bats using the site boundaries for foraging and commuting were dominated by common pipistrelle using hedgerows along Hurrell Lane and Ings Lane as well as the disused railway. Infrequent records of brown long-eared bat, *Myotis* species and noctule bat were also made, though the surveys do not indicate that these species are using the site or immediate surrounds with great regularity or for prolonged periods of time.

The results confirm the assessment within the ES that the Development Zone and immediate environs is assessed as being of importance for bat populations at the Local level.

More detail of the bat survey results on each survey date is given below.

### 10 May 2010

Conditions: Dry, still, 3°C – 4°C, 1/8 cloud

Sunset: 20:52

Emergence survey undertaken around the bat boxes attached to trees on Hurrells Lane. One common pipistrelle was observed around the tree close to the dismantled railway line at 21.45.

### 12 May 2010

Conditions: Dry, Still, 14°C, 8/8 cloud,

Sunset: 20:55

On this evening two anabat recorders were left on site overnight immediately to the north and south of the railway bridge. Both recorded only one pass of common pipistrelle.

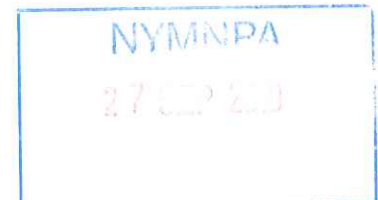
### 24 May 2010

Conditions: Still, 100% cloud, 12°C

Sunset: 21:15

An emergence survey was undertaken at the barn using a single surveyor with a manual detector and an automated Anabat SD1 detector. Two bats (species unknown) were seen to fly around the barn at 21.58. Two bats (common pipistrelle) returned at 22.11, foraging around the barn and a manure heap immediately to the south. The Anabat placed on the eastern side of the barn recorded common pipistrelles from 22.00 regularly until 00.35, then less frequently until 03.53 when the last common pipistrelle was recorded. A soprano pipistrelle was recorded at 00.09. A *Myotis* bat species was recorded at 01.19 and 02.57 and a noctule bat was recorded at 04.17.

Emergence survey at the south side of the bridge recorded 26 common pipistrelle passes along the hedgerow to the east between 22.03 and 23.20. Some were observed foraging along the hedgerow, but none were seen emerging from the bridge structure. Following



this period of activity, the Anabat placed at the bridge recorded only one common pipistrelle at 03.58.

Common pipistrelles were observed using all the linear features (hedgerows and disused railway line) on this transect walk to commute and forage. A *Myotis* bat was observed between the railway embankment and Ings Lane on Hurrell Lane.

#### 1 June 2010

Conditions: Drizzle, 13°C 100% cloud

Sunset: 21:26

The barn emergence survey was performed by two surveyors positioned at the east and west sides of the barn. The survey recorded no bats emerging from the barn but recorded common pipistrelle from 22.00 until 22.50 commuting along Ings Lane and foraging around the barn and adjacent manure heap.

The emergence survey at the bridge recorded little activity, with no bats emerging from the structure and a small number of common pipistrelle commuting along the railway embankment.

An Anabat placed at the bridge recorded common pipistrelle at 21.46, 21.50, 02.54, 03.23 and a soprano pipistrelle at 21.53. A noctule bat was recorded at 03.28.

Common pipistrelles were observed using the roadside and field boundary hedgerows on this transect for commuting and foraging.

#### 9 June 2010

Conditions: 100% cloud, 12°C

Sunset: 21:35

The barn emergence survey was performed by two surveyors positioned at the east and west sides of the barn. No bats were seen emerging from the barn however 3 noctule bats were recorded flying south over the barn at 21.45. Common pipistrelles were observed foraging around the barn and commuting along Ings Lane from 22.17 onwards.

An Anabat SD1 recorder was placed inside the barn and two were placed immediately to the north and south of the railway bridge.

The Anabat in the barn recorded nothing.

The Anabat placed on the north side of the bridge recorded noctule bats at 21.43 and 03.56, a soprano pipistrelle was recorded at 00.24. Common pipistrelle was recorded frequently between 22.16 – 23.39 and 01.40 – 03.42. The Anabat at the south side of the bridge recorded common pipistrelle infrequently between 22.51 and 03.34.

#### 1 July 2010



Conditions: occasional drizzle, 13°C 100% cloud

Sunset: 21:40

The emergence survey on the trees along Hurrell Lane recorded no bats emerging from potential tree roosts. Common pipistrelle was recorded around a tree near the junction of Hurrell Lane and Ings Lane between 22.28 and 23.22. A *Myotis* bat was observed in a similar location at 23.05.

Several bats were noted commuting and foraging along Hurrell and Ings Lane. Two long-eared bats (probable brown long-eared) were seen foraging around the tree and along the hedgerow on both sides of the road to the west of the proposed Hurrell Lane facility. There was also feeding by common and soprano pipistrelles between 22.06 and 23.18.

One Anabat was placed in the barn, and another was placed near the bat boxes on Hurrell Lane.

The Anabat in the barn recorded nothing.

The Anabat placed near the bat boxes on the trees recorded common pipistrelle infrequently between 22.29 and 03.23. A soprano pipistrelle was recorded at 22.43.

### 3.3. Vegetation Survey

A full species list from the vegetation survey on the railway embankment is given in Appendix A. The survey recorded a range of grasses, forbs and other species that are relatively more diverse than much of the surrounding land and indicate less improved and agriculturally managed conditions.

As well as the botanical interest, the flora is likely to provide good habitat structure, feeding and shelter opportunities for invertebrates, birds, and small mammals, including bats.

Because of these attributes, the habitats along the disused railway line to the north of the proposed Hurrell Lane facility is currently assessed as being of Local importance for nature conservation.

However, it is likely that without management, this vegetation would eventually succeed to scrub and woodland.

### 3.4. Other Observations

Barn owl was confirmed to be using the barn building immediately to the south of Ings Lane as a roost and potentially a nesting site, an individual or pair being seen on three occasions during bat surveys. During the initial internal survey of the barn a barn owl nesting box was found, located on the rafters in the king-post roof. A single owl was seen leaving the barn, through the southern, corrugated metal gable and perching on the mature oak tree to the south west. Shortly afterwards the bird was seen flying east along the railway embankment.

The birds were not observed to be showing nesting or provisioning behaviour during survey visits, however given the variation in barn owl breeding times (Natural England & Barn Owl Trust, 2009) and the apparent site fidelity it is likely that the barn has been or will be used for breeding in 2010. Further monitoring of the barn is proposed prior to construction to confirm breeding status in 2011.

#### 4. DISCUSSION & RECOMMENDATIONS

##### 4.1. Amphibian (Great Crested Newt) Mitigation

###### 4.1.1. Legal Status

The great crested newt is protected under the provision of the Conservation of Habitats and Species Regulations 2010 and under schedule 5 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to deliberately disturb, kill, injure, or take a great crested newt or its eggs, or to internationally or recklessly damage, destroy or obstruct a breeding place or place of shelter.

###### 4.1.2. Summary of Assessment within Environmental Assessment

The Environmental Statement reported as follows:

*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.*

###### 4.1.3. Assessment, Mitigation Methodologies & Timescales

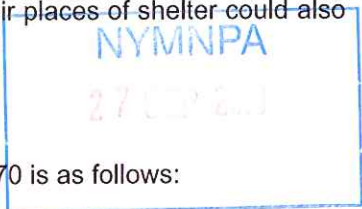
###### 4.1.3.1. Assessment

Pond P1 is approximately 200m to the north of the proposed Hurrell Lane Facility at its closest point, and approximately 350m from the proposed pipeline route to the east. Though the most important terrestrial habitats for great crested newt are often typically within 50m of a breeding pond (immediate habitat), great crested newts may range 500m or more from a breeding pond, so could be present within the Hurrell Lane Facility area and also the pipeline route. Considering the intensively managed agricultural land around the pond P1, It is likely that great crested newt use hedgerows and the wooded plantation and grassland of the dismantled railway to the south, as the arable and pasture fields currently represent relatively low quality habitat for great crested newt.

There would be no direct adverse effects on Pond P1. There is a possibility that great crested newts are present within hedgerows and on the adjacent disused railway line bordering the proposed Hurrell Lane facility. There is also the possibility (albeit lower risk) that great crested newts are present within the arable fields themselves. Consequently, there is a risk of disturbance and harm to great crested newts from construction and operational activities, though the habitat quality and distance from Pond P1 mean that such effects are likely to affect only small numbers of great crest newt.

Operational impacts are not expected to be significant as traffic levels are anticipated to be low and site operational plant presents low risk of harm to great crested newt, as the design shall minimise the risk of newts entering operational plant areas. Site surface water drainage will be effected through 'over-the-edge' drainage (e.g. into ditches and swales), rather than gullies and pipes.

Without mitigation, these adverse effects are assessed as significant at the local level. Actions that result in harm to great crested newts and/or their places of shelter could also constitute a legal offence.



**4.1.3.2. Mitigation**

The anticipated development phasing to the south of the A170 is as follows:

Time Period	Activity
12/2011 – 01/2012	Construction of access road from A170 to the Hurrell Lane Facility.
02/2012 – 03/2012	Establish Contractors Compound at the Hurrell Lane Facility.
03/2012 – 06/2012	Site preparation for Hurrell Lane Facility.
04/2010 – 06/2012	Preparation of M&E compound to west of Hurrell Gas Facility.
06/2012 – 11/2012	Construction of AGIs to south of Ings Lane.

Potential impacts on great crested newt may therefore arise in December 2011. In order to avoid harm, exclusion fencing shall be erected around the construction areas in spring/summer 2011 to allow sufficient time to detect and clear great crested newt from the construction areas prior to commencement.

The monitoring and mitigation outlined below would be developed in accordance with 'Great Crested Newt Mitigation Guidelines (English Nature, 2001) as part of a licence application to Natural England to permit the works that may cause disturbance or harm to great crested newt. The detailed methodology and programme would be defined in the licence application and the works controlled by licence conditions to maintain the local population at favourable conservation status.

#### Terrestrial survey along development boundaries

A search of terrestrial habitats using drift fencing and pitfall traps shall be undertaken in spring (Feb-April) 2011 to detect great crested newts (if any) moving from the proposed development areas toward Pond P1 during the breeding season. This will particularly focus on the boundary of the proposed facility and the dished railway line. The survey will allow further assessment of the risk of encountering animals in the terrestrial phase within the construction areas, support the level of capture effort required to clear the site of great crested newt and confirm the requirements for longer term amphibian fencing, which is not currently anticipated to be necessary.

#### Exclusion of great crested newt from construction areas

Amphibian exclusion fencing would be erected around the construction areas up to 500m from Pond P1. This would include the pipeline route and access road from the A170 and the Hurrell Lane facility and temporary storage areas and contractors compound. The fence would be installed during summer 2011 in advance of commencement of construction later that year.

#### Clearance of great crested newt from construction areas

The areas enclosed by amphibian fencing would be searched for great crested newt using a combination of pitfall traps and artificial refugia searches over a minimum 30 trapping-day period in summer/autumn 2011 to remove great crested newts from the construction areas for the access road, pipeline, Hurrell Lane Facility, AGIs and temporary working areas.

It is likely that the habitats along the dismantled railway line would be used as a receptor area for animals captured within the Hurrell Lane Facility area.

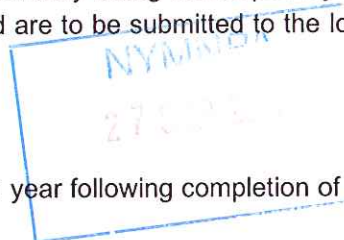
#### Provision of habitat compensation and enhancement

The detailed landscape proposals will include creation of grassland, scrub and woodland habitats on existing arable land that within 2-5 years are expected to increase habitat quality and capacity for great crested newt to the south of the railway line and within 500m of Pond P1. These habitat creation details are currently being developed by the applicant in consultation with Yorkshire Wildlife Trust and are to be submitted to the local authority.

#### Monitoring

Monitoring of Pond P1 will be undertaken annually until 1 year following completion of the Hurrell Lane Facility (including landscaping).

The removal of exclusion fencing at the completion of construction within 500m of Pond P1 will be supervised by an appropriately experienced ecologist to remove any newts at the base of the fence.



Long-term exclusion fencing is not considered necessary as no operational impacts are anticipated. This requirement will be reviewed as the detailed design of the facility is developed.

## 4.2. Bats

### 4.2.1. Legal Status

UK species of bat are protected under the provision of the Conservation of Habitats and Species Regulations 2010 and under schedule 5 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to deliberately disturb, kill, injure, or take any bat, or to internationally or recklessly damage, destroy or obstruct a breeding place or place of shelter.

### 4.2.2. Summary of Assessment within Environmental Assessment

The ES recognised the potential for indirect impact on bats that may be using one or more of the bat boxes or mature trees along Hurrell Lane from noise and use of lighting during construction. However, the nearest lighting for the main construction areas are estimated to be 50m or more from these potential roost sites and would be shielded, directional lighting.

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 the Local Authority, specifying the 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 light spill, and would be designed with full cut-off and would be directionally shielded so that artificial light is controlled and substantially confined to the object(s) intended to be illuminated. 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.

Operational lighting at the Hurrell Lane Facility would be limited to the minimum necessary 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.

Lights would be fitted with shields and cowls to minimise spill from the facility. No high-level lighting is anticipated. Light-spill is not therefore anticipated to extend a significant distance beyond the 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 and the status of local bat populations.

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.

#### 4.2.3. Mitigation & Monitoring

No mitigation measures additional to those described above are considered necessary for bats.

Construction work for the Hurrell Lane Facility (including the access road from the A170) is not anticipated to commence until December 2011. During summer 2011 and prior to construction commencing, potential roost sites around the proposed Hurrell Lane facility will be surveyed again to assess the likelihood of roosting bats being present in these features. Surveys shall be undertaken in accordance with published guidelines (Bat Conservation Trust, 2007).

Construction work for the pipeline is not anticipated to commence until March 2012. Habitats and features within and alongside the pipeline route will be reviewed in spring/summer 2012 to detect any changes in habitat quality or roost suitability (trees) that could result in effects on bats. Such changes are considered unlikely given the nature of the existing habitats and land management.

The monitoring of activity at the Hurrell Lane Facility and immediate environs will comprise surveys on four occasions (at least one month apart) in the period May-September/October 2011 to provide a pre-construction baseline against which activity in the construction and operational periods may be compared. The work will include survey of bat activity along the disused railway, Hurrell lane and Ings lane. This will be repeated during construction and then for 2 years following completion of construction of the Gas Facility to monitor operational effects (if any).

If monitoring detects changes in activity that can be related to lighting or noise, then consideration will be given to increasing the level of screening or amending working methodologies to maintain secure, darkened corridors and other habitat areas around the periphery of the proposed Hurrell Lane Facility.

#### 4.3. Vegetation

##### 4.3.1. Recommendations for Landscape Design & Management

The grassland and scrub vegetation along the disused railway line will be managed by the applicant to promote maintenance of the existing vegetation sward and prevent succession and reduction in biodiversity.

NYMADA  
27/11/11

Planting alongside the southern margins of the disused railway line will comprise grassland and lower growing shrubs and trees (e.g. hawthorn, blackthorn, hazel) to avoid excessive shading of the vegetation on the disused railway line.

Planting elsewhere around the margins of the Hurrell Lane Facility will comprise native species and a grassland seed mix of local provenance.

The applicant will work with Yorkshire Wildlife Trust to develop plans for the establishment and management of a wildlife conservation area within the application area at the Hurrell Lane Facility. Management objectives will be integrated with the disused railway line. This will represent a net increase in ecological value of the Hurrell Lane site, which currently comprises intensive arable cropping, and appropriate design will contribute to relevant Local Biodiversity Action Plan targets.

Design and management objectives and management prescriptions will be included within a landscape and ecology management plan for the site, which will be implemented by the operators of the proposed facility.

#### 4.4. Barn Owl

The barn itself is not directly affected by the development proposals so there will be no direct disturbance (at the nest site) or risk of harm to barn owl. Although the development site is in close proximity, the construction areas are estimated at 20m or more from the barn on the other side of Ings Lane, with land between Ings Lane and the construction area being used for screen planting purposes, which will provide a buffer from disturbance effects. Ings lane will not be used for construction traffic, which will enter the site from A170 to the north.

As described above, light spillage into adjacent habitats is not expected to be significant: no night-working is proposed during construction and operational lighting will be the minimum to meet safety requirements.

The barn is surrounded by arable fields, which are likely to see regular, sometimes intensive human and agricultural machine activity that the birds habituate to. It is unlikely then that the barn owls will be subject to a significant increase in disturbance by operational activity on the site once construction has been completed. Increased activity related to construction is also expected cause little disturbance although changes to intensity of activity (including increase human presence) in the short to medium term do have some potential to disturb the birds.

Although the birds are likely to be habituated to human and mechanical activity in close proximity to the barn it is recommended that screening or hoarding is erected along the southern boundary of the proposed Hurrell lane facility to screen the barn, and the owls within it, and reduce the visual deterrent effect of construction.

In addition, it is recommended that alternative nest boxes be installed in two secure and undisturbed locations within 200m of the barn. Suitable locations exist on trees in the immediate locality. These should be installed during 2010 or 2011 in advance of the 2012 nesting season.

The barn and next boxes will be monitored during 2011 and during the construction period to assess the success of the avoidance and mitigation measures.

The location of the proposed installation and construction compound are within the hedgerow boundaries of arable fields and so the availability of barn owl hunting habitat will not be reduced during construction or upon completion of the installation. Suitable hunting habitat is likely to be increased following construction as the field in which the compound will be located will be returned to rough grassland.

## 5. SUMMARY

The mitigation and monitoring measures described above will avoid or reduce effects on flora and fauna so that the conservation status of protected fauna populations (bats, barn owl and great crested newt) is maintained in the locality, and the nature conservation value of the vegetation and habitats within and adjacent to the proposed Hurrell Lane Facility are maintained and enhanced.

NYM/10/10  
27/08/10

## **Appendix A - Botanical Species List (Disused Railway)**

NYMINDA  
27/02/11

**Table 2 Results of vegetation survey on railway embankment**

Common Name	Scientific Name
<b>Grasses/Sedges/Horsetails</b>	
Common bent	<i>Agrostis capillaris</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
False oat grass	<i>Arrhenatherum elatius</i>
Hairy sedge	<i>Carex hirta</i>
Cocksfoot	<i>Dactylis glomerata</i>
Crested dogs tail	<i>Cynosurus cristatus</i>
Tufted hair grass	<i>Deschampsia cespitosa</i>
Field horsetail	<i>Equisetum arvense</i>
Red fescue	<i>Festuca rubra</i>
Tall fescue	<i>Festuca arundinacea</i>
Yorkshire fog	<i>Holcus lanatus</i>
Perennial rye grass	<i>Lolium perenne</i>
Rough meadow grass	<i>Poa trivialis</i>
Smooth meadow grass	<i>Poa pratensis</i>
Yellow oat grass	<i>Trisetum flavescens</i>
<b>Other plants</b>	
Yarrow	<i>Achillea millefolium</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Kidney Vetch	<i>Anthyllis vulneraria</i>
Pignut	<i>Conopodium majus</i>
Black knapweed	<i>Centaurea nigra</i>
Common mouse ear	<i>Cerastium fontanum</i>
Creeping thistle	<i>Cirsium arvense</i>
Spear thistle	<i>Cirsium vulgare</i>
Burdock	<i>Arctium minus</i>
Hemlock	<i>Conium maculatum</i>
Hawthorn	<i>Craetagus monogyna</i>
Crosswort	<i>Cruciata laevipes</i>
Hogweed	<i>Heracleum sphondylium</i>
Inperforate St John's wort	<i>Hypercium maculatum</i>
Perforate St John's wort	<i>Hypercium perforatum</i>
Ash	<i>Fraxinus excelsior</i>
Cleavers	<i>Galium aparine</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Birds foot trefoil	<i>Lotus corniculatus</i>
Black medick	<i>Medicago lupulina</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Cowslip	<i>Primula veris</i>

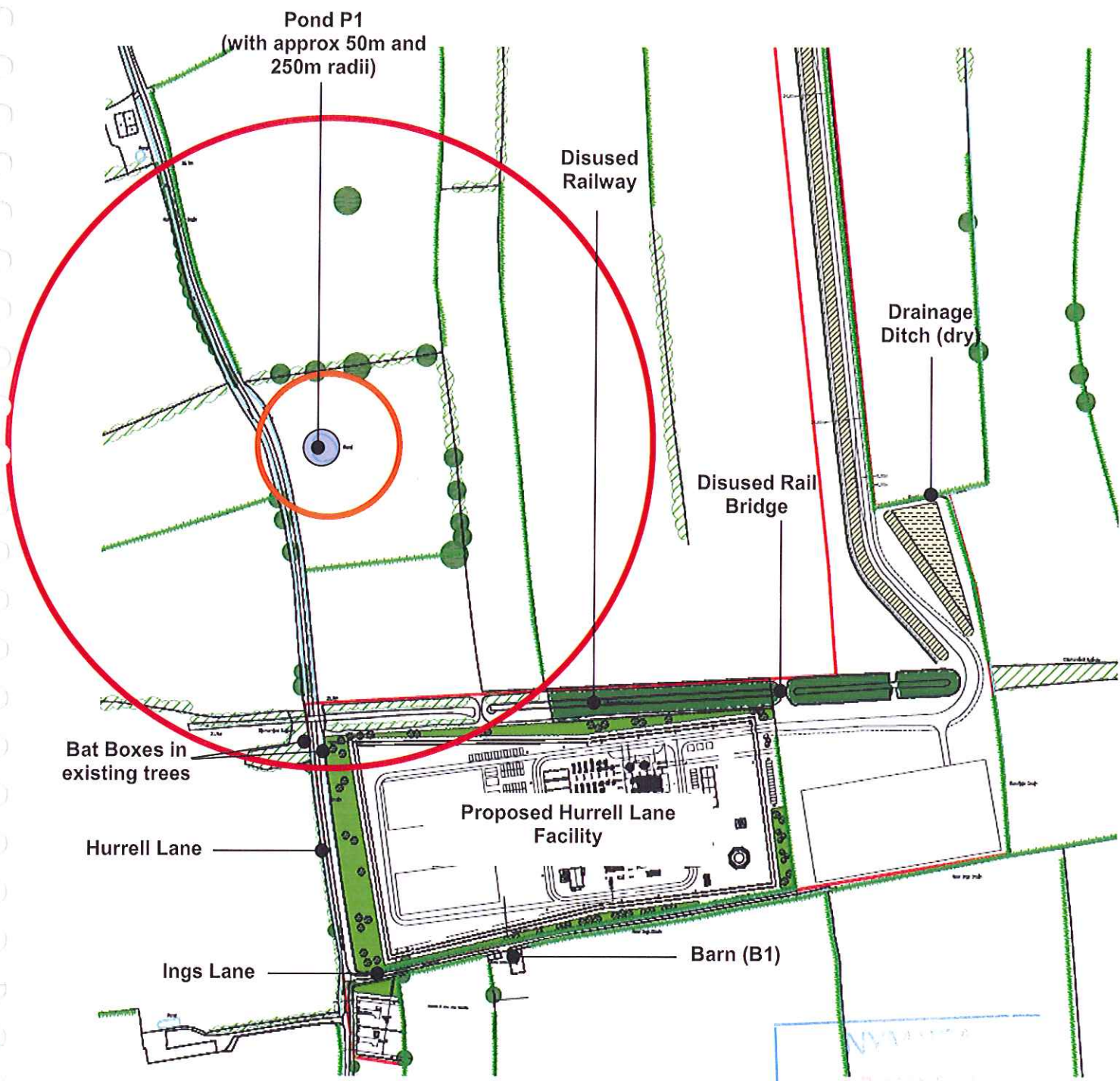
NYMNPA  
 27/02/10









Common Name	Scientific Name
Selfheal	<i>Prunella vulgaris</i>
Blackthorn	<i>Prunus spinosa</i>
Oak	<i>Quercus ribur</i>
Meadow buttercup	<i>Ranunculus acris</i>
Creeping buttercup	<i>Ranunculus repens</i>
Yellow rattle	<i>Rhinanthus minor</i>
Field rose	<i>Rosa arvensis</i>
Dog rose	<i>Rosa canina</i>
Bramble	<i>Rubus fruticosus</i>
Common sorrel	<i>Rumex acetosa</i>
Broadleaved dock	<i>Rumex obtusifolius</i>
Elder	<i>Sambucus nigra</i>
Goat willow	<i>Salix caprea</i>
Red campion	<i>Silene dioica</i>
Hedge mustard	<i>Sisymbrium officinale</i>
Goat's beard	<i>Tragapogon pratensis</i>
Lesser trefoil	<i>Trifolium dubium</i>
Red clover	<i>Trifolium pratense</i>
White clover	<i>Trifolium repens</i>
Coltsfoot	<i>Tussilago farfara</i>
Germander speedwell	<i>Veronica chamaedrys</i>
Stinging nettle	<i>Urtica dioica</i>
Tufted vetch	<i>Vicia cracca</i>
Hairy tare	<i>Vicia hirsuta</i>

NYMNP  
27/2/20

# Figures





- |   |   |   |                            |
|---|---|---|----------------------------|
|  | Site Boundary                           |  | Proposed Woodland Planting |
|  | Existing Woodland, Copes and Tree Belts |  | Proposed Standard Trees    |
|  | Existing Substantial Hedgerows          |  | Proposed Hedgerow Trees    |
|  | Existing Trimmed Hedgerows              |  | Proposed Hedgerow          |

**Ryedale Gas Project**

**Figure 1**

**Ecological Surveys and Monitoring 2010**

Drawn: RM  
Date: 19.08.10  
Scale: Do not Scale