URS

Ebberston Moor A

Ecological Assessment

Ref: 47063256

January 2013

Prepared for:
Viking UK Gas Limited

UNITED KINGDOM & IRELAND

Rev	Date	Details	Prepared by	Checked by	Approved by
1	Jan 2013	FINAL	Jo Atkinson Senior Ecologist	David Broughton Senior Ecologist	David Broughton Senior Ecologist

URS
West One
Wellington Street
Leeds
LS1 1BA

Limitations

URS Infrastructure & Environment UK Limited ("URS") has prepared this Report for the sole use of Viking UK Gas Limited ("Client") 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 URS. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of URS.

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 and that such information is accurate. Information obtained by URS has not been independently verified by URS, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by URS in providing its services are outlined in this Report. The work described in this Report was undertaken between November 2012 and January 2013 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

URS disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to URS' attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. URS specifically does not guarantee or warrant any estimate or projections contained in this Report.

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 changes.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

Copyright

TABLE OF CONTENTS

1. INTRODUCTION

URS Infrastructure and Environment UK Limited (URS) was commissioned by Petroleum Safety Services Limited on behalf of Viking UK Gas Ltd to undertake a Phase 1 Habitat survey of a wellsite in Dalby Forest, North Yorkshire (SE 899 896) referred to as Ebberston Moor 1 wellsite. The wellsite was previously in temporary operation for the appraisal drilling of gas, before the wells were suspended following successful flow tests in 2006/07.. It is proposed to drill up to two new appraisal wells and a sidetrack of the existing well at Ebberston Moor 1 wellsite, which is now referred to as Ebberston Moor A wellsite ('the site').

The surveys were conducted to record and map habitat types and vegetation (including any invasive plant species) present on the site, to appraise the habitats for their potential to support populations of protected and/or notable species and to assess potential effects on flora and fauna arising from the reinstatement of the site for gas production.

The findings of the survey are reported here, with advice on the ecological constraints present along with recommendations, as appropriate, for further action.

2. SCOPE AND METHODOLOGIES

2.1 Scope

The scope of ecological investigations undertaken for the appraisal was as follows:

- Desk-based study including consultation with local ecological records centre(s) and interrogation of online databases to identify statutory and non-statutory designated sites of nature conservation importance and records of protected and/or notable species; and
- Extended Phase 1 Habitat survey to record the nature and extent of vegetation and habitats within and adjacent to the site.

2.2 Desk-based Study

A desk study was undertaken to identify any existing records of protected species and any statutory or non-statutory sites within a 2 km radius of the site. The following organisations and data sources were contacted/ accessed during the desk study (Table 2.1).

Table 2.1: List of Desk-based Study Consultees

Consultee	Information sought
North and East Yorkshire Ecological Data Centre (NEYEDC)	• Non-statutory designated sites of nature conservation • Records of protected/ notable species
Multi-Agency Geographic Information for the Countryside (MAGIC) website	• Statutory designated sites of nature conservation importance • Ancient woodland
Forestry Commission website	• Local information and anecdotal evidence
Scarborough Naturalists' Society Website	• Local information and anecdotal evidence

Consultee	Information sought
Scarborough Bird Club	• Local bird records and anecdotal evidence

The coverage of biological records varies in different areas and between different taxonomic groups, depending on the type and extent of previous surveys. Where they are available, historic records provide a useful indication of species or habitats that may be found in the study area and can help to put new survey data into local context. The records supplied provide a supplement to the site visit undertaken on 27th November 2012.

2.3 Field Survey Methodologies

2.3.1 *Extended Phase 1 Habitat Survey*

An extended Phase 1 Habitat survey was undertaken by an ecologist from URS on 27th November 2012 to record vegetation and habitats present within the Site. Habitats outside this area were noted but not surveyed in detail. Habitat types were recorded in accordance with published guidelines for Phase 1 Habitat survey (Joint Nature Conservation Committee, 2010).

The habitats within the application area and surrounding land were appraised for their potential to support other notable species or assemblages that could be sensitive to the development proposals, in accordance with 'Guidelines for Baseline Ecological Assessment' (Institute for Environmental Assessment, 1995).

The potential for the site to support protected species was assessed and where practical presence/absence was determined through survey. The species most likely to occur was badger and therefore a survey to record evidence of badger on the site and within 100m was undertaken (where access permitted) in accordance with published methods (Harris, Creswell and Jefferies, 1989)

Trees and other features were assessed for their suitability to support roosting bats and graded/categorised in accordance with published methods (Bat Conservation Trust, 2012).

2.3.2 *Field Survey Limitations*

The extended Phase 1 Habitat survey was undertaken outwith the recommended survey period, which is April – September. However, given that the site comprised an existing wellsite dominated by hardstanding, the site is unlikely to support a high diversity of plant species. Therefore there are no factors that are considered to be limitations to the objectives of the survey.

3. ASSESSMENT METHODOLOGY

The assessment evaluates sites, habitats, species, and other ecological features using an approach based on the 'Guidelines for Ecological Impact Assessment' (Institute Ecological Environmental Management, 2006), classifying potential ecological receptors into a hierarchy of international, national, regional or local ecological value. Key areas and/or species of ecological value within the site are identified and the main factors contributing to their current ecological value are described.

The assessment takes account of the main items of current relevant wildlife legislation and national guidance e.g. the National Planning Policy Framework (NPPF) as well as non-statutory strategies such as national and local biodiversity action plans, which provide both national and local context to nature conservation aims.

The methodology for assessment of the nature conservation value of ecological features affected by development (ecological receptors) is adapted from the Institute of Ecology & Environmental Management (IEEM) guidelines for ecological impact assessment (IEEM, 2006).

The 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;
- District (or Unitary Authority, City, or Borough);
- Local or Parish and/or;
- Within immediate zone of influence[1] only.

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

- Confidence in predictions (level of uncertainty);
- Extent;
- Magnitude;
- Duration;
- Reversibility
- Timing and frequency; and

[1] *The zone of influence for a development is often difficult to define, but for the purposes of this study, the maximum zone of influence within which potential effects on flora and fauna may be reasonable anticipated is taken as those areas within 250m of the proposed development boundary. Due to the nature of the development proposals, significant effects on flora and fauna arising from the proposed development activities beyond 250m are considered unlikely to occur.*

- Cumulative effects.

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.

A summary of relevant nature conservation legislation and planning policy is provided as Appendix B.

4. DESK-BASED STUDY RESULTS

4.1 Statutory Designated Sites

The site lies within the North York Moors National Park. There is one statutory designated Sites of Special Scientific Interest (SSSI) within 2 km of the site boundary:

- Troutsdale and Rosekirk Dale Fens SSSI - approximately 1.6 km south-east of the site boundary. Designated for its spring and flush fen habitats on Corallian limestone, which is a nationally rare habitat type and supports a range of flora and fauna.

4.2 Non-statutory Designated Sites

There are no non-statutory designated Sites of Importance for Nature Conservation (SINC) within 2 km of the proposed development site.

4.3 Protected and/ or Notable Species of Flora and Fauna

4.3.1 *Breeding Birds*

The NEYEDC holds numerous bird records from within the North York Moors National Park including the Schedule 1 species nightjar (*Caprimulgus europaeus*). Surveys undertaken by members of Scarborough Bird Club indicated that nightjar is present and likely to be breeding in the clear felled forestry plantation around Jingleby Thorn approximately 240 m south-west of the proposed wellsite.

The Forestry Commission holds recent breeding records of the Schedule 1 species nightjar and goshawk (*Accipiter gentilis*) within the study area, although there are no records of either species within the site boundary.

4.3.2 *Bats*

There are numerous records of bats within the study area, the majority of which have been provided by the Forestry Commission following surveys of bat boxes erected within the forestry estate. Bat species recorded roosting in Forestry Commission bat boxes in 2001 include brown long-eared bat (*Plecotus auritus*), common pipistrelle bat (*Pipistrellus pipistrellus*) and noctule bat (*Nyctalus noctula*). There are also records of Natterer's bat (*Myotis nattereri*) and numerous records of unidentified pipistrelle (*Pipistrellus* sp.) in the study area.

4.3.3 *Badgers*

There are records of badger within the study area, approximately 1 km from the site, although the exact location of this record is not disclosed in this report to prevent illegal persecution.

4.3.4 *Amphibians*

Great crested newts (*Triturus cristatus*) are listed within the North York Moors Biodiversity Action Plan (BAP), although the NEYEDC holds no records of this species for the study area.

There are no ponds within the site boundary or within 500 m of the site boundary and on this basis it is reasonable to conclude that the species is not likely to be present within the site. No further consideration is given to great crested newts in this report.

4.3.5 *Reptiles*

NEYEDC holds records of common lizard (*Zootoca vivipara*), adder (*Vipera berus*) and slow worm (*Anguis fragilis*) within the study area.

4.3.6 *Other Protected and Notable Species*

The desk-study indicated that there are records of otter (*Lutra lutra*), water vole (*Arvicola amphibius*) and white-clawed crayfish (*Austropotamobius pallipes*) on the River Derwent. There is no suitable habitat for these species within the site boundary or within the zone of influence of the proposed development and therefore these species are not considered further in this assessment.

5. FIELD SURVEY RESULTS

5.1 Phase 1 Habitat Survey

Please refer to Figure 2 for a map of the habitats present and target notes (TN). Photographs are provided in Appendix A.

The site is accessed via an existing road off the A170 leading to South Moor Farm. The site comprises the fenced compound of an existing wellsite and is surrounded on its northern, western and eastern sides by mature forestry plantation. An operational Gas Valve Compound (GVC) operated by National Grid Network (NGN) lies adjacent to the northern boundary of the site although it is physically separated from the site by a narrow band of trees. A substantial area of clear felled forestry is located approximately 240 m to the south-west of the site. The eastern boundary of the site is defined by a narrow band of mature trees, beyond which lies the access road and improved grass pasture.

Mature commercial forestry plantation surrounds the majority of the site and is dominated by even-aged trees dominated by spruce (*Picea* sp.) (TN3). There are some scattered deciduous broad-leaved specimens along the roadside comprising semi-mature silver birch (*Betula pendula*), pedunculate oak (*Quercus robur*) and downy birch (*Betula pubescens*).

A narrow band of young and semi-mature trees separates the wellsite compound from the access road and NGN GVC on the northern and eastern perimeters, comprising silver birch,

cherry (*Prunus* sp.) and sycamore (*Acer pseudoplantanus*) (TN4). Some of the younger specimens remain in their rabbit guards.

The wellsite itself is flat bare ground comprising crushed hardcore laid over a geotextile membrane and bentonite mat, with a bentonite mat lined drainage ditch to drain surface water run-off (TN2). The topsoil has been removed from the wellsite and is stored in a uniform bund around the southern and western perimeter of the site, between the fence and the drainage ditch (TN1). The topsoil bund has become naturally re-colonised with rank grassland and tall ruderal vegetation. The dominant species is cock's-foot (*Dactylis glomerata*) with cow parsley (*Anthriscus sylvestris*), broad-leaved dock (*Rumex obtusifolius*), rosebay willowherb (*Chamerion angustifolium*), hogweed (*Heracleum sphondylium*), Timothy (*Phleum pratense*), creeping buttercup (*Ranunculus repens*), common knapweed (*Centaurea nigra*) with some low-growing scattered bramble (*Rubus fruticosus*) scrub.

A short section of newly planted hedgerow (all specimens still in rabbit guards) is present in the southern part of the site, adjacent to an internal fence.

5.2 Fauna

5.2.1 *Breeding Birds*

There is no suitable habitat for breeding birds within the site boundary. The open gravelled area associated with the main wellsite is too small and enclosed by mature trees and fencing to support ground nesting species. The bramble scrub colonising the topsoil bund is insufficiently dense to provide suitable habitat for nesting birds. Forestry plantation surrounding the site may be used by a range of common species such as blackbird (*Turdus merula*), robin (*Erithacus rubecula*) and magpie (*Pica pica*), as well as species that prefer nesting in coniferous woodland such as coal tit (*Periparus ater*) and goldcrest (*Regulus regulus*).

Forestry Commission records indicate the presence of nesting goshawk and nightjar in the wider local area. The goshawk nest sites are monitored annually by volunteers on behalf of the Forestry Commission. There are no recorded goshawk nest sites within the site boundary and none within the potential zone of influence of the wellsite, which is considered to be within *c.* 400 m based on Forestry Commission guidance (Petty, 1996).

There is no suitable nesting habitat for nightjar within the site boundary as this species nests in clear felled areas of the forestry plantation which remain suitable until re-growth is around 15 years old (Birdguides 2006). There are no confirmed nesting records of nightjar within the study area, although Scarborough Bird Club has recorded nightjar in June and July 2011 in the clear felled forestry plantation at Jingleby Thorn approximately 240 m south-west of the site, and it is assumed that this indicates breeding. It is likely that this species' distribution varies in response to forestry felling operations and the area of clear felled woodland at Jingleby Thorn does provide optimum nesting habitat for nightjar.

5.2.2 *Bats*

Roosting

The mature conifer trees surrounding the wellsite do not support any features such as cracks, holes and fissures within their trunks that may provide potential roosting habitat for bats. There are no features potentially suitable for roosting bats within the disused wellsite

boundary. On this basis, it is reasonable to conclude that roosting bats are not present within the site boundary and no further surveys are recommended.

Foraging

The woodland edge habitat surrounding the wellsite may offer some potential foraging habitat for foraging/ commuting bats. However, overall foraging habitat quality is low and bats are more likely to be using local broad-leaved woodland areas within the plantation as key foraging habitats and for roosting. The site represents a small area of the total resource available for bats in the local area and is assessed as being of value at the site level only for bats. Given the limited impacts of the proposed development, no further surveys for foraging bats are recommended.

5.2.4 *Reptiles*

Suitable potential habitat for reptiles is limited to the vegetated topsoil bunds around the southern and eastern perimeter. The mosaic of rough grassland and encroaching bramble scrub provides potentially suitable basking and foraging opportunities for the species identified as present in the wider local area i.e. slow worm, adder and common lizard.

The substantial area of clear felled forestry plantation to the south-west of the site (outwith the red line development boundary) provides suitable potential habitat for reptiles and contributes to the mosaic of habitats suitable for reptiles in the North York Moors National Park.

6. DEVELOPMENT DESCRIPTION

Planning permission is sought for a temporary development to undertake the drilling of a sidetrack from the existing Ebberston Moor 1 well and drill up to two additional appraisal boreholes followed by a period of short-term testing for gas. The new wellsite will be referred to as Ebberston Moor A. To facilitate the drilling of up to two additional appraisal boreholes, two new drilling cellars will be constructed within the wellsite, In summary this will consist of four principle phases:

- Cellar construction;
- Drilling;
- Extended well test; and
- Restoration and aftercare.

The purpose of the appraisal wells is to help determine the commercial potential of the Ebberston Moor gas field. The proposed development will entail:

- Construction of additional drilling cellars on the existing Ebberston Moor 1 wellsite to enable further appraisal of the site for gas; and
- drilling of up to two appraisal wells and one sidetrack.

Development is planned to take place in four phases:

1. Construction of additional drilling cellars and setting of a conductor (estimated 5 weeks);
2. The mobilisation and placement of drilling equipment at the site leading to the borehole (estimated 7 - 12 weeks dependant on results and preliminary testing);
3. The carrying out of an extended well test and evaluation programme (estimated up to 90 days); and
4. Restoration (estimated 4 weeks)

7. POTENTIAL EFFECTS ON FLORA AND FAUNA

7.1 Construction Effects

7.1.1 *Introduction*

Potential construction effects associated with the proposed wellsite are minimal given that the boreholes will be drilled within the boundary of the existing Ebberston Moor 1 wellsite. There is therefore no requirement for any vegetation clearance associated with the preparation of the site prior to operational drilling works, other than the installation of site office and welfare cabins.

7.1.2 *Statutory Designated Sites*

The proposed wellsite is located within the North York Moors National Park. The area adjacent to the site is currently conifer plantation and is under the management of the Forestry Commission. No felling of trees is proposed given that the proposed development will be undertaken within the boundary of an existing wellsite. There is therefore no potential for impacts on the North York Moors National Park.

There is no potential for any construction impacts on Rosedale and Kirkdale Fen SSSI given that the SSSI does not have any habitat connectivity to the wellsite. Emissions from construction traffic will be broadly concurrent with existing forestry operations, and it is therefore reasonable to conclude that such operations will not result in any indirect impacts on the designated sites. On this basis, it is concluded that the construction works associated proposed wellsite will not result in any adverse effects on statutory designated sites. The confidence in this assessment is **high**.

7.1.3 *Vegetation and Habitats*

The existing vegetated topsoil bunds would be retained in their entirety as part of the construction phase of the wellsite, as all works would be limited to the existing areas of hardstanding associated with the previous Ebberston Moor 1 wellsite. Likewise, the site drainage system is already in place. There is therefore no potential for impacts on habitats immediately adjacent to the site since there will be no site clearance works such as tree felling or topsoil stripping.

7.1.4 *Breeding Birds*

Goshawk

Forestry plantation within the North York Moors National Park is known to be a nesting stronghold for this species in the county, with an estimated 550 nesting pairs in North Yorkshire (Birdguides 2006).

There is no potential for direct impacts on nesting goshawk since there will be no tree felling works associated with the proposed development.

There are no known records of nesting goshawk within the zone of influence of the proposed development, which is typically considered to be c. 400 m based on the guidance for the

establishment of a 'disturbance free' buffer zone when considering the potential impacts of forestry operations (Petty, 1996). Given the limited impacts of the construction phase in terms of noise and visual disturbance, it is considered unlikely that there is any pathway for indirect impacts on nesting goshawk, should they be present in previously unrecorded nest sites within the zone of influence. The proposed development is therefore assessed as having no adverse effects on nesting goshawk. Confidence in this assessment is **high**.

Nightjar

This species has been recorded as nesting within clear felled areas of forestry throughout the North York Moors National Park. Although varying nationally, trends in Yorkshire indicate that this species is undergoing an expansion in numbers due to the increase in clear felled and young restocked plantations (Scott *et al* 1998) in the county. It is estimated that there are up to 4,024 pairs nesting in North Yorkshire (Conway & Henderson, 2005).

There is no potential for this species to be nesting within the site boundary and therefore there is no potential for the proposed construction of the wellsite to result in any direct impacts on nesting nightjar habitat. Confidence in this assessment is **high**.

Given that there is suitable potential nightjar nesting habitat within *c.* 250 m of the proposed wellsite, there is the potential for construction of the wellsite to result in noise disturbance to nesting nightjar, should works be undertaken within the breeding season.

Nightjars rely on their cryptic plumage to escape detection and this trait is likely to result in low active disturbance distances, with birds only displaying a visible disturbance response (i.e. flushing from the nest) when approaching predators are close. Studies have determined that the distances at which this response occurs is less than 10 m during the egg incubation period, increasing to 50 – 100 m during chick rearing (Ruddock & Whitfield 2007). However, other publications also highlight the potential for non visible disturbance responses as a result of disturbance at distances greater than 100 m that may also potentially have a detrimental effect on nesting nightjar. Such 'passive' disturbance is difficult to determine and to quantify its effects on nightjar breeding success (Ruddock & Whitfield 2007).

The potentially suitable nightjar habitat in the clear felled forestry area is approximately 240 m south-west of the proposed wellsite. This distance is outside the typical 100 m range in which a visual disturbance response may be elicited in nesting nightjar during chick rearing. In addition, as the Ebberston Moor A wellsite is an existing wellsite, construction activity will be minimal, and will in any case be screened from the potential nightjar nesting habitat by the undisturbed section of forestry plantation that separates this habitat from the wellsite. Noise disturbance associated with construction traffic movements will be consistent with ongoing forestry operations, disturbance to which it is assumed that nightjars are relatively well habituated to, given that their numbers are expanding rapidly within the North York Moors National Park (Conway & Henderson, 2005).

It is therefore assessed that indirect impacts due to noise and visual disturbance resulting from the construction phase of the proposed wellsite will not result in any significant adverse effects on nesting nightjar, should this species be present within the nearby clear felled forestry area. No mitigation is proposed as it is assessed that construction works are unlikely to result in any disturbance to nesting nightjar. Confidence in this assessment is **high**.

7.1.5 *Bats*

Foraging bats using the woodland edge habitat around the perimeter of the site may avoid any area of lighting disturbance during construction. However, all lighting will be designed to be directed down onto working construction areas to minimise spillage onto areas outside the site

boundary. It is therefore concluded that the construction phase of the proposed wellsite is not likely to result in significant disruption to foraging/ commuting bats. Consequently, it is assessed that no significant adverse effects on bat populations are predicted as a result of the construction activities. Confidence in this assessment is **high**.

7.1.6 *Reptiles*

Suitable potential reptile habitat is confined to the topsoil storage bunds around the southern and western perimeter of the site. These areas will not be disturbed as part of the construction phase and therefore there is no potential for adverse effects on reptiles. Confidence in this assessment is **high**.

7.2 Operational Effects

7.2.1 *Statutory Designated Sites*

Site operations would not involve any works beyond the proposed footprint of the site established during the construction phase, and no significant adverse effects on any statutory designated site is anticipated given the small scale and temporary nature of the works. Confidence in this assessment is **high**.

7.2.2 *Vegetation and Habitats*

Site operations would not involve any works beyond the proposed footprint of the site established during the construction phase, so no direct effects on the surrounding land are anticipated. Site run off would be controlled though the existing closed drainage system established for the Ebberston Moor 1 wellsite. Due to the small scale of the development and its temporary nature, this is not anticipated to have any significant effect on the ecology and hydrology of the surrounding land. Confidence in this assessment is **high**.

7.2.3 *Breeding Birds*

Goshawk

There are no known records of goshawk nests within 400 m of the wellsite, and therefore it is reasonable to conclude that there is no potential for impacts on this species as a result of the operation of the wellsite.

As discussed in respect of construction effects, given that the site will be screened by the retention of the surrounding forestry plantation and the construction of an earth bund around part of the site, it is not considered that the operation of the wellsite will result in any significant adverse effects on nesting goshawk, should this species establish any nest sites within 400 m of the proposed wellsite. Confidence in this assessment is **high**.

Nightjar

There is the potential for operational impacts to result in adverse effects on nesting nightjar through noise and visual disturbance, should this species be nesting in the clear felled forestry to the south-west of the wellsite near Jingleby Thorn. However, as discussed in respect to construction effects, both noise and visual disturbance impacts would be screened from the

potential nightjar nesting habitat to the east of the proposed wellsite by existing forestry plantation. In addition, the suitable nesting habitat is outside the 100 m zone in which a disturbance response is typically elicited in nesting nightjar. It is therefore assessed that the operational phase of the wellsite, which is temporary in nature, would not result in any adverse effects on nesting nightjar. Confidence in this assessment is **high**.

7.2.4 *Bats*

Foraging bats using the woodland edge as a commuting and foraging route may avoid any area of lighting disturbance during operation. However, all lighting will be designed to be directed down onto working areas (limited to the borehole location and ancillary welfare facilities/ car parking areas) to minimise spillage onto areas outside the site boundary. It is therefore concluded that the operational phase of the proposed wellsite is not likely to result in significant disruption to bats potentially foraging along the forestry track adjacent to the northern boundary. Consequently, no significant adverse effects on bat populations are predicted as a result of the operational activities. Confidence in this assessment is **high**.

Operational noise levels are assessed as having only a minor temporary effect on nearby receptors. This temporary and highly localised increase in noise levels is very unlikely to have significant adverse effects on the conservation status of local bat populations. Confidence in this assessment is **high**.

7.2.5 *Reptiles*

There is no potential for the operation of the proposed wellsite to result in adverse effects on reptiles since all potentially suitable reptile habitat will be retained on the site during the construction phase. Confidence in this assessment is **high**.

7.3 Decommissioning Effects

Potential effects on receptors arising from the majority of decommissioning operations would be similar to those during the construction phase in terms of nature, duration and significance, and also in terms of assessment confidence.

This is with the exception of reptiles, which may be present on the vegetated topsoil storage bunds. Upon decommissioning of the site, it is assumed that the topsoil would be reinstated on site and therefore there is the potential for direct impact on habitats potentially supporting reptiles. However, habitat suitable for reptiles within the site boundary occupies a very small area and is therefore unlikely to support a site-specific population of reptiles although it may be used by foraging/ basking individuals resident in the wider local area. In addition, impacts resulting from topsoil reinstatement would be limited in magnitude and extent. It is assumed that the topsoil, once reinstated, would re-colonise with a similar vegetation assemblages and would therefore provide suitable potential reptile habitat upon completion of decommissioning. It is assessed that decommissioning of the wellsite will result in no adverse effects on reptiles. Confidence in this assessment is **high**.

However, as all reptiles are protected under the Wildlife and Countryside Act 1981 (as amended), measures may need to be implemented to ensure legislative compliance during the reinstatement works. Given the limited impacts of the works, and the low risk of reptiles being present, it is considered that this can be adequately addressed through an ecological watching brief during the initial earth works to rescue any reptiles that may be uncovered during the works.

8. IMPACT AVOIDANCE, REDUCTION AND COMPENSATION MEASURES

8.1 General

Standard controls over site establishment, operation and decommissioning would be implemented to avoid surface run-off from the site into adjacent habitats.

The design of lighting levels during construction, operation and decommissioning of the site should be kept at the minimum necessary for health and safety. Effort should be made to reduce light spillage onto adjacent habitats to reduce any potential effects on nocturnal fauna such as bats and owls.

8.2 Breeding Birds

Should drilling operations be programmed to commence within the breeding bird season, liaison with the Forestry Commission ecologist is recommended prior to track the progress of the volunteer goshawk nest monitoring surveys. In the event that newly established goshawk nests are identified within the zone of influence (i.e. within 400 m of the proposed wellsite), further mitigation may be required to minimise disturbance impacts to ensure legislative compliance during the operational phase.

9. ENHANCEMENT MEASURES

The temporary site would be restored to its previous usage upon completion of the works and as this is a temporary development of short duration and limited extent, no ecological enhancements are proposed. A previous planning application included a landscaping scheme which has now been implemented.

10. ASSESSMENT OF RESIDUAL EFFECTS

The construction and operational phases of the proposed development are assessed to result in no significant adverse effects on flora and fauna, and no mitigation is proposed. With the implementation of appropriate mitigation to address the potential impacts of the decommissioning phase on reptiles, no significant adverse residual effects on flora and fauna are anticipated to arise from the development proposals. Confidence in this assessment is **high**.

11. REFERENCES

Bat Conservation Trust (2012) *Bat Surveys – Good Practice Guidelines. 2nd Edition.* Bat Conservation Trust, London.

Birdguides (2006) *Birds of the Western Palearctic* (interactive version).

Conway, G. & Henderson, I. (2005) *The Status and Distribution of The European Nightjar* Caprimulgus europaeus *in Britain in 2004.* BTO Research Report No. 398. BTO, Norfolk.

Harris, S. Creswell, P. & Jefferies, D. (1989) *Surveying Badgers. An occasional publication of the mammal society – No 9.* Mammal Society, London.

Institute of Environmental Assessment (1995) *Guidelines for Baseline Ecological Assessment.* Institute of Environmental Assessment, London.

Joint Nature Conservation Committee (2010) *Handbook for Phase I Habitat Survey: A technique for environmental audit.* JNCC, Peterborough.

Petty, S.J. (1996) *Reducing disturbance to goshawks during the breeding season.* Forestry Commission Research Information Note 267.

Ruddock, M. & Whitfield, D.P. (2007) *A Review of Disturbance Distances in Selected Bird Species.* Report prepared for Scottish Natural Heritage.

Scott, G.W., Jardine, D.C., Hills, G. & Sweeney, B. (1998) *Changes in Nightjar* Caprimulgus europaeus *populations in upland forests in Yorkshire.* Bird Study 45: 219, 225.

APPENDIX A SITE PHOTOGRAPHS

Photograph 1: Bare ground and newly planted hedgerow in Ebberston Moor 1 wellsite

Photograph 2: Naturally re-colonised topsoil storage bund around site

Photograph 3: Topsoil storage mound and bare ground in site boundary

Photograph 4: Semi-mature trees along southern boundary

APPENDIX B LEGISLATION AND PLANNING POLICY

Legislation and Planning Policy

The following legislation relates to species and habitats that could potentially occur within the study area:

- Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations);
- Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992;
- Wild Mammals (Protection) Act 1996; and
- Hedgerow Regulations 1997.

Consideration has been paid to relevant national, regional and local planning policy and strategy documents. These are listed below:

- National Planning Policy Framework (NPPF);
- Yorkshire and Humber Plan (Regional Spatial Strategy) adopted 2008;
- The Scarborough Local Plan (1999) – soon to be replaced by the Scarborough Local Development Framework (LDF) which is currently under consultation.
- UK and Scarborough Biodiversity Action Plans (JNCC, 2007).

A summary of relevant policy is provided below.

Section 11 of the NPPF relates specifically to 'Conserving and Enhancing the Natural Environment'. Paragraph 109 states that

"*The planning system should contribute and enhance the natural and local environment by:*

Protecting and enhancing valued landscapes, geological conservation interests and soils;

Recognising the wider benefits of ecosystem services;

Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures ..."

The NPPF refers to Circular 06/2005, which provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

The Yorkshire and Humber Plan states:

"...the region will safeguard, manage and enhance its existing tree and woodland resource in line with the Regional Forestry Strategy, increase the total area by 500 ha per year whilst identifying and enhancing ancient woodlands (Policy ENV6); and

"the region should safeguard and enhance the biodiversity and ensure the natural environment functions as an integrated network of habitats (Policy ENV8)."

The Scarborough Local Plan addresses biodiversity predominantly through the following policies:

E1 - Protection of Open Countryside

'Land and buildings situated outside of the defined development limits of settlements will be regarded as open countryside where development will be strictly controlled and only permitted where:....

b. In the case of other types of development they are:

i. located to avoid or minimise the loss of best and most versatile agricultural land and are;

ii. proposals for which an open countryside location is essential and no suitable alternative exists, or

iii. proposals for individual sites or for the re-use of adaptation of existing rural buildings to secure or diversify the rural economy.

Development that is permitted will have regard to nature conservation interests and to its setting in the landscape. The scale, form, design, materials and colours will be required to be in keeping with the character of the surrounding area.'

E7 - Local Nature Conservation Sites

'The nature conservation importance of all development sites will be taken into account. Developments which could adversely affect nature conservation interests will only be permitted where the benefits from development outweigh the nature conservation importance of the site or where planning conditions or legal agreements can be used to:

a. minimise any harm arising; or

b. compensate for any harm through alternative habitat creation of other appropriate nature conservation measures.

Development will not be permitted where it would result in the loss of, or seriously harm, significant wildlife corridors.'

E11 - Protection of Water Resources

'Development that will lead to a deterioration in, or pose a serious threat to the quality of surface, underground or sea water will not be permitted.'

E39 - Development Affecting Hedgerows and Trees

'Development likely to affect hedgerows and trees which make an important contribution to landscape character or are otherwise important as wildlife corridors will be required to keep any loss or damage to an absolute minimum. Wherever possible, planning conditions will be

used to ensure that existing hedgerows and trees are retained and enhanced as part of the landscaping of new development.'

Policies that expired from the Local Plan in 2007 and relevant to the proposed development site include:

E8 – National Nature Conservation Sites

E10 – Species Protection

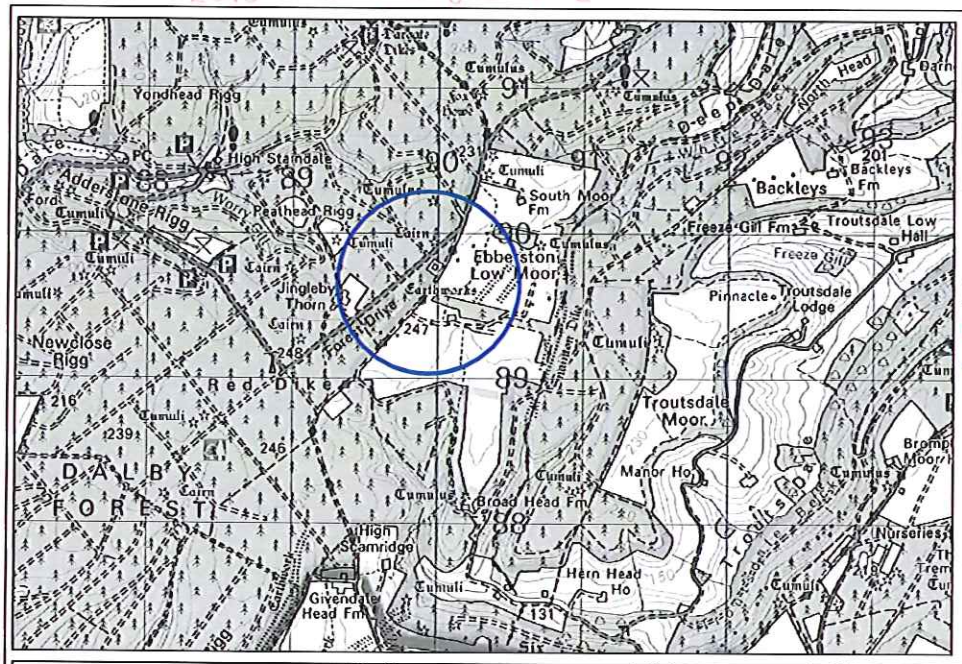
E13 – Landscaping of New Development

Although these policies have expired, the aims of each replicate national and/or regional planning policy, discussed above, which have to be taken into account in the decisions on planning applications.

The UK Biodiversity Action Plan (UK BAP) identifies national priority habitats and species. These are known as Priority Species/ Priority Habitats or Habitats/ Species of Principal Importance. Scarborough Borough Council has also prepared a local Biodiversity Action Plans (LBAP). Where habitats and species listed on the UK and Scarborough BAP which are relevant to the scheme, have been identified through the desk study and field survey, these are discussed in the results section of this ecological assessment.

FIGURE 1 SITE LOCATION PLAN

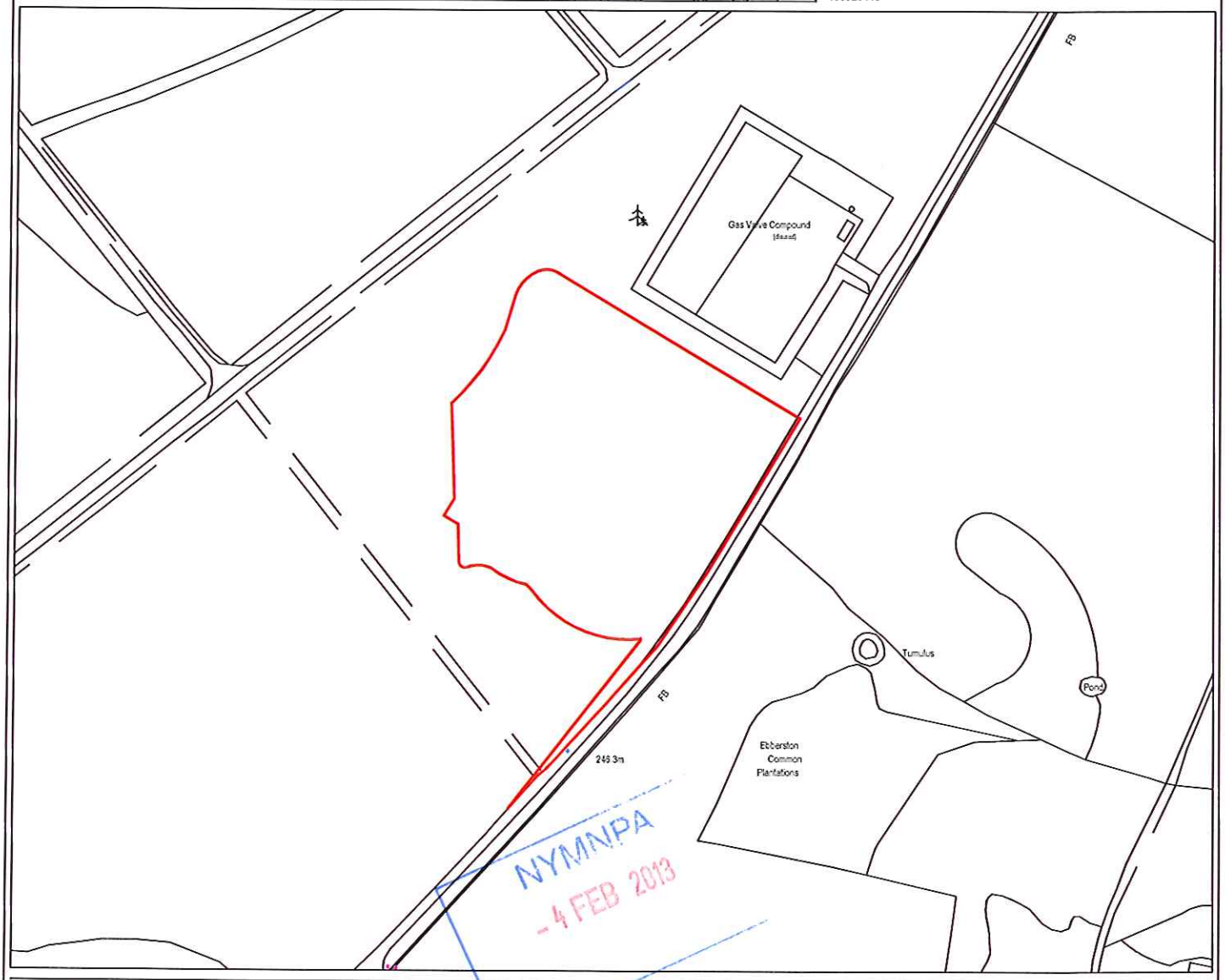
NYM / 2013 / 0068 / FL



N

Key

- Site Boundary
- Site Location



Drawing Title

FIGURE 1
SITE LOCATION PLAN

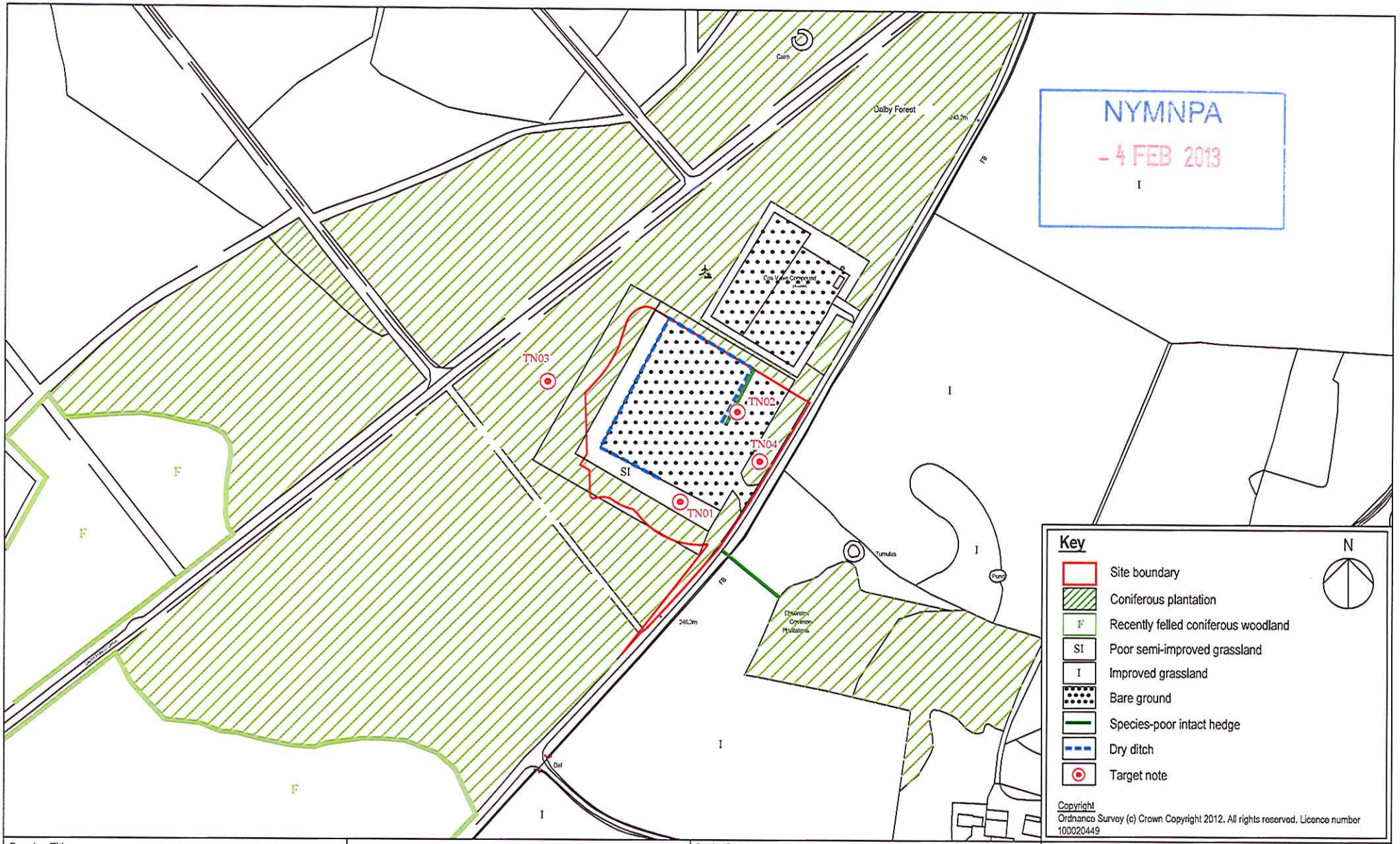
EBBERSTON MOOR A

Scale @ A4 1:50,000 & 1:2500		
Drawn CLH	Checked JA	Approved JA
Date 24.01.13		Rev

Drawing Number
47065324/EC/A/001

URS
www.ursglobal.com

FIGURE 2 PHASE 1 HABITAT SURVEY MAP



Drawing Title

FIGURE 2
PHASE 1 HABITAT MAP

EBBERSTON MOOR A

Scale @ A4		
NTS		
Drawn	Checked	Approved
CLH	JA	JA
Date		Rev
24.01.13		

Drawing Number
47065324/EC/A/002

URS
www.ursglobal.com