

## 7.0 LANDSCAPE AND VISUAL

### Introduction

- 7.1 This chapter of the ES assesses the likely significant effects of the Development with respect to landscape and visual impacts.
- 7.2 The chapter describes the assessment methodology; the baseline conditions at the Site and surroundings; the likely significant environmental effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed.
- 7.3 This chapter should be read in conjunction with the following figures and appendices:

#### Figures

- Figure 7.1: Site Context Plan at 1:25,000 scale @ A1
- Figure 7.2: Topographical Features Plan at 1:25,000 scale @ A1
- Figure 7.3: Landscape Character Plan at 1:25,000 scale @ A1
- Figure 7.4 – Figure 7.7: Site Appraisal Plans at 1:12,500 scale @ A3
- Figure 7.8 – Figure 7.10: Visual Appraisal Plans at 1:10,000 scale @ A1

#### Appendices

- Appendix 7.1: LVIA Methodology
- Appendix 7.2: Site Appraisal Photographs and Site Context Photographs
- Appendix 7.3: Strategic Woody Vegetation Survey
- Appendix 7.4: North York Moors National Park Design Guide
- Appendix 7.5: Landscape Character Assessment Extracts
- Appendix 7.6: Visual Effects Table

### Planning Policy Context

#### English National Parks and the Broads<sup>1</sup>

- 7.4 The English National Parks and the Broads (ENPB) Circular provides updated policy guidance with respect to the National Parks and the Broads of England. The ENPB Circular sets out a vision for the National Parks and Broads and a series of priority outcomes and actions for

the short-term to work towards achieving the vision. The 2030 vision is outlined as follows:

*"By 2030 English National Parks and the Broads will be places where:*

- *There are thriving, living, working landscapes notable for their natural beauty and cultural heritage. They inspire visitors and local communities to live within environmental limits and to tackle climate change. The wide-range of services they provide (from clean water to sustainable food) and in good condition and valued by society.*
- *Sustainable development can be seen in action. The communities of the Parks take an active part in decisions about their future. They are known for having been pivotal in the transformation to a low carbon society and sustainable living. Renewable energy, sustainable agriculture, low carbon transport and travel and healthy, prosperous communities have long been the norm.*
- *Wildlife flourishes and habitats are maintained, restored and expanded and linked effectively to other ecological networks. Woodland cover has increased and all woodlands are sustainably managed, with the right trees in the right places. Landscapes and habitats are managed to create resilience and enable adaptation.*
- *Everyone can discover the rich variety of England's natural and historic environment, and have the chance to value them as places for escape, adventure, enjoyment, inspiration and reflection, and a source of national pride and identity. They will be recognised as fundamental to our prosperity and well-being."*

7.5 The key outcomes to be targeted over the next five years are set out and include:

- *"A renewed focus on achieving the Park Purposes;*
- *The leading the way in adapting to, and mitigating climate change;*
- *A diverse and healthy natural environment, enhanced cultural heritage and inspiring lifelong behaviour change towards sustainable living and enjoyment of the countryside;*
- *Foster and maintain vibrant, healthy and productive living and enjoyment of the countryside;*
- *Foster and maintain vibrant, healthy and productive living and*

*working communities;*

- *Working in partnership to maximise the benefits delivered.”*

7.6 The importance of landscape in achieving the 2030 vision is enshrined within Paragraph 49 which states that:

*“Cultural heritage and landscape are fundamental to quality of place and, as they are central to attractiveness, distinctiveness, diversity and quality of place in the Parks, should be protected and enhanced.”*

National Planning Policy Framework<sup>ii</sup>

7.7 The National Planning Policy Framework (NPPF) was published on 27th March 2012. The NPPF aims to provide one concise document which sets out the Government’s planning policies for England by replacing Planning Policy Guidance (PPGs), Planning Policy Statements (PPSs) and the majority of Minerals Planning Guidance (MPGs) and Minerals Policy Statements (MPSs).

7.8 The NPPF, at Paragraph 14, promotes a presumption in favour of sustainable development, which is defined in Resolution 24/187 of the United Nations General Assembly as *“meeting the needs of the present without compromising the ability of future generations to meet their own needs”*. The NPPF sets out how sustainable development can be delivered and that particular regard must be given to designated areas such as National Parks in which the Site is partly located.

7.9 Twelve core planning principles are set out in Paragraph 17 which between them underpin decision-making. Two are relevant to landscape and visual matters in relation to the Site, stating that planning should:

- *“take account of the different roles and character of different areas, promoting the vitality of our main urban areas, protecting the Green Belts around them, recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it;*
- *contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value, where consistent with other policies in this Framework.”*

7.10 The NPPF goes on to state, at paragraph 109, that:

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

- *protecting and enhancing valued landscapes, geological conservation interests and soils."*

7.11 The NPPF makes clear at paragraph 115 that great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty (AONBs), which have the highest status of protection in relation to landscape and scenic beauty.

7.12 Paragraph 116 refers to major development in designated areas such as National Parks and AONBs, stating:

*"Planning permission should be refused for major developments in these designated areas except in exceptional circumstances and where it can be demonstrated they are in the public interest. Consideration of such applications should include an assessment of:*

- *the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;*
- *the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and*
- *any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated."*

7.13 Regarding the role of Local Planning Authorities in determining planning applications for mineral operations, paragraph 144 of the NPPF states:

- *"Ensure, in granting planning permission for mineral development, that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality;...*
- *Provide for restoration and aftercare at the earliest opportunity to*

*be carried out to high environmental standards, through the application of appropriate conditions, where necessary..."*

#### Local Planning Policy

- 7.14 Local planning policy applicable to the Development includes policies prepared by North Yorkshire County Council (NYCC), North York Moors' National Park Authority (NYMNP) and Ryedale District Council (RDC).

#### *NYCCs Minerals Local Plan (1997)<sup>iii</sup>*

- 7.15 North Yorkshire County Council's (NYCCs) minerals Local Plan was adopted in December 1997 and contains policies which relate to minerals development. The policies were due to expire on the 27th September 2007 however the Secretary of State saved a number of policies for three years or until policies being developed in the Minerals and Waste Development Framework (MWDF) supersede them. On 30<sup>th</sup> March 2009, the Council received confirmation from the Government Office for Yorkshire and the Humber that the draft Minerals and Waste Core Strategies of the MWDF should be withdrawn. Therefore a number of the saved policies from the NYCC Minerals Local Plan are of relevance to this landscape and visual impact assessment.

- 7.16 Policy 4/14 Local Environment and Amenity seeks to avoid any unacceptable impact of mining operations on the local environment or residential amenity, stating:

*"Proposals for mining operations and the associated depositing of mineral waste will be permitted only where there would not be an unacceptable impact on the local environment or residential amenity."*

- 7.17 Policy 4/15 Public Rights of Way has regard to ensuring continuity of PRow in the vicinity of mining operations. It states that:

*"Proposals for mining operations and the associated depositing of mineral waste which would interrupt, obstruct or conflict with use of a public right of way will only be permitted where satisfactory provision has been made in the application for protecting the existing right of way or for providing alternative arrangements both during and after working."*

- 7.18 Policy 4/18 Restoration to Agriculture refers to the after-use restoration of the landscape. It states that:

*"Where agriculture is the intended primary afteruse, the proposed restoration scheme should provide for the best practicable standard of restoration. Such restoration schemes should, where possible, include landscape, conservation or amenity proposals provided that these do not result in the irreversible loss of best and most versatile land."*

- 7.19 Policy 4/20 Aftercare deals with landscape management to approved standards in the post-restoration period. It states that:

*"Planning permissions which are subject to conditions requiring restoration to agriculture, forestry or amenity (including nature conservation) will additionally be subject to an aftercare requirement seeking to bring the restored land up to an approved standard for the specified after-use. Normally this requirement will run for a period of five years following restoration. Additionally, where forestry and amenity (including nature conservation) afteruses are proposed, the Mineral Planning Authority may seek to secure longer term management agreements."*

- 7.20 Policy 7/10 Restoration provides specific conditions for the restoration of different elements of oil and gas sites. It states that:

*"Planning permission for the exploration, appraisal or development of oil or gas resources will only be permitted when provision is made for the full restoration of the site and its related means of access to a beneficial after use. In particular, the Mineral Planning Authority will impose:*

- i) a 1 year time limit for the restoration of exploration sites or the submission of proposals for continued appraisal work;*
- ii) a 2 year time limit for the restoration of appraisal sites or the submission of proposals for development as a production site; and*
- iii) a 2 year time limit for the restoration of a production site, to run from the cessation of significant oil or gas production from the site."*

- 7.21 Policy 7/11 Retention of Features requires a clear demonstration of benefit in the non-

restoration of certain elements of a gas or oil scheme. It states that:

*"Proposals to retain sections of access road, hard standings, fencing and screening as an exception to the full restoration of exploration, appraisal or production sites will be approved only where a clear agricultural or other benefit can be demonstrated."*

*North York Moors National Park Local Development Framework (2008)<sup>iv</sup>*

7.22 The Adopted Core Strategy and Development Policies Development Plan Document is the key document which forms the North York Moors Local Development Framework. The policies in this document replace the 'saved' policies in the North York Moors Local Plan<sup>v</sup>.

7.23 Core Policy A Delivering National Park Purposes and Sustainable Development sets out the strategic framework for future development within the National Park, with an emphasis on conserving and enhancing the special qualities of the National Park, stating:

*"...Providing a scale of development and level of activity that will not have an unacceptable impact on the wider landscape or the quiet enjoyment, peace and tranquillity of the Park, nor detract from the quality of life of local residents or the experience of visitors."*

7.24 Development Policy 1 Environmental Protection focuses on the conservation and enhancement of the special qualities of the North York Moors National Park. It states that development will only be permitted where:

- *"It will not have an unacceptable adverse impact on surface and ground water, soil, air quality and agricultural land;*
- *It will not generate unacceptable levels of noise, vibration, activity or light pollution;*
- *There will be no adverse effects arising from sources of pollution which would impact on the health, safety and amenity of the public and users of the development; and*
- *Land stability can be achieved without causing unacceptable environmental or landscape impact...."*

7.25 Core Policy E Minerals focuses on the extraction of stone including aggregate production. It does however note that the extraction of oil and gas:

*"should only take place in the Park in exceptional circumstances and will therefore be subject to rigorous examination. Proposals for oil and gas exploration, appraisal and production will be considered against the policy in Annex 4 of Minerals Policy Statement 1, which has since been superseded by the NPPF."*

7.26 Core Policy G Landscape, Design and Historic Assets seeks high quality sustainable design:

*"...which conserves or enhances the landscape setting, settlement layout and building characteristics of the landscape character areas identified in the North York Moors Landscape Character Assessment. Particular protection will be given to those elements which contribute to the character and setting of:*

- *Conservation Areas;*
- *Listed Buildings;*
- *Historic Parks and Gardens; and*
- *Scheduled Monuments and other sites of archaeological importance."*

7.27 Development Policy 3 Design specifies the need for a landscaping scheme as an integral part of development proposals, and sets out seven criteria which development proposals must achieve in order to maintain and enhance the character of the Park:

- *"the siting, orientation, layout and density preserves or enhances views into and out of the site, spaces about and between buildings and other features that contribute to the character and quality of the environment;*
- *the scale, height, massing, proportion, form, size, materials and design features of the proposal are compatible with surrounding buildings, and will not have an adverse effect upon the amenities of adjoining occupiers;*
- *a high standard of design detailing is used which reflects, or complements that of the local vernacular;*
- *provision is made for adequate storage and waste management facilities;*
- *good quality sustainable design and construction techniques are*



*incorporated in the development, including measures to minimise energy use and where possible use energy from renewable resources;*

- *a satisfactory landscaping scheme forms an integral part of the proposal; and*
- *the design takes account of the safety, security and access needs for all potential users of the development and provides car parking provision in line with the standards adopted by the Authority."*

*North York Moors National Park Management Plan (2012)*<sup>vi</sup>

7.28 The North York Moors was designated as a National Park in 1952. The 1995 Environment Act<sup>vii</sup> sets out two purposes for National Park Authorities:

- *"To conserve and enhance the natural beauty, wildlife and cultural heritage of the National Parks; and*
- *To promote opportunities for the understanding and enjoyment of the special qualities of the Parks by the public."*

7.29 The Management Plan has identified a number of aims for the National Park and related policies to achieve these aims. Of relevance to the Development and in relation to landscape and visual considerations are the following:

*"AIM: The landscape character and quality will be maintained and reinforced; in particular the distinctiveness of the Landscape Character Areas will be conserved.*

*POLICIES*

- *E1. The landscape character of the National Park will be maintained and enhanced*
- *E2. Traditional farmed landscape features will be conserved, enhanced and reinstated where possible*
- *E3. New development will not have a detrimental impact on the landscape of the National Park...*

*AIM: The archaeological and built heritage of the National Park will be conserved for future generations to understand and enjoy, and for its own intrinsic value.*

*POLICIES*

- *E7... new development in the National Park will seek to conserve and enhance heritage assets and their settings...*

*AIM: The North York Moors will continue to support a diverse range of priority species and habitats with increased extent, connection and resilience.*

*POLICIES*

- *E15. New development will protect biodiversity and provide enhancements where appropriate...*

*AIM*

*The North York Moors will continue to be a place of tranquillity, remoteness and dark night skies, providing opportunities for spiritual refreshment.*

*POLICIES*

- *E19. Existing tranquil areas will be protected, and expanded where possible*
- *E20. Dark skies will be protected and improved. New development in the National Park will not cause unacceptable light or noise pollution...*
- *E23. New development outside the National Park will not affect tranquillity within the National Park..."*

*Ryedale Plan: Local Plan Strategy<sup>viii</sup>*

7.30 In May 2012, Ryedale District Council submitted the Ryedale Plan: Local Plan Strategy to the Secretary of State for formal examination by an independent Planning Inspector. The document proposed key policies for managing growth and change across the District to 2027 and was adopted on the 14th August 2013.

7.31 SP13 Landscapes is the key policy in relation to landscape and visual considerations. It states:

*"The quality, character and value of Ryedale's diverse landscapes will be protected and enhanced by:*

- *Encouraging new development and land management practises which reinforce the distinctive elements of landscape character within the District's broad landscape character areas of:*
  - North York Moors and Cleveland Hills*

- ii) *Vale of Pickering*
- iii) *Yorkshire Wolds*
- iv) *Howardian Hills*
- v) *Vale of York*

- *Protecting the special qualities, scenic and natural beauty of the Howardian Hills Area of Outstanding Natural Beauty, the setting of the Area of Outstanding Natural Beauty and the setting of the North York Moors National Park."*

7.32 In addition, SP13 Landscapes continues to discuss Landscape Character and the need for the Development to consider its landscape setting, stating:

*"Development proposals should contribute to the protection and enhancement of distinctive elements of landscape character that are the result of historical and cultural influences, natural features and aesthetic qualities including:*

- *The distribution and form of settlements and buildings in their landscape setting*
- *The character of individual settlements, including building styles and materials*
- *The pattern and presence of distinctive landscape features and natural elements (including field boundaries, woodland, habitat types, landforms, topography and watercourses)*
- *Visually sensitive skylines, hill and valley sides*
- *The ambience of the area, including nocturnal character, level and type of activity and tranquillity, sense of enclosure/exposure."*

7.33 It goes on to state, with reference to the natural beauty and special qualities of nationally designated and locally valued landscapes:

*"The natural beauty and special qualities of the Howardian Hills Area of Outstanding Natural Beauty...will be conserved and enhanced and the impact of proposals on the AONB, its setting or the setting of the North York Moors National Park will be carefully considered.*

*Proposals will be supported where they:*

- *Do not detract from the natural beauty and special qualities of these nationally protected landscapes or their settings*

- *Seek to facilitate the delivery of the Howardian Hills AONB Management Plan Objectives*
- *Are considered appropriate for the economic, social and environment well-being of the area or are desirable to support the understanding and enjoyment of the area."*

#### Supplementary Planning Documents

##### *North York Moors National Park – Design Guide Supplementary Planning Documents (SPD)*<sup>ix</sup>

7.34 In addition to North York Moors Cores Strategy and Development Policies Document, the North York Moors Design Guide provides further guidance on landscape setting and sustainable design as well as the treatment of trees and landscape in development proposals. Extracts of this design guide are included in Appendix 7.4. The promotion of a higher standard of design is advocated through:

- *"Ensuring that the design of all development is consistent with the statutory purposes of the National Park.*
- *Ensuring that all new development is of a high quality that respects local distinctiveness and conserves and where possible, enhances the character and special qualities of the area.*
- *Encouraging good contemporary design where appropriate.*
- *Minimising the unsustainable use of resources and the production of waste in the construction of new development.*
- *Minimising the requirement for resource use during the operation of the development.*
- *Ensuring that conditions for wildlife and natural habitats are maintained or enhanced.*
- *Protecting the residential amenity of others.*
- *Promoting design that reduces both the causes and effects of climate change."*

##### *Ryedale Supplementary Planning Guidance*

7.35 The Ryedale Rural Design Guide is largely focused on residential development and is therefore not applicable to the Development. Landscaping on Development Sites<sup>x</sup> contains detailed guidance on hard and soft landscape treatments that are appropriate to the District and prescription on the information relating to landscape proposals that will be required by

the council.

## **Assessment Methodology and Significance Criteria**

### Aims of the Assessment

7.36 The aims of the assessment are to:

- Carry out a landscape and visual appraisal of the Site and its surroundings in order to assess its character and visibility, and its relationship with adjacent areas;
- Undertake a landscape and visual impact assessment of the Development with reference to best practice guidance, quantifying the magnitude and significance of the effects, both before and after mitigation;
- Advise on a landscape strategy for the Development; and
- Give consideration to the Development in the context of the planning policy, insofar as they refer to landscape and visual matters.

### Methodology

7.37 This landscape and visual impact assessment (LVIA) has been prepared in accordance with the guidelines as set out in the 3<sup>rd</sup> Edition of the Landscape Institute and the Institute of Environmental Management and Assessment's '*Guidelines for Landscape and Visual Impact Assessment*'<sup>xi</sup>. LVIA, in common with many assessments of environmental effects, includes a combination of objective and subjective judgements and it is therefore important that a structured and consistent approach is used. The criteria used for determining the significance of effects is included below and the complete methodology is set out in Appendix 7.1.

### Significance of Effects

7.38 Significance is not absolute and can only be identified in relation to each individual development and its unique location. It is important that any assessment of significance adopts an informed and well-reasoned judgement, supported through a clear justification as to how the conclusions about significance for each effect have been derived. It should be emphasised that whilst this methodology is designed to be robust and transparent, professional judgement is ultimately applied to determine the level of significance applied to each effect.

7.39 The two principal criteria determining the significance of effects are the magnitude of effect (nature of the effect), and the environmental sensitivity of the location or receptor (nature of the receptor). With regard to visual receptors, a Major significance of effect would likely occur from high sensitivity receptors such as residents or users of public rights of way (PRoW) where they would experience a pronounced change in the view. A Minor significance of effect would likely occur for the least sensitive receptors, such as those using transport corridors, as viewers would be affected for a smaller period of time as they would experience transient views, or where changes to the view are barely discernible. Where no change is identified the significance of effect is considered to be Neutral.

7.40 Example visual assessment categories are outlined in Table 7.1.

**Table 7.1: Example Visual Assessment Categories**

<b>Visual Assessment Category</b>	<b>Visual Assessment Criteria</b>
Major Adverse	Typically proposed changes would result in a pronounced deterioration in the existing view.
Moderate Adverse	Typically proposed changes would result in a noticeable deterioration in the existing view.
Minor Adverse	Typically proposed changes would result in a slight deterioration in the existing view.
Negligible	Typically proposed changes would result in barely discernible deterioration or improvement in the existing view.
Neutral	No effect (either no change or neutral effect).
Minor Beneficial	Typically proposed changes would result in a slight improvement in the existing view.
Moderate Beneficial	Typically proposed changes would result in a noticeable improvement in the existing view.
Major Beneficial	Typically proposed changes would result in a pronounced improvement in the existing view.

7.41 These thresholds are determined by considering both sensitivity and magnitude of effect, which reference to any general terminology accepted for the whole Environmental Statement.

### **Limitations and Assumptions**

7.42 In undertaking the assessment of landscape and visual effects of the Development, the following assumptions have been made:

- That the establishment and growth rates for the landscape mitigation proposals are based on established growth rates set out in Appendix 7.1;
- That back-filled excavated material along the route of the proposed pipeline will be

- returned to its former-use where appropriate; and
- That the implementation of the landscape and habitat creation proposals will be phased and implemented either in advance (where possible) or immediately at the end of construction works or phase it relates to.
- 7.43 Consideration should also be given to the seasonal differences in effects arising from the degree of vegetative screening and/or filtering of views that would apply in summer and winter. Thus assessment may be provided for '*average*' and '*worst-case*' situations (the latter being the season with least leaf cover and therefore minima vegetative screening).
- 7.44 In undertaking this LVIA, there are a number of limitations and constraints affecting the outputs from this work. In addition to those set out in Chapter 2, these include:
- The baseline assessment has been based on information readily available at the time of undertaking the assessment using the sources listed in Appendix 7.1;
  - During site visits, weather conditions, the time of day and seasonal factors have influenced the visual assessment and photographic record of the Site. Every effort has been made to ensure that the photographs and their locations are representative of the Site and its surroundings; and
  - Access to assess the predicted visual effects from private individual properties has not been possible for all the residential dwellings in the vicinity of the Site, with the assessment of likely visual effects undertaken from vantage points and representative views taken from the nearest publically accessible viewpoint.

### **Baseline Conditions**

- 7.45 The initial step in any LVIA is to review the existing landscape and visual resource in the vicinity of the Development. The primary purpose of the baseline studies are to record and analyse existing landscape features and characteristics and ascertain the value or importance of the landscape and visual resources in the vicinity of the Development. Subsequent field survey work, including the assessment of the approximate visibility of the Site as existing (its Zone of Visual Influence), identifies and records specific sensitive receptors. Figure 7.1 illustrates the Site context.
- 7.46 Landscape effects include the direct and indirect effects of the Development of individual landscape elements and features, as well as the effect upon the general landscape character and quality of the surrounding area. Visual effects consider the changes in the composition of the available views resulting from the Development and changes in the visual

amenity of the visual receptors (which includes residents, users of public open spaces, users of Public Rights of Way (PRoW), and users of roads). A study has been conducted which systematically identifies all the visual receptors that are likely to be affected by the Development and seeks to assess the effect of the Development on these receptors, including its magnitude of effect and significance.

- 7.47 The existing Ebberston Moor South (EMS) Well Site, at approximately 220m Above Ordnance Datum (AOD), is set between the Lingy Plantation to the south and the Wyedale Forest to the east on an elevated moorland plateau, as illustrated in Figure 7.2. The northernmost section of the Site extends west from the EMS Well Site following the course of an access track for approximately 670m, gently ascending the landform to approximately 227m AOD, where it abuts the Ebberston to Dalby Forest Road. This section of the Site lies within the North York Moors National Park.
- 7.48 Heading slightly southwest, the Site broadly follows the course of the Oxmoor Dike and Givendale Dike, before then heading west and passing through historic earthworks and running along the northern edge of a conifer plantation within the Dalby Forest. Upon meeting the Givendale Rigg, at a height of approximately 230m AOD, the pipeline then heads south through the southern part of the Dalby Forest. The Dalby Forest is intersected by a number of valleys culminating in a 'Rig and Dale' landscape.
- 7.49 On leaving the elevated plateau, the Site gradually descends the escarpment to where it crosses beneath the A170 road at approximately 60m AOD and continues through the Vale of Pickering following the course of field boundaries, falling further to approximately 20m AOD where it enters the Knapton Generating Station (KGS). A detailed description of the Site and the Development is provided in Chapter 3.

#### North York Moors National Park

- 7.50 The landscape and seascape of the National Park is a valuable asset in its own right and the landscape was the primary reason for the National Park designation. The National Park is included within a single National Character Area Profile, the 'North York Moors and Cleveland Hills'. The area comprises a diverse landscape which was recognised in the 1947 Hobhouse Report which ultimately led to its designation as a National Park:

*"within a relatively small compass and amazing wealth and variety of beauty."*



- 7.51 This diversity includes open heather moorland, intimate dales, the coast, the open 'big sky' landscape of the Hambleton and Tabular Hills, extensive woodland areas and dramatic geological features such as Sutton Bank, Roseberry Topping, Forge Valley, Newton Dale and the Hole of Horcum. The coastline of the Park forms a distinctive seascape, characterised by high cliffs interspersed with narrow valleys. The National Park also contains a number of designed landscapes which are included on English Heritage's Register of Historic Parks and Gardens, including Rievaulx Terrace, Duncombe Park, Mulgrave Castle and Arncliffe Hall.
- 7.52 The landscape of the National Park is dynamic and has changed over time. In particular, since designation there has been a substantial loss of heather moorland and an increase in conifer plantations, and a loss or degradation of traditional field boundaries. Some of these changes have started to be reversed or mitigated over the past twenty years. Large scale change has now largely ceased and the pressures driving change are now different, for example increases in relatively small scale structures such as road signs.
- 7.53 The 2008 Countryside Quality Counts survey<sup>xii</sup> identified the North York Moors and Cleveland Hills landscape as 'changing, enhancing' which means that the area's landscape character is being strengthened and improved.
- 7.54 In 2003 the National Park Authority commissioned a Landscape Character Assessment of the North York Moors<sup>xiii</sup>. This identified the different landscape character types in the National Park, their characteristics, the pressures for change facing each area and the implication of that pressure. The assessment has been used to inform plans and actions for the National Park, for example the Local Development Framework contains a policy to conserve and enhance the character areas identified in the Landscape Character Assessment. The assessment was refreshed in 2010 to provide an update on pressures for future changes and establish landscape quality objectives.

#### Landscape Character

- 7.55 The Landscape Character Assessment approach is a descriptive approach which seeks to identify and define the distinct character of landscapes that make up the country. This approach recognises the role of all landscapes, not just 'special' landscapes, as contributing factors in people's quality of life, in accordance with the European Landscape Convention<sup>xiv</sup>. It also ensures that account is taken of the different roles and character of different areas, in accordance with the NPPF Core Principles. The description of each landscape is used as a basis for evaluation in order to make judgements to guide, for example, landscape management or development. Figure 7.3 illustrates the extent of landscape character areas/types in the vicinity of the Site, as featured in published assessments. Extracts from

those published assessments are included in Appendix 7.5.

#### National Character Assessment

7.56 As part of Natural England's responsibilities in delivering the Natural Environment White Paper<sup>xv</sup>, Biodiversity 2020<sup>xvi</sup> and the European Landscape Convention, Natural England has developed a series of National Character Area (NCA) profiles. These NCA profiles provide a broad range of information including an outline of the key characteristics of a given area, a description of the ecosystem services provided and how these relate to people, wildlife and the economy, and an array of opportunities for positive environmental change.

7.57 The EMS Well Site and the northernmost section of the Development are located within NCA 25: North York Moors and Cleveland Hills<sup>xvii</sup>. The detailed extracts of this assessment are included in Appendix 7.5, with the key features relevant to this assessment identified below:

- *"Upland plateaux, generally below 400m, dissected by a series of dales – some broad and sweeping but others narrow, steep sided and wooded – creating strong contrasts between open moors and enclosed valleys.*
- *Extensive areas of heather moorland on plateaux and hills, largely under sporting ownership, including large expanses of upland heath land and blanket bog habitats, creating a sense of space, expansiveness and openness.*
- *Upland plateau landscape underlain mainly by sandstone and mudstone of Middle Jurassic age and calcareous sandstone and limestone of Upper Jurassic age...*
- *Some areas of extensive conifer and mixed plantations, especially in the south-east, and broadleaved woodland on steep valley sides.*
- *Valley landscapes characterised by pastoral farming, with a clear demarcation and strong visual contrast between the enclosed fields with some species-rich grasslands and wetlands, farms and settlements, and the bracken-fringed moorlands above.*
- *Drystone walls and hedgerows enclosing the small pastures and meadows in dales and fringing farmland, often replaced by fences in arable areas.*
- *Large-scale arable landscapes to the south and east.*
- *Jurassic sandstones, mudstones and limestone forming a dramatic coastal landscape of high cliffs, high vegetated*

*maritime slopes, and small coves and bays, with coastal towns and compact fishing villages.*

- *Sparsely settled, with scattered farmsteads and small villages, and traditional buildings constructed of local sandstone or limestone and with red pan tile roofs, creating a strong visual unity.*
- *A rich archaeological heritage from many different periods, especially on the moorland plateaux.*
- *Panoramic views over moorland plateaux, ridges and dales and out over surrounding lowland landscapes and the North Sea.”*

7.58 Within the 'Statements of Environmental Opportunity' section, a number of management opportunity guidelines are provided, of which the following are of relevance to the Development:

- *"SEO 1: Protect and positively manage the large areas of open, expansive moorland for the internationally important habitats and species that they support, for the sense of wildness and strong character of the areas, for their ability to sequester carbon, and for the benefits that well managed moorland bring for water quality and flood control...*
- *SEO 3: Protect and improve access to and quiet enjoyment of the countryside, particularly in the North York Moors National Park, conserving the sense of tranquillity and relative remoteness, maintaining public access to the landscape, encouraging specialist forms of recreation appropriate to the area, conserving and providing interpretation of its history and numerous archaeological, biological and geological assets, and protecting the strong sense of place.”*

7.59 Further guidelines are provided in the 'Landscape Opportunities' section, of which the following are of relevance to the Development:

- *"Conserve and protect the open moorland, extensive views, sense of tranquillity and remoteness and the contrasts between enclosed pastoral and wooded valleys and the open moorland.*
- *Maintain clear links between land use and underlying geology and conserve and protect the historic walled and hedged field*

*patterns, and the unity of building materials and styles.*

- *Conserve and protect the mosaics of moorland habitats, existing woodland and veteran trees, species rich grassland, wetlands and other semi-natural habitats.*
- *Conserve and protect the strong network of public rights of ways, linking key landscape features. Also the extensive archaeological evidence and historic sites.*
- *...Manage access, to protect sensitive sites, avoids impacting on sense of remoteness."*

7.60 Overall, the NCA is considered to be of high sensitivity due to a combination of the above characteristics.

7.61 The southern section of the Site, between the A170 and the KGS, lies within NCA 26: Vale of Pickering. The detailed extracts of this published assessment are included in Appendix 7.5, with the key characteristics of the landscape including:

- *"A low-lying flat or gently undulating vale with land rising gently to the foothills of the North York Moors and Cleveland Hills in the north, and to the steep scarp of the Yorkshire Wolds and the Howard Hills in the south and west...*
- *Glacial and lacustrine deposits from the former Lake Pickering give rise to largely fertile land which has been substantially drained through history for agricultural improvement.*
- *The Vale is a largely farmed landscape, predominantly arable and feed grains, with some livestock.*
- *Woodland and tree cover is sparse and comprised of predominantly modern plantations with other trees occurring in hedgerows and along riparian fringes, and in small farmstead copses.*
- *In the eastern part of the Vale fields are large and geometric in shape with boundaries of low hedges or fences with drainage ditches in the lowest-lying areas. To the west smaller and more irregular fields are generally earlier in date, with more grassland, and often enclosed by full hedges with hedgerow trees...*
- *The western part of the Vale is drained by the River Rye and its tributaries, and the eastern end by the River Derwent. Glacial deposits dammed the Derwent's natural outflow into the North*

*Sea near Scarborough, resulting in the proglacial Lake Pickering which eventually outflowed at Kirkham Gorge, diverting the River Derwent inland west and south, where it meets the Rye at Malton and flows southwards out of the Vale. The River Derwent has been designated as being of European importance as a Special Area of Conservation...*

- *Settlement pattern of medieval nucleated settlement following spring lines, transport routes and slightly elevated ground, along the A170 on the northern boundary of the Vale and similarly along the A64 in the south and B1257 in the west. In the centre of the Vale settlements are more dispersed and tend to be on slightly higher ground, many being established after the enclosure and drainage of the land. To the west are concentrated remnants of earlier medieval villages, moated sites and grange farms."*

7.62 Within the 'Statements of Environmental Opportunity' section, a number of management opportunity guidelines are provided, of which the following are of relevance to the Development:

- *"...SEO 3: Manage the agricultural landscape to enhance the sustainable future of farming, strengthen landscape character, protect soils and water, and enhance biodiversity through improved connectivity of semi-natural habitats, creating ecological networks that are resilient to environmental change.*
- *SEO 4: Ensure that developments are successfully integrated into the landscape, making a contribution to biodiversity and habitat networks, and that they do not compromise the sense of tranquillity and openness of the rural landscape, or delivery of other important ecosystem services, including mitigating and adapting to climate change."*

7.63 Further guidelines are provided in the 'Landscape Opportunities' section, of which the following are of relevance to the Development:

- *"Strengthening the local landscape character and distinctiveness in the three 'sub areas' within the Vale: the eastern, central and western areas, for example by restoring traditional boundary*

*features typical of the locality; hedgerows in the west, ditches in the centre and east...*

- *Restoring and extending unimproved grasslands to achieve a strong habitat network resilient to environmental change..."*

7.64 Overall, the NCA is considered to be of medium sensitivity due to a combination of the above characteristics.

7.65 Located approximately 1.5km to the south of KGS is NCA 27: Yorkshire Wolds, included here due to the proximity of this area and the degree to which views are afforded across the Vale of Pickering from its elevated ridges. The detailed extracts are included in Appendix 7.5, with the key characteristics of the landscape including:

- *"A large-scale, expansive, rolling landscape with big skies and long views from the escarpment and plateau, contrasting with the more enclosed, dry, sheltered valleys deeply incised into the Chalk, but with small areas of Lower Cretaceous, Jurassic and Triassic rocks along the western and northern fringes.*
- *Thin, chalky soils support mainly arable farming, with a pattern of large, regular fields crossed by long, straight drove roads with wide verges dating from Parliamentary enclosures of the 18th century. The arable farmland is a priority area for important farmland bird species, while many of the grass verges have calcareous grassland interest providing valuable wildlife corridors...*
- *Remnant tracts of sheep-grazed, unimproved or semi-improved calcareous grassland in steep-sided, dry valleys form distinctive landscapes, with hillsides of floristically rich grasslands which provide specialist habitats for butterflies and moths.*
- *Woodland cover is generally limited, and often linked to steep slopes within enclosed valleys, although there are a number of estates with more significant woodland areas, including Dalton, Garrowby, Sledmere, Londesborough and Warter Priory. Shelterbelts associated with farmsteads are features on the skyline.*
- *There are many large estates and designed parklands with large country houses, estate villages, estate woodlands and medieval deer parks.*

- *Other features include wet flushes, wet meadows and spring-fed fens at the foot of the escarpments, and remnant wetlands and wet meadows adjacent to the chalk streams.*
- *It is generally a sparsely settled landscape with large, scattered farmsteads on high ground, small villages in valleys and small market towns on fringes. Building materials are predominantly brick with pantiles, but sometimes limestone and chalk.*
- *Throughout the NCA, there is extensive evidence of a long history of human occupation and landscape change represented by numerous Neolithic, bronze-age and iron-age monuments and medieval settlements.*
- *A number of chalk, sand and gravel quarries and gravel pits are found throughout the NCA, which are of biodiversity value and provide access for study and education."*

7.66 Within the 'Statements of Environmental Opportunity' section, a number of management opportunity guidelines are provided, of which the following are of relevance to the Development:

- *"SEO 3: Improve opportunities to enhance people's enjoyment of the area while protecting high levels of tranquillity by conserving extensive views and intimate, steep-sided valleys which contribute to sense of place, and by protecting and promoting the extensive historic evidence of past human settlement, landscape change and designed landscapes."*

7.67 Further guidelines are provided in the 'Landscape Opportunities' section, of which the following are of relevance to the Development:

- *"Protect expansive views of rolling hills and dramatic, heritage coastline for remoteness, tranquillity, geology and recreation..."*
- *Conserve archaeological evidence and ground features such as burial mounds, earthworks, settlement sites, barrows and crop marks...*
- *Protect archaeological ground features and historical features, including drove ways and enclosure roads with wide verges...*
- *Manage disused, chalk quarries for their biodiversity value including seeking opportunities for habitat creation and*

*restoration through minerals planning...*

- *Avoid impacting on sense of remoteness and obstruction of clear views...*
- *Support developments that are sensitive to protecting the expansive views of the Wolds..."*

7.68 Overall, the NCA is considered to be of high sensitivity due to a combination of the above characteristics.

#### County Character Assessment

*North Yorkshire and York Landscape Characterisation Project (2011)*<sup>xviii</sup>

7.69 A county-wide Landscape Character Assessment was undertaken by Chris Blandford Associates and published in 2011. The Site lies within three Landscape Character Types (LCTs), which are summarised below. The detailed extracts of this published assessment are included in Appendix 7.5.

#### Limestone Foothills and Valleys (4)

7.70 The Limestone Foothills and Valleys LCT is predominantly situated in the southern part of the North York Moors National Park, encompassing the EMS Well Site and the northern part of the pipeline as far south as the A170. The key characteristics are:

- *"Flat, open summits of the Tabular Hills;*
- *Ancient woodlands which occupy valley sides;*
- *Prehistoric mounds and burial sites preserved within moorland or woodland;*
- *Strong visual unity within settlements and sense of harmony with the surrounding landscape;*
- *Traditional farm buildings constructed of pale limestone walls and red pantile roofs;*
- *Distinctive cultural landscape with medieval villages located at the spring line, common arable fields at the base of the hill, and summer pastures above;*
- *Extensive coniferous plantations are a key feature of the current landscape;*
- *Contrast between the very narrow wooded valleys, giving a very*



*strong sense of enclosure, with the open arable tops of the Tabular Hills."*

7.71 Sensitivity to change issues include:

- *"Overall high visual sensitivity as a result of extensive long distance views to adjacent Landscape Character Types, strong intervisibility with surrounding landscapes and the flat open summits of the Tabular Hills;*
- *Views to and from this Landscape Character Type are sensitive to the introduction of tall vertical structures such as wind turbines or communications masts;*
- *High ecological sensitivity as a result of the numerous linear belts of ancient woodland lining the dale sides, coupled with numerous SSSI...*
- *High landscape sensitivity as a result of the strong landscape and settlement pattern, with strong visual unity in settlement and distinctive cultural patterns comprising medieval villages located at spring lines."*

7.72 Overall, the character area is considered to be of high sensitivity due to a combination of the above characteristics.

#### Open Carr Vale Farmland (22)

7.73 The Open Carr Vale Farmland LCT comprises a predominantly flat landscape at the foot of the Limestone Foothills and Valleys which provides a sense of enclosure to the north. The central part of the proposed pipeline route between the A170 and near to the KGS lies within this LCT. The key characteristics of this LCT are:

- *"Predominantly flat, arable farmland which encompasses medium to large scale rectangular fields;*
- *The River Derwent is a key feature, the course of which, gently meanders east-west through this Landscape Character Type;*
- *Underlain by predominantly peat soils;*
- *Fields are delineated by a network of drainage ditches and dikes which are often colonised by reeds and willows;*
- *Tree cover is relatively sparse, with few woodlands, other than*

*isolated small plantations, resulting in a strong sense of openness;*

- *Historically this landscape would have been dominated by a patchwork of carrs, ings, moors and marshes. The legacy of this is apparent within place names;*
- *Human influence is apparent, in the form of straightened drainage channels, cuts and ditches;*
- *Settlement pattern comprises isolated, scattered farmsteads."*

7.74 Sensitivity to change issues include:

- *"High visual sensitivity as a result of the predominantly open character and flat landform, which facilitates long distance open views across the landscape and promotes strong intervisibility with adjacent Landscape Character Types;*
- *Low ecological sensitivity, resulting from the fact that much of this Landscape Character Type encompasses improved agricultural land.*
- *Moderate landscape and cultural sensitivity as a result of the presence of a patchwork of historic drainage features (ditches and dikes), moated sites and grange sites."*

7.75 Overall, the character area is considered to be of medium-high sensitivity due to a combination of the above characteristics.

#### Sand and Gravel Vale Fringe (30)

7.76 This flat to gently sloping LCT encompasses a series of sand and gravel superficial deposits which mark the transition between the Vale of Pickering to the north and the rising Chalk Wolds to the south. The southernmost section of the proposed pipeline route and the KGS fall within this LCT. Key characteristics include:

- *"Pockets of sand and gravel deposits which form a transition zone between the Vale of Pickering to the north and the Chalk Wolds to the south;*
- *Striking settlement pattern with villages located along the spring line;*
- *Historic course of roads which are located at the scarp foot;*

- *Buildings are predominantly constructed from chalk, reflecting their location in close proximity to supply from the Chalk Wolds to the south;*
- *Numerous archaeological sites which attest to previous human activity; and*
- *Strong intervisibility with adjacent Enclosed Vale Farmland Landscape Character Type."*

7.77 Sensitivity to change issues include:

- *"High visual sensitivity as a result of strong intervisibility with the Enclosed Vale Farmland Landscape Character Type and open views along the Sand and Gravel Vale Fringe;*
- *Low ecological sensitivity resulting from the fact that this landscape predominantly consists of improved agricultural fields; and*
- *High landscape sensitivity as a result of the striking settlement pattern of villages located along the spring line, archaeological sites and designed landscapes."*

7.78 Overall, the character area is considered to be of high sensitivity due to a combination of the above characteristics.

#### North York Moors National Park Landscape Character Assessment (2003)

7.79 White Young Green Environment, in association with North York Moors National Park Authority, has produced a Landscape Character Assessment of the area encompassing part of the Site. This Landscape Character Assessment is also referred to in The North York Moors National Park Authority Design Guide, Part 3: Trees and landscape Supplementary Planning Document, Adopted June 2008. The northernmost section of the Site, including the EMS Well Site and the proposed pipeline route between the EMS Well Site and Warren House Farm, is located within the Dalby Forest (Area 3C), a sub-division of the wider Forest LCA. The detailed extracts of this assessment are included in Appendix 7.5, which identify the following landscape characteristics of the Dalby Forest (Area 3C) apparent in the vicinity of the Site:

- *"A large and diverse area of coniferous and deciduous forest, situated on the Tabular Hills and overlying Middle and Lower*

*Calcareous Grit from the Corallian Group.*

- *Landform is typical of the Tabular Hills landscape; a gently graded plateau towards the north of the forest (at a maximum height of 240m) falls away towards the Vale of Pickering in the south. The plateau is deeply incised by river valleys with steep sides and occasional clifflines and by shallow dry valleys mainly orientated in a north east to south west direction. The forest extends down the edge of the north facing scarp with its irregular wavelike form, the top edge of which allows views across Langdale Forest to the north.*
- *The extensive forestry includes a large area of recently felled and newly planted areas. The forest contains a diverse range of habitats, including sizable blocks and linear belts of deciduous woodland are present particularly within valleys and on steeper slopes. Species present include larch, Scots pine, birch, cherry, ash, rowan and oak. A small area of upland heath – Troutsdale Moor – is included to the east of the character area. Small areas of rough pasture and fen occur. In some areas there is an abrupt geometric edge to the forest.*
- *Some areas of remnant farmland occur within openings in the forest. Fields of pasture are divided by both stone walls and fences.*
- *The public vehicular access to the forest is via Dalby Forest Drive, a toll road, with numerous car parking, picnic areas and other facilities for tourists located along its length, or via Ebberston. Tracks through the woodland, in a loose grid pattern, provide access for forestry vehicles.*
- *The small hamlet of Low Dalby is the main settlement in the area situated in a narrow opening in the forest in the valley of Dalby Beck. Other settlements are limited to very occasional isolated farms within the open areas."*

7.80 Overall, the character area is considered to be of high sensitivity due to a combination of the above characteristics.

## District and Borough Character Assessment

*The Landscapes of Northern Ryedale: An Assessment of the Vale of Pickering and the Fringe of the North York Moors National Park, with Management Guidelines for their Future*<sup>xix</sup>

7.81 Gillespies, in association with Ryedale District Council, prepared '*The Landscapes of Northern Ryedale: An Assessment of the Vale of Pickering and the Fringe of the North York Moors National Park, with Management Guidelines for their Future*', published in August 1999. Beyond the National Park Boundary the Site lies within the area characterised in *The Landscapes of Northern Ryedale*, encompassing four of the LCTs. A summary of the LCTs through which the proposed pipeline crosses is set out below and their detailed extracts are included within Appendix 7.5.

### High Eastern Farmland (Character Type G) of the Fringes of the Moors

7.82 The section of the Site from the edge of the National Park boundary to the A170 falls within this LCT. The High Eastern Farmland lies at the eastern end of the Tabular Hills and lies above 100m AOD. To the north and west the area is bounded by the North York Moors National Park. The area slopes south to the Vale of Pickering, increasing in steepness in the vicinity of the A170. The landscape has been carved into sweeping forms by relatively broad dry valleys which have eroded the upland to leave undulating ridges extending southwards down the dip slope. Key characteristic features of this LCT include:

- *"Elevated large scale sloping plateau dissected by dry valleys.*
- *Open rural landscape with generally expansive views;*
- *Extensive network of drystone walls;*
- *Isolated farms;*
- *Woodland generally follow the landform; and*
- *Shallow and elevated valleys of pasture."*

7.83 Overall, this LCT is considered to be of high sensitivity due to a combination of the above characteristics.

### Linear Scarp Farmland (Character Type F)

7.84 A small portion of the Site either side of the A170 is located in this character type. This is an area of sloping and relatively open character, indented by dry valleys, which creates a strong, smoothly undulating profile. Fields are generally of medium size and are bounded by

hedgerows with few hedgerow trees. An important characteristic of the escarpment's field mosaic is the relic of an open-field cultivation system which is arranged in a pattern of long linear field orientated north to south on the slopes. Key characteristic features are:

- *"Panoramic views from the escarpment ridge out across the Vale of Pickering to the south;*
- *Attractive rural qualities with a medium to large scale field mosaic containing prominent hedgerows and woodland blocks;*
- *Settlements concentrated along the foot of the slope;*
- *Dynamic, rhythmic quality to the undulating relief;*
- *North south orientated dry valleys and roads; and*
- *Strong medieval field pattern around Pickering."*

7.85 Overall, the character type is considered to be of medium-high sensitivity due to a combination of the above characteristics.

#### Open Vale Farmland (Character Type H) of the Vale of Pickering

7.86 The central section of the Site from the south of the A170 to north of the railway line at the KGS falls within this character type. The open vale farmland covers much of the eastern Vale, generally following the course of the rivers Derwent and Hertford. This is a flat and low lying landscape, lying at approximately 23m to 24m AOD, which forms a visual contrast with the steeply rising chalk escarpment to the north and south. This intensively farmed landscape sustains predominantly arable cultivation, which is open with few hedgerows and trees, allows long distance views. Key characteristic features are:

- *"Extremely flat terrain;*
- *Strongly rural character;*
- *Extensively drained landscape;*
- *Open and expansive; and*
- *Sense of relative seclusion and inaccessibility."*

7.87 Overall, the character type is considered to be of medium sensitivity due to a combination of the above characteristics.

#### Wooded Open Vale (Character Type J)

7.88 The southern section of the Site from just north of the railway line at Knapton to the KGS is

located in this character type. This character type includes the gently rising land that forms part of the lower slopes of the Wolds escarpment. This is a predominantly low lying landscape of drained arable fields and pastures, bounded by hedgerows with few hedgerow trees. It has few prominent features. Its main differentiating characteristic to the adjacent Open Vale Farmland LCT is the greater number of woodland blocks and shelterbelts. Notable features include Scampston Park surrounded by a formal deer park, designed by Capability Brown in the eighteenth century, and Knaption Hall to the east of Rillington. Key characteristic features are:

- *"Flat low lying terrain;*
- *Open countryside; and*
- *Long views punctuated by geometric woodland blocks."*

7.89 Overall, the character type is considered to be of medium-high sensitivity due to a combination of the above characteristics.

#### Site Appraisal

7.90 A number of photographs of the EMS Well Site, pipeline route and KGS were taken during site visits and are included within Appendix 7.2. These photographs serve to demonstrate the character of the Site and the locations from which photographs were taken are shown on Figures 7.4 to 7.7.

7.91 Due to the length and nature of the Development, the following paragraphs discuss the baseline conditions in sections as it progresses from the EMS Well Site to the KGS, addressing elements such as built form, vegetation, topography and other notable features accordingly.

#### *EMS Well Site to Warren House Farm*

7.92 The Site extends westwards from the EMS Well Site (illustrated in Site Appraisal Photograph A) aligning with the access track for approximately 670m, within the North York Moors National Park, until crossing the metalled access road from Ebberston to Dalby Forest. Site Appraisal Photograph B demonstrates the screening effect of vegetation surrounding the EMS Well Site. Plantation woodland wraps around the EMS Well Site to the north and east and a substantial hedgerow (including species of birch, cherry and Scots Pine) abuts the southern boundary, following the course of the Tabular Hills Walk. Groups of mature Scots Pine are located adjacent to the metalled road to the west of the EMS Well Site, with

vegetation covering Oxmoor Dyke serving to provide additional enclosure.

- 7.93 The Site then passes through historic earthworks and runs along the northern edge of the plantation within the Dalby Forest. Site Appraisal Photograph C captures the topographical character in this location, with dry valleys orientated north-east to south-west, presenting a series of ridges and valleys with woodland on the higher ground, and on the valley sides rough pasture and occasional dikes, a distinguishing trait of this part of the North York Moors. These elements combine to strongly reflect the landscape character as identified in the North York Moors Landscape Character Assessment, Character Area 3C.
- 7.94 The Site then follows an existing track through Dalby Forest, extending south-west towards Warren House Farm, where the land slopes downwards towards the Vale of Pickering. Site Appraisal Photograph D illustrates the enclosed nature of the corridor, which forms the boundary of the North York Moors National Park in this vicinity and accommodates an existing pipeline route and PRoW 25.4/6/1, whilst Site Appraisal Photograph E illustrates the open farmland in the vicinity of Warren House Farm.

*Warren House Farm to the A170 Road*

- 7.95 From Warren House Farm the Site cuts across the agricultural landscape in a broadly south-westerly direction towards the disused Weasdale Quarry and the dry Weasdale, descending the escarpment rapidly. Extensive views across the Vale of Pickering are afforded from this sloping landform. The route then abuts the A170 road within a pastoral field as the land is perceived to level out slightly. Site Appraisal Photograph F illustrates the view from the A170 up towards the escarpment.
- 7.96 These elements of the escarpment are representative of the landscape character as identified in the North York Moors Landscape Character Assessment, Character Area G.

*A170 Road to the River Derwent*

- 7.97 The Site traverses the A170 adjacent to Weasdale Quarry following the hedgerow on the southern side of the road where the landform descends further into the vale towards Wilton Ings Lane/Malton Lane (at approximately 20m AOD) as illustrated in Site Appraisal Photograph G. Wilton Ings Lane is bound by deciduous hedgerows on either side. From this location the Development follows the alignment of PRoW 25.111/4/1 (Site Appraisal Photograph H) turning to the south-west where it passes by Fox Covert and continues to Friar Dyke where it cuts through a mature hedgerow. South of Friar Dyke, the route again follows the course of hedgerow boundaries to Marishes Lane and beyond to the River



Derwent as illustrated in Site Appraisal Photograph I and Site Appraisal Photograph J.

- 7.98 This intensively farmed open landscape with few hedgerows and trees, sustaining predominantly arable cultivation and affording long-distance views, combines to strongly reflect the landscape character as identified in the North York Moors Landscape Character Assessment, Character Type H.

*River Derwent to the KGS*

- 7.99 South of the River Derwent the Site crosses through a mature hedgerow and from here, traverses arable fields following field boundaries where it passes in proximity to Knapton Lodge. At Knapton Lodge the Development crosses in the vicinity of a mature avenue of trees at the B1258/Malton Road.

- 7.100 From Malton Road the Site is aligned in a south-easterly direction across arable fields (illustrated in Site Appraisal Photograph K) and under a power line to a point where it crosses the Eastfield to Malton railway line close to the KGS, the location of which is illustrated in Site Appraisal Photograph L. At the KGS the Development crosses Difford Beck dike to the west where the field is enclosed by dense mature trees on three sides. The densely vegetated boundaries of the KGS contain the Site and the pipeline's point of entry at this location.

- 7.101 The landscape surrounding the KGS reflects the landscape character of Chapter Type J as it is a predominantly low lying landscape of drained fields bound by hedgerows with few hedgerow trees. Prominent features are scarce. The main differentiating characteristic to the adjacent Open Vale Farmland LCA is the greater number of woodland blocks and shelterbelts present in the landscape.

*Tree Condition Survey*

- 7.102 A Strategic Woody Vegetation Survey of existing vegetation on the pipeline route has been undertaken by Forbes – Laird Arboricultural Consultancy (FLAC) which is provided in Appendix 7.3. The condition and management recommendations for woodland, tree belts, individual trees and hedgerows has been provided for the vegetation that occurs at the EMS Well Site and KGS and along the pipeline route. The tree condition survey classifies trees within the Site according to the following grading system:

- Category A – Trees of high quality
- Category B – Trees of moderate quality
- Category C – Trees of low quality

7.103 In addition, the FLAC survey confirmed that there are four hedgerows that cross on or lie near the pipeline route that merit the potentially 'important hedgerow' definition under the Hedgerow Regulations<sup>xx</sup> on arboricultural grounds. All those woodlands, trees, hedgerows and tree groups located within or in proximity to the pipeline corridor are identified and illustrated with reference to Appendix 7.3.

#### Tree Preservation Orders

7.104 There are no trees covered by Tree Preservation Orders (TPOs) either within or immediately adjacent to the Site.

#### Visual Appraisal

7.105 A visual appraisal has been undertaken to determine the relationship of the Site with its surroundings and its visibility within the wider landscape. An assessment of the visibility of the Site from existing properties (nearest publically accessible locations), roads, PRoW and within the National Park was carried out in January, March and May of 2013 with an additional visit undertaken in June 2014. A set of annotated photographic panoramas are included in the supporting illustrative material (Site Context Photographs 1-15 in Appendix 7.2).

7.106 The effectiveness of vegetation as a screen depends to a considerable extent on its scale. A large mature feature such as Dalby Forest will form a significant screen throughout the year, but a hedge or an intermittent tree belt within the vale landscape may only be effective during the summer months. Whilst smaller features, such as hedgerows and individual trees can be very important, particularly when their combined effect is taken into account, they cannot be considered to be substantial or wholly effective screening features or visual barriers, in part due to the seasonal nature of their effect. Of the larger features adjacent to the Development, the coniferous plantation within Dalby Forest and the clusters of woodland within the southern end of the Vale of Pickering and clusters of woodland surrounding farm buildings are considered dense visual barriers within the local landscape.

7.107 The visibility study of the Development commenced with desktop identification of areas of land from which potentially there could be views of Development. This was followed by subsequent site visits to check the extent of the visual envelope, and to confirm the most exposed/contained parts of the Development in visual terms. Due to the degree of screening afforded by Dalby Forest, distant views of the EMS Well Site and the initial sections of the Development are not afforded. Visibility is therefore limited to near and middle distance views within this area. Elsewhere along the Site, views are more expansive

across the open vale landscape, which is particularly evident on the escarpment overlooking the vale.

7.108 Figure 7.8 – Figure 7.10 illustrate the location of the photographic viewpoints and identify the key views towards and into the Development from properties, roads and PRow within the surrounding landscape. The potential visibility of the Development is largely determined by landform or topography as adjacent areas of elevated land, such as ridgelines, may block or curtail views towards the Site. In addition, land cover plays a role in determining potential visibility, as areas of woodland, tree belts or built form within the landscape may contribute further to blocking, filtering or curtailing views.

*Near Distance Views (0 – 400 metres)*

7.109 Near distance views of the Site are obtained from the roads and PRow which abut its boundaries, although the extent of visibility is contained by intervening vegetation. Site Context Photographs 1 - 6, 10 and 13, in Appendix 7.2 illustrate near distance views.

7.110 Site Context Photograph 1 is taken from the access road from Ebberston to Givendale Head Farm, High Scamridge Farm and the Dalby Forest. The view illustrates the land gently rising up to the Dalby Forest with woodland vegetation on the surrounding ridges in the landscape. The substantial hedgerow and tree belt along the southern edge of the access track from the access road to Dalby Forest and the existing EMS Well Site is distinctive, with the vegetated Givendale Dike and the Dalby Forest visible to the north-west. The Development will pass in a westerly direction, located beyond the vegetation along the access track to the EMS Well Site and the Givendale Dyke, and then into the Dalby Forest.

7.111 Site Context Photograph 2 is taken from the North York Moors National Trail which runs parallel with the access track to the EMS Well Site. From this vantage point the EMS Well Site forms part of the view on the approach into the south-eastern flank of Dalby Forest. A low stone wall and scrub planting separates the National Trail from the access track and the Development and in places this separation is more pronounced by the size and density of intervening vegetation (comprising medium sized trees including hawthorn and birch). The view is limited by tall vegetation screening views to the south and by plantation woodland screening views to the east and north.

7.112 Site Context Photograph 3 is taken in the vicinity of Oxmoor Dike, along the access track to Givendale Head and High Scamridge Farms. Open arable fields are found along the length of this local road towards Ebberston. The vegetated bank forming Oxmoor Dike runs across the view, with Dalby Forest featuring in the background. The Development runs from the

foreground into the background of the view, perpendicular to the viewer.

- 7.113 Site Context Photograph 4 is taken from PRoW 25.4/6/1, on the alignment of the Development as it emerges from the wooded corridor into an opening within the Dalby Forest. PRoW 25.4/5/1 runs along the boundary of the North York Moors National Park, which is located to the right of the PRoW in the view. The elevated open nature of the ridge in this location is evident, with views out over the wider landscape visible above the woodland on the lower slopes of the ridge. The Development runs south along the alignment of PRoW 25.4/6/1 and then passes back into the Dalby Forest through an existing break in the woodland in the centre of the view.
- 7.114 Site Context Photograph 5 is taken from the access road to Warren House Farm on the edge of the escarpment between Dalby Forest and the Vale of Pickering. This is designated an Area of High Landscape Value. To the right of the view Warren House Farm is visible at the top of the escarpment; while in the middle ground Wilton Heights Plantation is visible. To the left there are views out to the Vale of Pickering. The pipeline route will pass between Warren House and Wilton Heights Plantation travelling down the escarpment to where it crosses the road at Weasdale Quarry. This is an arable landscape with open views across the pipeline route and beyond to the Vale of Pickering. Low hedgerows, small woodland plantations and intermittent trees provide some element of screening.
- 7.115 Site Context Photograph 6 is taken from the A170 between Wilton and Allerston to the west of the Development at the base of the escarpment. Travelling along this section of the A170, views are generally open across the Vale of Pickering to the south. To the left of the view the Development will pass behind the wooded copse crossing through arable fields and will then follow the hedgerow to the south of the A170 into the vale.
- 7.116 Site Context Photograph 10 is taken from Marishes Lane looking north close to where the Development crosses the lane. Views along Marishes Lane are enclosed by dense wooded hedgerows limiting the extent to which the vale landscape is perceived. In the distance Dalby Forest is visible on the ridge and from here the Development crosses down the escarpment into the vale between Allerston Cliff and Wilton. Once across the A170 the Development follows field boundaries to the south where it passes in the middle ground of the view to the west of Crake Hall Cottage.
- 7.117 Site Context Photograph 13 is taken from Malton Road close to where the Development crosses at Knapton Lodge. Arable fields are visible in the foreground beyond which the avenue and Knapton Lodge are visible. The Site is visible adjacent to the avenue in the middle ground.

*Middle Distance Views (400 – 1000 metres)*

- 7.118 Middle distance views towards the Site are limited. This is due mainly to the nature of the undulating topography which the Development occupies in addition to the extent of intervening vegetation and built form. Site Context Photographs 7, 8, 11 and 14 in Appendix 7.2 illustrate middle distance views.
- 7.119 Site Context Photograph 7 is taken from the eastern edge of Wilton, off Cliff Lane, and provides panoramic views out across the vale landscape and north along the escarpment which is located within an Area of High Landscape Value. Farm buildings and telegraph poles are noticeable features in this otherwise open vale landscape. The Development crosses down the escarpment from Warren House Farm and then behind the wooded copse in the left of the view before continuing down into the vale towards the KGS (not visible in the distance).
- 7.120 Site Context Photograph 8 is taken from Malton Lane looking north-east towards the Site. The view is representative of views when travelling along rural lanes within the vale landscape where distant views are afforded towards the escarpment. The elevated open nature of the ridge in this location is evident, from where the low lying vale meets the escarpment to form a prominent ridge within views. The Development runs south down the escarpment close to Dalby Forest passing behind Cliff Edge and Allerston Cliff Farms where it crosses the A170 into the vale. From there it follows field boundaries further south.
- 7.121 Site Context Photograph 11 illustrates the view east from further west along Marishes Lane where views are open across the vale towards the escarpment and Dalby Forest in the background. The nature of the view attained is influenced by hedgerows and intervening treebelts within the vale. The Development crosses down the escarpment between Dalby Forest and Wilton and into the vale following field boundaries. From this location the Development crosses the vale in the distance beyond a series of intervening hedgerows and treebelts.
- 7.122 Site Context Photograph 14 is taken from the access road to KGS at the junction with PRoW 25.81/12/1. Views are contained within the arable field in the foreground by dense hedgerows, treebelts and woodland blocks in this more wooded part of the vale. Distant views are however obtained towards the wooded ridge on the southern side of the vale. The Development will follow the alignment of the access track to the KGS between Ochre Farm and West Ochre woodland.

*Long Distance Views (+1000 metres)*

- 7.123 Long distance views towards the Site are obtained from a limited number of publicly accessible locations from the northern escarpment and within the valley floor of the Vale of Pickering looking north. Long distance views towards the KGS are limited by the screening effect of the woodland and the flat nature of the valley floor and the hedgerow and tree-lined field pattern of the Vale of Pickering. Site Context Photographs 9, 12 and 15 in Appendix 7.2 illustrate the typical long distance view afforded.
- 7.124 Site Context Photograph 9 is taken from the entrance to the Vale of Pickering Caravan Park off Allerston Lane looking west across the vale. Distant views to the right of the view are afforded to the escarpment while views west are filtered by hedgerows and mature treebelts. Views are open in the immediate foreground across arable fields; however the low lying nature of the topography within the vale combined with mature hedgerows screens views to the west. The Development crosses down the escarpment between Allerston Cliff and Wilton following field boundaries within the vale in the distance.
- 7.125 Site Context Photograph 12 is taken from the entrance to Ochre Farm at the junction of Malton Road and PRoW 25.81/8/1 looking south-west towards the Site. The view illustrates the nature of views along Malton Road where views across the vale are filtered by dense hedgerows and mature treebelts. Farm buildings and woodland copses are noticeable features in an otherwise flat landscape and the escarpments on both sides of the vale contain distant views. Ings Farm is visible to the foreground. To the left of the view the KGS is screened within Knaption Wood while transmission lines are visible along the alignment of the railway. The Development follows field boundaries in the distance beyond a series of intervening hedgerows and treebelts emerging to cross Malton Road close to Kanpton Lodge. From here it crosses arable fields and follows the alignment of the railway line to the KGS.
- 7.126 Site Context Photograph 15 is taken from the elevated southern escarpment along the Wolds Way National Trail (PRoW 25.47/11/1) looking north across the Vale of Pickering. Views along the PRoW are curtailed by woodland blocks; however breaks in woodland provide distant panoramic views across the vale towards Dalby Forest on the elevated landform. The wooded nature of the south of the vale is apparent from this location, with the location of the KGS within woodland also visible. The Development however is difficult to perceive in this expansive view.

*Summary of Visual Appraisal*

- 7.127 A summary of the visual appraisal is shown on Figures 7.8 – 7.10, which demonstrate the features which influence views towards the Site. The visibility study demonstrates that the northern sections of the Development including the EMS Well Site are generally well screened by mature woodland. There are however open views of the Development immediately adjacent to where it follows the alignment of the Tabular Hills Walk within the North York Moors National Park. Views from elsewhere within the National Park are screened by forestry (coniferous woodland).
- 7.128 Views in the locality of the EMS Well Site, and along lengths of the Development within the Dalby Forest are contained to the immediate vicinity by the existing vegetation. The woodland plantations effectively curtail views to the Site from within the North York Moors National Park, with views limited to the fringes of the Dalby Forest and a few more open locations on the edge of the North York Moors National Park, such as around Givendale Head and Scamridge High Farms and Warren House Farm.
- 7.129 Where the Development crosses the elevated open forest plateau, views to the Site are again limited to the immediate locality (PRoW 25.4/6/1). Land falls sharply to the west and east of the Site into incised valleys north of Warren House Farm, such that views from the North York Moors National Park are curtailed by the combination of topography and vegetation. Views to the south are influenced by the escarpment between the open forest plateau and the Vale of Pickering which curtails views to immediate elevated locations or long distance views from the valley floor.
- 7.130 As the Development traverses down the escarpment, partial views of the Site are obtained where the orientation of the view, intervening topography and breaks in vegetation allow views such as along the access drive to Warren House Farm. Further south within the vale landscape, distant views are afforded north towards the escarpment, however these are only obtained through breaks in hedgerows and treebelts along local roads. Views from Allerston and Wilton are curtailed by topographic variation which limits views. There are views from the eastern edge of Wilton across the vale and along the escarpment to the north.
- 7.131 The southern end of the vale is more closely associated with a wooded vale landscape where wooded copses and mature treebelts limit distant views. The KGS is enclosed within woodland which curtails views of the facility from the surrounding vale landscape and the elevated escarpment to the south.

*Sensitivity of Visual Receptors*

7.132 When considering the potential visibility of the Development, a number of visual receptors have been identified within the visual envelope of the Site, including residential properties, PRoW and roads with potential to observe the Development. The methodology used to determine their corresponding sensitivity to visual effects is outlined in Appendix 7.1 and their sensitivity is identified in Appendix 7.6.

**Likely Significant Effects**

7.133 In this section, an assessment of the landscape and visual effects of the Development without mitigation beyond that directly incorporated into the design of the Development has been undertaken for the predicted effects during construction and operation. In latter sections, the residual effects of the Development after mitigation are described. A detailed description of the Development is provided in Chapter 3.

7.134 These effects are assessed at four stages during the course of the Development and include:

- Construction Phase - including retention and protection of existing vegetation, site clearance, ground clearance, the erection of temporary construction plant and compounds, and the installation of the pipeline;
- Completed Development – Year 1; it is assumed that many of the embedded landscape mitigation measures that have been undertaken will start to establish;
- Completed Development – Year 15; it is assumed that the majority of landscape mitigation measures will begin to reach maturity; and
- Decommissioning and Restoration.

## Construction

7.135 It is anticipated that the construction of the Development will include the following activities which are summarised below and set out in further detail in Chapter 5:

- Site preparation (including excavation and grading);
- Provision of infrastructure;
- Provision of stockpiling and welfare compounds;
- Construction; and
- Landscaping.



- 7.136 As set out in Chapter 5, site preparation will result in landscape and visual effects which will include the temporary erection of a construction compound including site cabins, construction of a laydown area, ground modelling works including topsoil stripping and stockpiling for later use and the installation of surface water management measures. In addition, the erection of temporary fencing along the boundaries of the working width of the proposed pipeline route corridor will be installed as will gates and stiles wherever public access is required. Appendix 5.1 sets out the construction parameters for the works to be undertaken at the EMS Well Site, along the proposed pipeline route and at the KGS.
- 7.137 The construction of the facilities and structures required at the EMS Well Site, the KGS and along the length of the proposed pipeline route will occur simultaneously. The construction of the pipeline route between the EMS Well Site and the KGS will necessitate the temporary erection of fences along the boundaries of the working width of the Site (30m). The assessment is on the basis that the pipeline route will be, for the most part, constructed using an open-cut method. However, where crossing the railway, roads and the River Derwent, auger boring, directional drilling or a suitable alternative installation technique will be utilised.
- 7.138 A combined gas producer, water producer and annulus injector well will be constructed at the EMS Well Site which will require the use of a workover rig. Subsequently an additional water production and re-injection well will be drilled at the EMS Well Site.

### *Landscape Effects*

#### Effects on Landscape Features

- 7.139 The construction phase will result in a number of alterations to the landscape, some of which will be temporary during construction (i.e. the introduction of stockpiles, plant and machinery and associated activities), while some be longer term and will be apparent during the operational phase. The principal activities that will have an effect upon landscape features during the enabling works and construction phase are set out in
- 7.140 Table 7.2.

**Table 7.2: Construction Phase – Effects on Landscape Features**

<b>Construction Activity</b>	<b>Effect on Landscape Features</b>
Loss of landscape elements and features	The loss of some existing elements such as arable farmland, isolated trees and sections of existing hedgerows within the Site. Four

Construction Activity	Effect on Landscape Features
	hedgerows considered potentially important under the Hedgerow Regulations may be adversely effected due to their proximity to the working corridor (HR 9012, HR9014, HR9015 and HR 9020) – Appendix 7.3. The removal of existing agricultural land will create a new temporary landscape that is uncharacteristic with its location. The loss of elements will be concurrent and will not take place at the same point in time.
Introduction of new temporary elements including material stockpiles, plant and machinery, site compounds and fencing.	The introduction of new, contrasting temporary elements within the Site will form a new landscape pattern, altering the way in which the landscape is perceived.
Increased movement of plant and machinery on public and private roads within the Site and surrounding landscape.	Increases in the movement of traffic and noise levels will generate a series of shifting patterns across the Site as work progress. Consequently the level of tranquillity experienced will be temporarily diminished within the landscape.

7.141 Although the construction phase will result in a number of alterations to the fabric of the landscape, these are for the most part reversible and relatively short term in nature. No additional landscape features will be lost at the EMS Well Site or KGS. As a result a medium magnitude of effect will arise during the construction phase, resulting in a Moderate Adverse effect.

#### Effects on Landscape Character

7.142 Construction activities, although discordant with the locality, will not be perceived over a wide area. The extent of landscape features affected during the construction phase, as outlined in

7.143 Table 7.2, is limited to the working corridor.

7.144 Table 7.3 below outlines the changes that will occur, and resultant effects, for each landscape character area considered in this assessment.

**Table 7.3: Construction Phase - Effects on Landscape Character**

LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
<b>National Character Area Profiles</b>		
25: North York Moors and Cleveland	High	The removal of hedgerows, conifer woodland, and the stripping of topsoil along a 30m working width will temporarily directly alter the fabric of the landscape, with the introduction of large scale plant and machinery (and

LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
Hills		associated vehicular movements) exerting its influence over the landscape reducing the sense of remoteness and tranquillity. Given the scale of the borehole drilling rig, these activities will be a noticeable presence in the landscape in and around the EMS Well Site. Similarly, the presence of plant and machinery in the lowland landscape to the south will alter the panoramic views attained, a key characteristic of this landscape. These alterations however will not be perceived over a wide area, especially so to the north where woodland provides a sense of enclosure. On that basis, the magnitude of effect is considered to be small, and when considered alongside the high sensitivity of the landscape, a Moderate Adverse effect will occur.
26: Vale of Pickering	Medium	Construction activities in this low-lying gently undulating farmland vale landscape will result in the loss of hedgerows, the occasional hedgerow tree or section of tree belt. Construction will also necessitate the stripping of topsoil along a 30m working width, directly impacting the landscape. The introduction of plant and machinery, and their associated vehicular movements, will temporarily compromise the sense of tranquillity in this rural landscape. Despite this, these changes will not be perceived over a wide area and will only be discernible within the immediate vicinity of the Site. On that basis, the magnitude of effect is considered to be small, and when considered alongside the medium sensitivity of the landscape, a Minor Adverse effect will occur.
27: Yorkshire Wolds	High	Although direct impacts will not occur within this landscape, the presence of construction plant and machinery in the Vale of Pickering below, to the north, will discernibly alter the setting of this landscape and the way in which it is perceived, reducing the sense of remoteness. The magnitude of effect is considered to be very small, and when considered alongside the high sensitivity of the landscape, a Minor Adverse effect will occur.
<b>North Yorkshire and York Landscape Characterisation Project</b>		
Limestone Foothills and Valleys (4)	High	The construction activities will necessitate the temporary removal of agricultural land as the Development heads west from the EMS Well Site towards the Oxmoor Dikes, with disruption to this earthworks feature. West of this feature additional land will be temporarily altered for the storage of stockpile materials. Where the Site coincides with the Dalby Forest, coniferous woodland will be removed along the 30m working width, with another larger area of agricultural land temporarily utilised for the storage of materials in the vicinity of Warren House. As the Development descends the escarpment, construction activities will necessitate additional land clearance and the removal of a section of hedgerow vegetation. The works, and plant and machinery introduced into the landscape, will generally not be perceived over a wide area due to the extent of woodland enclosure; albeit less so on the face of the escarpment overlooking the Vale of Pickering. Therefore, the magnitude of effect is considered to be small, and when considered alongside the high sensitivity

LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
		of the landscape, a Moderate Adverse effect will occur.
Open Carr Vale Farmland (22)	Medium-High	The introduction of plant and machinery in this landscape will be noticeable in the immediate vicinity of the Site, but also perceived from the adjoining landscapes due to its low-lying form. The removal of hedgerow vegetation, a small section of a tree belt and the temporary loss of agricultural land will be discernible; however, it is the movement of vehicles and the presence of auger boring or directional drilling machinery to cross roads/river etc and consequent reduction in the level of tranquillity that will mainly alter the perception of the landscape in localised areas. On that basis, the magnitude of effect is considered to be small, and when considered alongside the sensitivity of the landscape, a Moderate Adverse effect will occur.
Sand and Gravel Vale Fringe (3)	High	The temporary loss of agricultural land and hedgerow vegetation, alongside the introduction of plant and machinery and drilling equipment (to traverse the railway line) will be apparent in the immediate vicinity of the Site. However, only a very small fraction of this landscape will be directly impacted, with vast swathes of the landscape remaining unaltered. Therefore the magnitude of effect will be very small, and considered alongside the high sensitivity of the landscape, a Minor Adverse effect will occur.
<b>North York Moors National Park Landscape Character Assessment</b>		
Dalby Forest (3C)	High	The construction activities will necessitate the temporary removal of agricultural land as the Development heads west from the EMS Well Site towards the Oxmoor Dikes. Where the Site coincides with the Dalby Forest, coniferous woodland will also be removed along the 30m working width. Plant and machinery will be introduced into the landscape, although given the extent of woodland enclosure this will not be perceived over a wide area. On that basis, the magnitude of effect is considered to be small, and when considered alongside the high sensitivity of the landscape, a Moderate Adverse effect will occur.
<b>The Landscapes of Northern Ryedale</b>		
High Eastern Farmland (G)	High	A small part of this landscape will be directly impacted through the loss of hedgerow vegetation and change in use of land within the escarpment. To the north of this area the presence of plant and machinery will be less discernible than in the south due to the enclosure afforded by the Dalby Forest. Further south, where the landscape is more open, the influence of plant and machinery will be more pronounced. On that basis, the magnitude of effect is considered to be small, and when considered alongside the high sensitivity of the landscape, a Moderate Adverse effect will occur.
Linear Scarp Farmland (F)	Medium-High	The direct impacts will occur within a very small locality in the vicinity of the A170 road, with the introduction of plant and machinery not overtly altering the level of tranquillity, albeit this is an open landscape, whereby the construction activities taking place in the adjacent lowland landscape will be apparent. On that basis, the magnitude of effect is considered to be small, and when considered

LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
		alongside the sensitivity of the landscape, a Minor Adverse effect will occur.
Open Vale Farmland (H)	Medium	The sense of seclusion in this landscape will be temporarily reduced due to the introduction of large scale plant and machinery. The Development largely relates to the field pattern in the landscape, and given the flat topographical profile, the influence of newly introduced elements will not extend over a wide area. Therefore, the magnitude of effect is considered to be small and considered against the medium sensitivity of the landscape, a Minor Adverse effect will occur.
Wooded Open Vale (J)	Medium-High	Between the River Derwent and the KGS the landscape has few prominent features. As such, the introduction of new elements in the landscape and removal of those existing will be noticeable. However, given the presence of woodland blocks and shelterbelts in the landscape, these newly introduced elements will not be appreciated over a wide area. On that basis, the magnitude of effect is considered to be small, and when considered alongside the sensitivity of the landscape, a Minor Adverse effect will occur.

7.145 Overall, construction activities are assessed to have a Moderate Adverse effect on landscape character as a whole.

#### Effects on the North York Moors National Park

7.146 The North York Moors National Park, as a place of tranquillity and remoteness, will be adversely affected by the Development; however this change will be contained within the immediate area surrounding the Site due to the degree in which the Dalby Forest limits intervisibility and reduces the ability of the Site, drilling rig and other ground-level construction activities to be perceived from elsewhere within the National Park.

7.147 Notwithstanding this, a noticeable change will occur within this nationally designated landscape in a localised area for a short period of time, resulting in a Minor Adverse effect.

#### *Visual Effects*

7.148 Sensitive visual receptors nearest to the Site are likely to experience the most severe and detrimental impact to their visual amenity, with many views in the surrounding landscape adversely affected during the construction phase. However, these effects will be short term and progressive in nature. Appendix 7.6 outlines the visual effects that will occur during the construction phase.

### Effects on residential receptors

7.149 The majority of residential receptors identified will experience a Negligible or Neutral effect during the construction phase, with a further eight experiencing a Minor Adverse effect. At five locations, including Cliff Edge Farm, Hayfield Village Farm, Wilton Carr House, Newstead Grange and Wath House Farm, residential receptors will experience a Moderate Adverse effect. Residential receptors at four locations will experience a Major Adverse effect, at Warren House Farm, Grange Farm, Crake Hall Cottage and Knapton Lodge.

### Effects on recreational receptors

7.150 Similarly, the majority of users of PRoW will also experience a Negligible or Neutral effect during the construction phase. At one location, a Minor Adverse effect will occur for users of PRoW 25.111/1/1. Moderate Adverse effects will be experienced at one location also, PRoW 24.4/8/1. At the remaining six locations, users of PRoW will experience Major Adverse effects, as the construction activities will either coincide with or lie adjacent to the PRoW. These PRoW include 25.8/1/1, 25.111/4/1, 25.4/7/1, 25.4/6/2, 25.4/6/1 and 25.4/5/1.

### Effects on other visual receptors

7.151 During the construction phase Major Adverse effects will not be experienced by users of the transport network, nor within areas of settlement generally. However, Moderate Adverse effects on visual amenity will occur along some rural and local roads and will be witnessed in passing by less sensitive receptors in vehicles. These however, are transient in nature and will not be experienced within the vast majority of the landscape due to the screening effects of the intervening vegetation and landform.

#### Completed Development

7.152 As set out in further detail in Chapter 3, the Completed Development stage of the Development includes the following elements:

- An underground 12" (300mm) diameter steel pipeline, 13.9km in length;
- A 10m wide maintenance easement;
- Generators and hydraulic systems at the EMS Well Site; and
- A pipeline and Pig Receiver Module at the KGS.

*Landscape Effects*Effects on Landscape Features

7.153 The completed Development phase will result in the addition of new features into the landscape, which although temporary in nature, will be long term. The impacts of the construction phase will be apparent in the landscape, particularly during year 1 of operation, through the noticeable absence of vegetation.

7.154 Table 7.4 outlines the effect on landscape features during the completed Development phase.

**Table 7.4: Completed Development - Effects on Landscape Features**

<b>Completed Elements</b>	<b>Development</b>	<b>Effect on Landscape Features</b>
Introduction of above and below ground engineering plant associated with the extraction and transportation of natural gas from the EMS Well Site to the KGS.		The introduction of additional above ground installations at the EMS Well Site and KGS will be discernible in the immediate vicinity of the Development. The below ground pipeline will not be discernible, although the disturbance to the agricultural land and absence of vegetation removed during the construction phase will be apparent during year 1.
Implementation of a 10m wide easement corridor		Gaps in hedgerow vegetation will be noticeable, demarking a linear feature, albeit underground, within the landscape.

7.155 For the most part the landscape features within the area will remain unaltered, with the presence of newly introduced features indiscernible unless in their immediate vicinity. However, due to the noticeable presence of a 10m wide easement corridor and absent vegetation in some areas (removed during the construction phase), a small magnitude of effect will arise. Therefore there will be a Minor Adverse effect on landscape features. The loss of landscape features will be less discernible over time as vegetation planting and seeding takes effect.

Effects on Landscape Character

7.156 The effects on landscape character during the completed Development phase will not be perceived over a wide area. The extent of landscape features affected, as outlined in

7.157 Table 7.4, is limited to the working corridor.

7.158 Table 7.5 outlines the changes that will occur, and resultant effects, for each landscape character area considered in this assessment.

**Table 7.5: Completed Development - Effects on Landscape Character**

LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
<b>National Character Area Profiles</b>		
25: North York Moors and Cleveland Hills	High	The presence of additional above ground installations at the EMS Well Site will be discernible in the immediate vicinity of the Site during year 1, as will the noticeable absence of linear stretches of woodland and hedgerow vegetation, and disturbances to the agricultural land. However, these direct impacts will not be perceived across the wider landscape due to the enclosure afforded by the Dalby Forest, therefore the magnitude of effect is considered to be very small. As a result, a Minor Adverse effect will occur. By year 15 the agricultural land will have taken on the appearance of that formerly, although gaps in the hedgerow vegetation, to accommodate the 10m wide easement, will be apparent with the effects remaining unchanged.
26: Vale of Pickering	Medium	In the immediate vicinity of the Site the disturbance to agricultural land will be discernible, as will the gaps in hedgerows and tree belts associated with the construction phase. However, given that these will largely be tied in to the existing field pattern the change in the fabric of the landscape will be very small. When considered alongside the medium sensitivity, a Negligible effect will occur. The effects will remain unchanged by year 15.
27: Yorkshire Wolds	High	Direct impacts will not occur within this landscape, with any alterations in the lower Vale of Pickering not perceptible. The magnitude of effect is considered to be neutral and a Neutral effect will occur.
<b>North Yorkshire and York Landscape Characterisation Project</b>		
Limestone Foothills and Valleys (4)	High	The presence of additional above ground installations at the EMS Well Site will be discernible in the immediate vicinity of the Site during year 1, as will the noticeable absence of linear stretches of woodland and hedgerow vegetation and disturbances to the agricultural land. However, these direct impacts will not be perceived across the wider landscape due to the enclosure afforded by the Dalby Forest, therefore the magnitude of effect is considered to be very small. As a result, a Minor Adverse effect will occur. By year 15 the agricultural land will have taken on the appearance of that formerly, although gaps in the hedgerow vegetation to accommodate the 10m wide easement will persist, with the effects remaining unchanged.
Open Carr Vale Farmland (22)	Medium-High	In the immediate vicinity of the Site the disturbance to agricultural land will be discernible, as will the gaps in hedgerows and tree belts associated with the construction phase. However, given that these will largely be tied in to the existing field pattern the change in the fabric of the landscape will be very small. When considered alongside the medium sensitivity, a Negligible effect will occur. The



LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
Sand and Gravel Vale Fringe (3)	High	effects will remain unchanged by year 15. The presence of an additional above ground installations at the KGS will be discernible in the immediate vicinity of the Site during year 1, as will the noticeable absence of hedgerow vegetation and disturbances to the agricultural land associated with the construction phase. However, these direct impacts will not be perceived across the wider landscape, therefore the magnitude of effect is considered to be very small. As a result, a Minor Adverse effect will occur. By year 15 the agricultural land will have taken on the appearance of that formerly, although gaps in the hedgerow vegetation to accommodate the 10m wide easement will still be discernible. The effects will remain unchanged in year 15 of operation.
<b>North York Moors National Park Landscape Character Assessment</b>		
Dalby Forest (3C)	High	The presence of additional above ground installations at the EMS Well Site and the absence of a linear stretch of woodland will be noticeable in the immediate vicinity of the Site. However, these direct impacts will not be perceived across the wider landscape due to the enclosure afforded by the Dalby Forest. The magnitude of effect is therefore considered to be very small and as a result a Minor Adverse effect will occur. By year 15 the agricultural land will have taken on the appearance of that formerly, although a linear stretch of removed woodland will still be evident, with the effects remaining unchanged.
<b>The Landscapes of Northern Ryedale</b>		
High Eastern Farmland (G)	High	The below ground installation will not be immediately apparent as it descends the escarpment, although gaps in the hedgerow vegetation will be discernible, as will the disturbance to agricultural land. However, these direct impacts will not be perceived across the wider landscape. Subtle alterations to the Oxmoor Dikes will also be discernible, albeit not widely perceived due to the extent of enclosure afforded by woodland in this vicinity therefore a very small magnitude of effect will occur. Taking into consideration the sensitivity of the landscape, a Minor Adverse effect will arise. By year 15 the agricultural land will have taken on the appearance of that formerly, however due to the absence of hedgerow vegetation and disturbance to the Oxmoor Dikes, the overall significance of effects will remain unchanged.
Linear Scarp Farmland (F)	Medium-High	Gaps in the hedgerow vegetation abutting either side of the A170 will be apparent, as will the disturbance to the agricultural land descending the escarpment to the north in the adjacent landscape area associated with the below ground installation. However, these impacts will not alter the perception of the landscape, giving rising to a very small magnitude of effect. This, in combination with the medium-high sensitivity of the landscape, gives rise to a Negligible effect. By year 15 the disturbance to the agricultural land will not be discernible and the gaps in hedgerow vegetation to accommodate the 10m wide easement will somewhat appear as farmland access points, with the overall significance of effects remaining

LCA / LCT	Landscape Sensitivity	Effect on Landscape Character
		unchanged.
Open Vale Farmland (H)	Medium	In the immediate vicinity of the Site the disturbance to agricultural land will be discernible, as will the gaps in hedgerows and tree belts associated with the construction phase. However, given that these will largely be tied in to the existing field pattern the change in the fabric of the landscape will be very small. When considered alongside the medium sensitivity, a Negligible effect will occur. The effects will remain unchanged by year 15.
Wooded Open Vale (J)	Medium-High	The presence of an additional above ground installation at the KGS will be discernible in the immediate vicinity of the Site during year 1, as will the noticeable absence hedgerow vegetation and disturbances to the agricultural land associated with the construction phase. However, these direct impacts will not be perceived across the wider landscape, therefore the magnitude of effect is considered to be very small. As a result, a Minor Adverse effect will occur. By year 15 the agricultural land will have taken on the appearance of that formerly, although gaps in the hedgerow vegetation, to accommodate the 10m wide easement, will still be discernible. The effects will remain unchanged in year 15 of operation.

7.159 Overall, the completed Development is assessed to have a Minor Adverse effect on landscape character as a whole.

#### Effects on the North York Moors National Park

7.160 The absence of vegetation and subtle alterations to the landform brought about as a result of construction will be discernible but not immediately apparent in the vicinity of the Development. As these changes will be contained within the immediate area surrounding the Site they will not be perceived from elsewhere within the National Park. The special qualities of the North York Moors National Park will be unaffected.

7.161 As reinstated planting matures the extent to which alterations to the landscape pattern are perceptible will reduce and the landscape will largely take on the appearance of that formerly. Given the contained nature of alterations not immediately apparent in a localised area and that the special qualities will be unaffected, the effect on the North York Moors National Park is considered to be Negligible.

#### *Visual Effects*

7.162 The impact on visual amenity during the completed Development phase will typically be reduced in comparison to the construction phase. Sensitive visual receptors nearest to the

Site are likely to experience detrimental impacts to their visual amenity in year 1 of operation; however the extent of the impact on visual amenity will reduce as the landscape strategy takes effect by year 15. There will be no long term permanent effects for any of the visual receptors identified. Appendix 7.6 outlines the visual effects that will occur during the completed Development phase.

#### Effects on residential receptors

7.163 The majority of residential receptors identified will experience a Negligible or Neutral effect during the completed Development phase, with seven experiencing a Minor Adverse effect during year 1 of operation. At two locations, Wath House Farm and Knapton Lodge, residential receptors will experience a Moderate Adverse effect during year 1. By year 15 all effects will reduce to Minor Adverse at most.

#### Effects on recreational receptors

7.164 Similarly, the majority of users of PRow will also experience a Negligible or Neutral effect during the completed Development phase during year 1 of operation. At four locations, a Minor Adverse effect will occur for users of PRow 25.4/7/1, 25.4/6/2, 25.4/6/1 and 25.4/5/1. Moderate Adverse effects will be experienced at three locations, PRow 25.81/8/1, 25.4/8/1 and 25.111/4/1. By year 15 all effects will reduce to Minor Adverse at most.

#### Effects on other visual receptors

7.165 At the completed Development phase, all other visual receptors identified in this study will at most experience a Minor Adverse effect, with the majority experiencing a Negligible or Neutral effect, during year 1 of operation. By year 15, the number of receptors experiencing a Minor Adverse effect will reduce to nine. The majority of visual receptors will experience a Negligible or Neutral effect during year 15 of operation.

#### Decommissioning and Restoration

7.166 The activities associated with the decommissioning and restoration phase are set out in Chapter 5. All wells will be plugged, hydrostatically tested and abandoned, with the wellheads removed and all plant, equipment, pipes, cables and surface installations dismantled and removed from the EMS Well Site. The pipeline between the EMS Well Site and the KGS will be left in-situ, filled with an inert gas at lower pressure and the ends capped.

7.167 The effects resulting from the decommissioning and restoration phase are of a similar

nature to construction effects and will be for a temporary period.

### *Landscape Effects*

- 7.168 The decommissioning and restoration of the EMS Well Site will result in temporary adverse landscape effects arising from the temporary introduction of plant and machinery required for the dismantling of structures and the removal of surface installations, and the associated increased movement of plant and vehicles on the public roads and within the Site and surrounding area.
- 7.169 The replacement of surface installations with restoration proposals, including the re-profiling of the landform and return to agricultural use, will result in the progressive reduction of discordant utilitarian features and over time improve the fabric of the landscape in-keeping with the wider characteristics of the North York Moors National Park. For the duration of the decommissioning phase however the effect on the North York Moors National Park will be Minor Adverse.
- 7.170 The effects on landscape character will be limited to the immediate vicinity of the EMS Well Site and will be Minor Adverse. Elsewhere, the effect will be Negligible. Where the pipeline remains in-situ the significance of effect will remain the same as in Year 15 of operation.

### *Visual Effects*

- 7.171 The visual effects arising for receptors with views towards the EMS Well Site during the decommissioning and restoration phase will be similar to those experienced during the construction phase. Elsewhere, views will remain unchanged from Year 15 of operation.

## **Mitigation Measures**

### Construction

- 7.172 In order to manage environmental issues related to construction, a Construction Environmental Management Plan (CEMP) will be agreed. Further information on the CEMP is set out in Chapter 5.
- 7.173 During construction there are a number of measures which will be incorporated to minimise adverse effects including:

- Retention of existing hedgerows and woodland where practicable, with all trees to be retained protected in accordance with BS5837<sup>xxi</sup>;
- Establishment of the landscape proposals at an early stage of the construction phase where possible, i.e. reinstate hedgerows and field boundaries immediately following construction;
- Location of contractor's compound, pipeline laying and material stockpiles away from nearby sensitive receptors, i.e. mature trees;
- Control of the security lighting of construction compound and machinery to minimise upward and outward light pollution. In addition, ensure that the minimum area only is lit, for the minimum period of time;
- Limit movements of material between stockpiles so that these do not shift over time thereby adding to the sense of fragmentation and instability of the landscape;
- Minimisation of the duration of construction activities which require cranes, scaffolding, and use of designated routes within and around the Site; and
- Agreeing appropriate working hours as proposed (07:00 to 18:00 Monday to Friday and 07:00 to 13:00 on Saturdays) with NYMNP and NYCC to ensure that adverse visual effects of construction experienced by the closest residential receptors are minimised at times when they could reasonably expect a cessation of construction activity, for example evenings, weekends and bank holidays.

#### Completed Development

7.174 The main landscape features within the context of the Site include the topographical transition from the elevated plateau of the Dalby Forest to the Vale of Pickering, passing down through a prominent escarpment, and the covering network of woodland, tree belts and hedgerow bounded fields. Landscape proposals will include the replanting of vegetation removed through the construction of the Development. New planting will reinforce and enhance the existing landscape framework and compensate for limited areas of vegetation loss.

#### *Landscape Strategy*

7.175 The landscape objectives for the landscape strategy are as follows:

- To retain landscape features such as woodlands, treebelts and hedgerows along the pipeline route, and to ensure the long term management of these features;
- To restore the agricultural landscape, through which the pipeline route passes, to agricultural land of equivalent quality to that prior to construction, at the earliest

opportunity following construction;

- To reinstate and enhance the landscape features within the Site in order to restore the landscape character to that existing prior to construction, reflecting the objectives set out in the guidance provided in the published landscape character assessments, and in particular with reference to the Landscapes of Northern Ryedale and the Area of High Landscape Value;
- To provide a landscape setting to the Development, through the retention of a robust landscape infrastructure that reflects the existing landscape framework and assimilates the Development within the wider landscape; and
- To provide ecological and amenity enhancement through the introduction and appropriate management of new grassland, woodland, tree belt, hedgerow and individual tree planting, linked to existing landscape features wherever possible.

7.176 Planting to be included within the overall landscape strategy is predominately native and reflects the native woodland types of the North York Moors as per the recommendation in the North York Moors Supplementary Planning Document Design Guide and Ryedale Rural Design Guide<sup>xxii</sup>.

7.177 Generally smaller plants will establish quicker than larger plants. Therefore, for instant effect and good long term success, a number of larger trees (feathered, standards/semi-mature) will be planted at key locations, with smaller plants (such as transplants, undercuts or cell grown stock) making up the bulk in the planting. In addition, a landscape maintenance programme will be adopted to ensure the long term survival of existing and proposed features in order to enhance their biodiversity and amenity value. The details of the landscape maintenance programme will be agreed with the relevant authority at the appropriate time.

#### *Management and Monitoring*

7.178 The monitoring of the successful establishment and growth of the proposed planting measures is a long term process. This will be ensured through the establishment of an ongoing management regime in respect of the landscape infrastructure and open spaces associated with the Development. Part of the management regime plan will be to monitor the successful establishment of new planting and to replace plant failures for up to five years until the tree and shrub areas are well established. The long term objectives will be:

- To allow selected trees to grow on to maturity;
- To encourage 'wildlife corridors' which will provide important nature conservation

benefits; and

- To create a high degree of screening to the Development without adversely affecting the character of the National Park.

7.179 The aim is to promote a sensitive management approach, which protects and improves landscape and visual amenity value and the nature conservation interests of the Site in a manner that is compatible with the land uses. The choice of planting will reflect local landscape character and shall be deliverable in practice, with particular care and attention given to planting within and adjacent to the 10m easement.

#### Decommissioning and Restoration

7.180 During decommissioning there a number of measures which will be incorporated to minimise adverse effects, combining together the construction and operational phase measures. The restoration proposals (including the reinstatement of agricultural land, reinstatement of previously removed planting and re-profiling of the landform to a similar condition pre-dating development) in combination with the maturing of reinstated hedgerows associated with the operational phase will serve to reduce adverse effects over time.

### **Residual Effects**

#### Construction

##### *Landscape Effects*

7.181 During construction, the retention and protection of existing trees surrounding the Site in accordance with BS5837:2012 will reduce the potential for adverse effects on landscape character and the setting of the North York Moors National Park. The control of movement of material will similarly reduce adverse effects on landscape character during the construction phase. However, construction activity will remain apparent due to the shifting patterns of machinery and movement within the Site and will result in a Moderate Adverse effect on both landscape features and character during construction and a Minor Adverse effect on the North York Moors National Park.

##### *Visual Effects*

7.182 Mitigation measures introduced during the construction phase to reduce the potential for adverse effects include the retention of vegetation, careful siting and movement of

stockpiles within the working corridor and limiting of working hours on site. The reinstatement of vegetation removed at the end of the construction phase will further limit the potential for adverse effects, albeit these will not yet be mature. Appendix 7.6 outlines the residual visual effects that will occur during the construction phase.

- 7.183 Due to the nature of effects along the working corridor, including the removal of trees and hedgerows, the nearest residential properties will remain influenced by construction activities associated with the Development (including Warren House Farm, Hayfield Village Farm, Wilton Carr House, Grange Farm, Crake Hall Cottage, Wath House Farm and Knapton Lodge). The implementation of mitigation measures will reduce the significance of effect to Moderate Adverse on these receptors during the construction phase with the exception of receptors at Warren House Farm where Major Adverse effects will remain.
- Completed Development

#### *Landscape Effects*

- 7.184 The existing structure of woodlands on the boundaries of the Site, particularly through the Dalby Forest, will be retained providing a landscape framework encompassing the Development. A number of elements will ensure that the positive landscape structure will be retained and enhanced once mitigation measures begin to establish. These include (with the consent of landowners) the reinforcement of the existing landscape pattern with the reinstatement of planting removed during the construction phase; the gapping-up of existing hedgerows adjacent to the Development with respect to local landscape character; and the appropriate management of the existing landscape features.
- 7.185 In-combination these measures will ensure that the existing landscape structure will be retained and enhanced. As a result, the pattern or 'grain' of the landscape will be retained and reflected within the mitigation proposals for the Site, serving to reinforce local distinctiveness, sense of place and landscape character. This will result in a Minor Adverse effect on landscape features and landscape character as whole during year 1, reducing to a Negligible effect by year 15 of operation, as reinstated vegetation matures.

#### *Visual Effects*

- 7.186 The effectiveness of the landscape strategy in mitigating the effects on the views from properties, PRoWs and other visual receptors during operation can be demonstrated throughout the course of the Completed Development i.e. the contribution of maturing vegetation between year 1 and year 15 of operation. Appendix 7.6 outlines the residual visual effects that will occur during the completed Development phase.



- 7.187 Between year 1 and year 15 there will be reduction in the significance of effects on views from receptors in proximity to the Site due to the proposed mitigation measures, including the restoration of agricultural land and, in particular, as new woodland and hedgerow planting reaches maturity. The implementation of mitigation measures will ensure that no residential receptors experience an effect deemed significant in EIA terms during either year 1 or year 15 of operation, experiencing at most a Minor Adverse effect. Two users of PRoW, at 25.82/8/1 and 25.111/4/1, will experience a Moderate Adverse effect during year 1 of operation, albeit reducing to Minor Adverse and Negligible respectively by year 15.
- 7.188 Of the remaining visual receptors identified, no significant residual effects in EIA terms will arise, with a Minor Adverse effect at most identified during year 1 of operation. By year 15 these other visual receptors will experience a Negligible or Neutral effect. Indeed, by year 15, only two Minor Adverse effects amongst all the identified visual receptors will occur, with all remaining receptors experiencing a Negligible or Neutral effect, demonstrating the efficacy of the mitigation measures proposed.
- Decommissioning and Restoration

#### *Landscape Effects*

- 7.189 During decommissioning, the retention and protection of existing trees surrounding the Site in accordance with BS5837:2012 will reduce the potential for adverse effects on landscape character and the setting of the North York Moors National Park. The control of movement of plant will similarly reduce adverse effects on landscape character during the decommissioning phase, although activities will remain apparent in the vicinity of the EMS Well Site resulting in a Minor Adverse effect. The restoration proposals, in combination with the continued maturation of planting associated with the operational phase, will over time reduce the effect on the landscape to Negligible. Where the pipeline remains in-situ the significance of effect will remain the same as in Year 15 of operation.

#### *Visual Effects*

- 7.190 Mitigation measures introduced during the decommissioning phase to reduce the potential for adverse effects include the retention of vegetation, careful siting and movement of plant and machinery and limiting of working hours at the EMS Well Site resulting in at most a Minor Adverse effect. The reinstatement of vegetation removed and restoration of the land use and landform to its previous condition will over time further limit the potential for adverse effects resulting in Negligible effects. Where the pipeline remains in-situ the significance of effect will remain the same as in Year 15 of operation.

## **Cumulative Effects**

- 7.191 The assessment of cumulative landscape and visual effects is an evolving area of practice. Cumulative effects can relate to the loss and/or addition of features as a result of developments which alter the physical fabric and character of a landscape, or they may relate to a change in the composition of views and the visual amenity experienced.
- 7.192 This study has considered the combined effects of the Development with other existing, consented and proposed schemes on landscape features, landscape character and visual amenity. It is worth noting that with regards to visual effects, the Development need not necessarily be visible at the same time as another scheme in order to bring about an effect e.g. in-succession and/or sequential effects. Two schemes are considered which have the potential to result in cumulative effects, the Ebberston Moor Early Development Scheme (EDS) and the York Potash Project. The potential implications of the management of Dalby Forest are also outlined.

### **Ebberston Moor EDS**

- 7.193 The Ebberston Moor EDS (approved) comprises the re-use of the existing Ebberston Moor 'A' Well Site and a connection to the nearby National Grid Network (NGN) gas pipeline and facilities for the storage and transport of associated liquids from the existing Ebberston Moor 'A' Well Site, Lockton Compound.

### *Landscape Effects*

- 7.194 The Ebberston Moor 'A' Well Site and Lockton Compound form part of the existing baseline. The introduction of additional surface installation features associated with the EDS at these locations will therefore largely be indiscernible and as such an additional cumulative effect on landscape features, landscape character and on the North York Moors National Park will not arise.

### *Visual Effects*

- 7.195 The intervening topography and managed forestry vegetation between the Ebberston Moor EDS and the Development, acts as a visual barrier restricting intervisibility between the two schemes. On this basis, in-combination and successive cumulative visual effects will not occur resulting in a Neutral effect.

- 7.196 Sequential effects will arise for receptors utilising the Tabular Hills Walk PRow whereby they will experience transient open views of both schemes for a very limited duration albeit in close proximity. A Minor Adverse effect will arise.

#### York Potash Project

- 7.197 The York Potash Project (currently in planning) comprises the development of a new mine to extract polyhalite, an underground mineral transport system and a harbour facility. The proposed location of the York Potash mine is set within an existing forestry block in the vicinity of Sneaton, approximately 18km to the north of the EMS Well Site. The underground mineral transport system will be approximately 37.5km in length and will connect the mine to a harbour facility in Redcar, approximately 50km to the north-west of the EMS Well Site.

#### *Landscape Effects*

- 7.198 The introduction of the Development, in combination with the York Potash Project will result in the loss of additional agricultural land and woodland from the North York Moors National Park and the introduction of new features in the landscape. However, these changes will arise in localised areas and will be largely indiscernible when taking into consideration that the integrity, special qualities and key characteristics of the North York Moors National Park will be retained. As such an additional cumulative effect on landscape features, landscape character and on the North York Moors National Park will not arise.

#### *Visual Effects*

- 7.199 The elevated moorland and forested ridgelines and hill summits between the York Potash Project and the Development, including Lilla Rigg, Langdale Rigg and Saltergate, act as visual barriers restricting intervisibility between the two schemes. On this basis, in combination and successive cumulative visual effects will not occur resulting in a Neutral effect.
- 7.200 Significant sequential visual effects are similarly unlikely given the extensive separation distance between the two schemes, the pattern of intervening landscape features and the orientation of PRow and transport routes in the landscape resulting in a Neutral effect.

#### Dalby Forest

- 7.201 The assimilation of the northernmost section of the Development is in part reliant on the future management of the Dalby Forest, as detailed in the Dalby Forest Design Plan<sup>xxiii</sup>. On

the basis of the current management proposals, cumulative effects between the Development and the management of Dalby Forest will not occur. However, it should be noted that the management proposals may alter in the future and as such the effects (including cumulative) may differ to those identified previously. Indeed should the management proposals at the Dalby Forest alter, these in themselves could be considered to give rise to potential cumulative effects.

### **Summary**

- 7.202 The Development will traverse through approximately 13.9km of the North York Moors and Vale of Pickering landscape, passing through a series of different LCTs, from the EMS Well Site to the KGS. The northernmost section of the Development, between the EMS Well Site and the A170 is considered the most sensitive area of landscape as it encompasses part of the North York Moors National Park and lies within the Fringe of the Moors Area of High Landscape Value as identified in the Ryedale Local Plan Strategy.
- 7.203 The landscape in this location comprises an elevated escarpment with a predominantly woodland land cover. Where open moorland prevails, extensive far-reaching views across the Vale of Pickering to the south area obtained. South of the A170, the Site encompasses the LCTs of the Linear Scarp Farmland, Open Vale Farmland and the Wooded Open Vale.
- 7.204 Due to the densely wooded character of the area within and immediately adjacent to the North York Moors National Park, views are contained and the effects limited to the immediate vicinity of the Site. Views from elsewhere within the National Park are screened by coniferous woodland which effectively curtail views to the Site over a wide area, limiting open views to the fringes of the Dalby Forest such as in the vicinity of Warren House Farm.
- 7.205 Where the Development traverses the elevated open forest plateau north of Stonygate Moor, views of the Site are limited to PRoW 25.4/6/1 where it coincides with the moor. From the edge of the National Park views to the south are influenced by the escarpment edge at Warren House Farm which curtails views to the south. As the Development descends the escarpment partial views of the Site are obtained where the orientation of the view, intervening topography and gaps in vegetation afford visibility.
- 7.206 Further south within the vale landscape, distant views are afforded north towards the escarpment, albeit only obtained through breaks in hedgerow vegetation and tree belts along local roads. Views from Allerston and Wilton are curtailed by variation in topography and intervening vegetation. Open views are attained from the eastern edge of Wilton across the vale and along the escarpment to the north. The southernmost section of Pickering Vale is more representative of a woodland vale landscape, where woodland copses and mature

tree belts are commonplace, limiting distant views. The KGS is enclosed within woodland which curtails views of this facility from the surrounding vale landscape and the elevated escarpments to the north and south.

- 7.207 It is considered that the Development will not change the character of the existing EMS Well Site as it is already a functional natural gas infrastructure development. The landscape impacts resulting from the Development are limited to the loss of field boundary hedgerows and trees along a 30m corridor and the temporary loss of agricultural land. Once constructed, the land will be restored to a similar condition to that prior to construction, with landscape features reinstated.
- 7.208 As a result of the temporary loss of features and introduction of plant and machinery not in-keeping with the landscape there will be a Moderate Adverse effect during construction on landscape features and landscape character. Once operational the Development comprises an approximately 13.9km underground natural gas pipeline between the EMS Well Site and the KGS, with the only above ground elements contained within the EMS Well Site. As such the Development will only be perceived at a local level, and at most, a Minor Adverse effect will arise on landscape features and landscape character. This will reduce over time to a Negligible effect as replacement vegetation matures.
- 7.209 The North York Moors National Park, a place of tranquillity and remoteness, will be adversely affected by the Development due to the introduction of plant and machinery into the landscape which is uncharacteristic of the area, and the removal of landscape features and temporary change in land use. However, these alterations will not be perceived over a wide area, therefore a short-term Minor Adverse effect will occur during the construction phase. During operation the alterations associated with the Development will largely be indiscernible, particularly as reinstated planting reaches maturity, and will only be perceived over a localised area. A Negligible effect will occur during operation on the North York Moors National Park.
- 7.210 The Site is generally well screened from sensitive receptors. Therefore there are limited views obtained from publicly accessible locations in the immediate vicinity of the Site i.e. PRoW and roads, and from open locations such as within the elevated escarpment and on the edge of the elevated forest plateau.
- 7.211 Receptors at residential properties and those utilising PRoW will, at most, experience a Major Adverse effect during the construction phase (one residential receptor and six PRoW receptors will experience Major Adverse effects). Receptors on transport routes will, at most, experience a Moderate Adverse effect. These effects will be short term and temporary in nature. No receptors will experience permanent significant adverse visual effects, primarily due to the Development being contained underground. In many locations there

will be a Neutral or Negligible visual effect during operation.

- 7.212 Receptors at residential properties will, at most, experience a Minor Adverse effect during year 1 of operation, which will reduce over time as replacement vegetation matures. Receptors using the PRoW network in and around the Site will, at most, experience a Moderate Adverse effect during year 1 of operation, which will reduce to at most a Minor Adverse effect during year 15 as reinstated vegetation begins to reach maturity. The transport routes in and around the Site will, at most, experience a Minor Adverse effect during year 1 of operation, which will reduce over time as replacement vegetation matures.
- 7.213 During the decommissioning phase Minor Adverse effects will occur with respect to landscape character and visual receptors in and around the EMS Well Site. Following the implementation of the restoration proposals, in combination with the continuing maturation of the planting associated with the operational phase and restoration phase, the significance of effects will be Minor Beneficial in and around the EMS Well Site. Where the pipeline remains in-situ the significance of effect will remain the same as in Year 15 of operation. The pipeline and Pig Receiver Module will remain in place, subject to planning permission being granted by Ryedale District Council for the retention of the existing buildings, plant and machinery at KGS, therefore the effects will remain the same as in Year 15 of operation.
- 7.214 Significant cumulative landscape and visual effects will not occur
- 7.215 In conclusion it is considered that the Development will be effectively assimilated within the landscape and visual context, with no long term significant landscape or visual adverse effects.
- 7.216 Table 7.6 contains a summary of the likely significant effects of the Development.

**Table 7.6: Table of Significance - Landscape and Visual**

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	
				I	UK	E	R	C	B	L		
<b>Construction – EMS Well Site</b>												
Landscape Character and Landscape Features	Short term / Temporary	Moderate Adverse	The retention of existing vegetation alongside controlling the movement of plant and machinery, stockpiles and materials, and limiting working hours, will reduce the influence of the construction activities in the landscape and in views.							*	Moderate Adverse	
North York Moors National Park	Short term / Temporary	Minor Adverse			*							Minor Adverse
Visual Effects – Properties	Short term / Temporary	Negligible								*		Negligible
Visual Effects – PRoW	Short term / Temporary	Major Adverse							*			Major Adverse
Visual Effects – Transport	Short term / Temporary	Moderate Adverse								*		Moderate Adverse
<b>Construction – Pipeline Route</b>												
Landscape Character and Landscape Features	Short term / Temporary	Moderate Adverse to Minor Adverse	The retention of existing vegetation alongside controlling the movement of plant and machinery, stockpiles and materials, and limiting working hours, will reduce the influence of the construction activities in the landscape and in views.							*	Moderate Adverse to Minor Adverse	
North York Moors National Park	Short term / Temporary	Negligible			*							Negligible
Visual Effects – Properties	Short term / Temporary	Major Adverse to Neutral								*		Major Adverse to Neutral
Visual Effects – PRoW	Short term / Temporary	Major Adverse to Neutral							*			Major Adverse to Neutral
Visual Effects – Transport	Short term / Temporary	Moderate Adverse to Neutral								*		Moderate Adverse to Neutral

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	
				I	UK	E	R	C	B	L		
<b>Construction - KGS</b>												
Landscape Character and Landscape Features	Short term / Temporary	Negligible	The retention of existing vegetation alongside controlling the movement of plant and machinery, stockpiles and materials, and limiting working hours, will reduce the influence of the construction activities in the landscape and in views.							*	Negligible	
North York Moors National Park	Short term / Temporary	Neutral			*							Negligible
Visual Effects - Properties	Short term / Temporary	Neutral								*		Neutral
Visual Effects - PRoW	Short term / Temporary	Minor Adverse						*				Negligible to Neutral
Visual Effects - Transport	Short term / Temporary	Neutral								*		Neutral
<b>Completed Development - EMS Well Site - Year 1</b>												
Landscape Character and Landscape Features	Long term / Temporary	Negligible	The retention of existing vegetation alongside the reinstatement of hedgerows at an early stage will better assimilate the Development into the landscape.							*	Negligible	
North York Moors National Park	Long term / Temporary	Negligible			*							Negligible
Visual Effects - Properties	Long term / Temporary	Neutral								*		Neutral
Visual Effects - PRoW	Long term / Temporary	Negligible						*				Negligible
Visual Effects - Transport	Long term / Temporary	Negligible								*		Negligible



Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	
				I	UK	E	R	C	B	L		
<b>Completed Development – EMS Well Site – Year 15</b>												
Landscape Character and Landscape Features	Long term / Temporary	Negligible	The retention of existing vegetation alongside the reinstatement of hedgerows at an early stage will better assimilate the Development into the landscape, reducing the duration for planting to reach maturity.							*	Negligible	
North York Moors National Park	Long term / Temporary	Negligible			*							Negligible
Visual Effects – Properties	Long term / Temporary	Neutral								*	Neutral	
Visual Effects – PRoW	Long term / Temporary	Negligible							*		Negligible	
Visual Effects – Transport	Long term / Temporary	Negligible								*	Negligible	
<b>Completed Development – Pipeline Route – Year 1</b>												
Landscape Character and Landscape Features	Long term / Temporary	Minor Adverse to Negligible	The retention of existing vegetation alongside the reinstatement of the hedgerow vegetation and agricultural land at an early stage will better assimilate the Development into the landscape.							*	Minor Adverse to Negligible	
North York Moors National Park	Long term / Temporary	Negligible			*						Negligible	
Visual Effects – Properties	Long term / Temporary	Moderate Adverse to Neutral								*	Minor Adverse to Neutral	
Visual Effects – PRoW	Long term / Temporary	Moderate Adverse to Neutral							*		Moderate Adverse to Neutral	
Visual Effects – Transport	Long term / Temporary	Minor Adverse to Neutral								*	Minor Adverse to Neutral	

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	
				I	UK	E	R	C	B	L		
<b>Completed Development – Pipeline Route – Year 15</b>												
Landscape Character and Landscape Features	Long term / Temporary	Minor Adverse to Negligible	The retention of existing vegetation alongside the reinstatement of the hedgerow vegetation and agricultural land at an early stage will better assimilate the Development into the landscape, reducing the duration for planting to reach maturity.							*	Negligible	
North York Moors National Park	Long term / Temporary	Negligible			*							Negligible
Visual Effects – Properties	Long term / Temporary	Minor Adverse to Neutral								*		Negligible to Neutral
Visual Effects – PRoW	Long term / Temporary	Minor Adverse to Neutral						*				Negligible to Neutral
Visual Effects – Transport	Long term / Temporary	Minor Adverse to Neutral								*		Negligible to Neutral
<b>Completed Development – KGS – Year 1</b>												
Landscape Character and Landscape Features	Long term / Temporary	Negligible	The retention of existing vegetation alongside the reinstatement of the field boundary vegetation adjacent to the KGS at an early stage will better assimilate the Development into the landscape.							*	Negligible	
North York Moors National Park	Long term / Temporary	Neutral			*							Neutral
Visual Effects – Properties	Long term / Temporary	Neutral								*		Neutral
Visual Effects – PRoW	Long term / Temporary	Negligible						*				Negligible
Visual Effects – Transport	Long term / Temporary	Neutral								*		Neutral

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	
				I	UK	E	R	C	B	L		
<b>Completed Development – KGS – Year 15</b>												
Landscape Character and Landscape Features	Long term / Temporary	Negligible	The retention of existing vegetation alongside the reinstatement of the field boundary vegetation adjacent to the KGS at an early stage will better assimilate the Development into the landscape, reducing the duration for planting to reach maturity.							*	Negligible	
North York Moors National Park	Long term / Temporary	Neutral			*							Neutral
Visual Effects – Properties	Long term / Temporary	Neutral								*		Neutral
Visual Effects – PRoW	Long term / Temporary	Negligible							*			Neutral
Visual Effects – Transport	Long term / Temporary	Neutral								*		Neutral
<b>Decommissioning and Restoration –EMS Well Site</b>												
Landscape Character and Landscape Features	Short term / Permanent	Moderate Adverse	The retention of existing vegetation alongside controlling the movement of plant and machinery and limiting working hours, in combination with the maturation of mitigation proposals implemented during the operational phase and the restoration of the land to its former use of plantation woodland and land profile, with previously removed vegetation reinstated.							*	Minor Beneficial	
North York Moors National Park	Short term / Permanent	Minor Adverse			*							Negligible
Visual Effects – Properties	Short term / Permanent	Negligible								*		Neutral
Visual Effects – PRoW	Short term / Permanent	Major Adverse							*			Minor Beneficial to Neutral
Visual Effects – Transport	Short term / Permanent	Moderate Adverse								*		Minor Beneficial to Neutral

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)
				I	UK	E	R	C	B	L	
<b>Decommissioning and Restoration – Pipeline Route</b>											
Landscape Character and Landscape Features	Short term / Permanent	Minor Adverse to Negligible	The retention of agricultural land in combination with the maturation of mitigation proposals implemented during the operational phase.							*	Negligible
North York Moors National Park	Short term / Permanent	Negligible			*						Negligible
Visual Effects – Properties	Short term / Permanent	Minor Adverse to Neutral								*	Negligible to Neutral
Visual Effects – PRoW	Short term / Permanent	Minor Adverse to Neutral						*			Negligible to Neutral
Visual Effects – Transport	Short term / Permanent	Minor Adverse to Neutral								*	Negligible to Neutral
<b>Decommissioning and Restoration - KGS</b>											
Landscape Character and Landscape Features	Short term / Permanent	Negligible	Not applicable as KGS infrastructure will remain in place.							*	Negligible
North York Moors National Park	Short term / Permanent	Neutral			*						Neutral
Visual Effects – Properties	Short term / Permanent	Neutral	KGS has planning permission until May 2018 and at this time a revised planning application will be submitted to retain the existing buildings, plant and machinery, which will be subject to approval by Ryedale District Council.							*	Neutral
Visual Effects – PRoW	Short term / Permanent	Neutral						*			Neutral
Visual Effects – Transport	Short term / Permanent	Neutral								*	Neutral
<b>Cumulative Effects</b>											
Cumulative landscape and visual effects will not occur.											

**\* Geographical Level of Importance**

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local

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