5.0 ALTERNATIVE SITES AND PROCESSES

Introduction

5.1 This Chapter of the ES describes the main alternatives to the Proposed Development which have been considered by Moorland Energy. Under the EIA Regulations, an ES is required to provide "an outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for the choice, taking into account the environmental effects."

5.2 The following paragraphs review the alternatives to the Proposed Development which have been considered by Moorland Energy.

'No Development' Alternative

5.3 The 'No Development' Alternative is the option of leaving the Application Site in its current state. It aims to predict the environmental conditions that would exist in the absence of the Proposed Development taking place. The Application Site would continue to remain in agricultural use, with no corresponding effects arising from traffic, landscape, ecology, noise or emissions associated with the construction and operation of the Proposed Development.

5.4 National Energy Policy, set out in the 2007 Energy White Paper, acknowledges that there is an urgent need for significant private sector investment in new infrastructure in order to ensure that the UK has secure energy supplies. The Ministerial Statement of May 2006 indicates clearly that the Government warmly welcomes the diversity of solutions that the market can deliver and that onshore and offshore, large and small solutions are needed. The provision of new energy infrastructure provides an essential national service. Minerals Planning Statement 1, published in 2006, states that in the short to medium term, the aim is to maximise the potential of the UK's conventional oil and gas supplies in an environmentally acceptable manner.

5.5 The proposed Gas Processing Facility will be able to process up to 1.1mcm/d. Without this and other on-shore reserves, the risk to UK gas supply will increase and become more susceptible to volatile markets outside the control of the UK. This is particularly the case in cold winter periods where there is likely to be a greater risk of gas supply shortages.

5.6 The Environmental Impact Assessment which has been carried out by Moorland Energy demonstrates that any adverse effects, whether temporary or permanent, can be satisfactorily mitigated by a range of measures and that as a result, the residual effects would either be negligible, slight or minor. Therefore, whilst the adverse environmental impacts in the vicinity of the Application Site are expected to be only slight and temporary, the 'no development' option would result in adverse socio-economic effects and be contrary to National Energy and Planning Guidance which supports additional gas infrastructure in the UK. These adverse socio-economic impacts outweigh any beneficial impacts that would arise from the 'No Development' alternative.

Alternative Locations and Sites

Wellsites

5.7 Moorland Energy has not studied the suitability of alternative wellsites. Planning permission was granted by the NYMNPA in December 2007 for an exploratory wellsite on land at Ebberston Common Lane, Ebberston. Following the discharge of planning conditions in 2008, the site was subsequently developed and drilled in February 2009. The results of the drill stem testing indicated that there were substantial quantities of gas reserves to justify production. A meeting was held with the Chief Planning Officer of the NYMNPA and the Authority's minerals officer to discuss the principle of permitting gas production at the wellsite and a connecting gas pipeline from the wellsite to a location outside the Park boundary. Subsequently, correspondence from the NYMNPA, dated 18 March 2009, confirmed that this was the Authority's preferred option, compared to a production facility within the National Park. For this reason, an alternative wellsite has not been considered by the Applicant.

Gas Processing Facility

Search Criteria

5.8 Moorland Energy has considered a number of alternative locations for the gas processing facility before identifying the Hurrell Lane site as its preferred location. Any alternative would need to accord with a number of parameters in order for a site to be suitable:

- a minimum area of 2.2ha in order to accommodate the necessary inlet facilities, compressor buildings, sweetening facility, hydrocarbon and dew point control,

together with an office and maintenance building, car parking and landscaping; plus an adjacent construction compound and storage area requiring a minimum area of 1ha;

- flat or generally undulating, preferably with existing screening and landscaping;
- at least 400m from the nearest residential property in order to avoid potential disturbance from occasional noisy activities;
- an absence of known ecological, archaeological or landscape designations; and
- impact on climate change arising from CO_2 emissions

Study Area

5.9 The Study Area comprised the area between the Ebberston Wellsite, the Pickering NTS point of entry at Outgang Road, and the existing NTS gas pipeline which runs from Pickering eastwards towards Hull **(Figure 5.1)**. Both the Pickering NTS and the existing NTS gas pipeline would, in theory, be suitable points of entry for the processed gas, with the latter via a "hot-tap" connection. In practice, an entry point to the existing gas pipeline is dependent upon sufficient capacity within the pipeline to accommodate the additional gas supply from Ebberston throughout the year, and agreement from National Grid.

5.10 The Study Area is traversed from east to west by the A170 Pickering to Scarborough trunk road. North of the road, the topography rises steeply from approximately 60-70m AOD up to 220m. A number of valleys or dales run from north to south, including Netherby Dale, Given Dale and Weas Dale. South of the A170, the land continues to fall from 60-70 m down to approximately 20m. This part of the Study Area is criss-crossed by an extensive range drainage system, including New Ings Drain. Field boundaries are formed by trees and hedgerows and generally the field pattern is one of relatively thin strips of land running north to south.

5.11 The topography of much of the land between the wellsite and the A170 to the south rules out the vast majority of potential sites. A desk-top site search using the above criteria, together with a walkover of the area between the Ebberston Wellsite and Pickering, identified seven potential sites. An eighth alternative is to pipe the gas from Ebberston to the existing electricity generation plant at Knapton (see Figure 5.1). From north-east to south-west these were:

1. Land immediately adjacent to the Ebberston Wellsite, Ebberston;
2. Land south of Givendale Head Farm, Ebberston;

3. Wilton Heights Quarry, Outgang Road, Thornton;
4. Caulklands Quarry, Thornton-le-Dale;
5. Hurrell Lane, Thornton-le-Dale;
6. Broadmires Lane, Thornton-le-Dale;
7. Land adjacent to the Pickering NTS, Outgang Road, Pickering; and
8. Knapton Power Station, East Knapton.

5.12 Each of these sites is considered below.

Evaluation of Alternative Sites for Gas Processing Facilities

1. Land immediately adjacent to the Ebberston Wellsite

5.13 The initial preference for Moorland Energy was to locate an electricity generation facility immediately adjacent to the Wellsite, within the development boundary of the existing site, which would take the raw gas produced at the wellhead and generate up to 12MW of electricity. The electricity would then be taken by pylon to the nearest National Grid connection point at Thornton-le-Dale sub station. This option would have removed the need for laying pipelines from the site and would have kept the gas production and electricity generation contained on one site. Following a meeting with officers from NYMNPA on 17 February 2009, the Authority responded by letter, dated 18 March 2009 (**Appendix 5.1**). The NYMNPA acknowledge the reasoning for locating the electricity generating facility at the point of gas production. However, the nature and scale of works and buildings required was considered such that this would be inappropriate for a rural setting within the National Park. The letter adds that the on-going impact and activity associated with electricity production in the National Park would be contrary to statutory purposes and adopted policies. The construction programme anticipates that the processing facility would be constructed over a period 40 weeks or 9 months. The numbers of vehicles, including HGVs, which would be required to use Ebberston Common Lane over this period, would be likely to generate significant objections from current users of the road which is used by those travelling into the National Park. As a result, Moorland Energy discounted any greenfield location within the National Park.

2. Land south of Givendale Head Farm

5.14 An alternative location would be to locate the facility outside the National Park boundary but in close proximity to the wellsite. The land west of Ebberston Common Lane is well screened by woodland from the south and the west and is gently undulating, falling away to the south. There is sufficient land to accommodate the

processing facility and the construction compound. A new access road could be constructed from Ebberston Common Lane to the site. It also lies 600m to the south of Givendale Head Farm, the nearest residential property.

5.15 However, there are a number of disadvantages to this site which discount this location. All construction vehicles would be required to use Ebberston Common Lane which is a single track unclassified road with passing places for a distance of 4.5km. The construction programme anticipates that the processing facility would be constructed over a period 40 weeks or 9 months. The numbers of vehicles, including HGVs, which would be required to use Ebberston Common Lane over this period, would be likely to generate significant objections from current users of the road which is used by those travelling into the National Park. Additional survey work has also identified a large number of badger setts in the vicinity which would require the relocation of significant colonies of badgers which are a protected species. A new access road would also require the temporary stopping up of a public right of way. The site lies within an Area of High Landscape Value where Ryedale District Council will generally resist development proposals which would materially detract from the landscape character of the area (saved policy ENV3 of the Ryedale Local Plan). Finally, the landowner has stated that he has proposals to development this land for his waste management business and would not wish to see this prejudice by permitting an alternative facility on the same site.

3. Wilton Heights Quarry, Outgang Lane, Thornton

5.16 Wilton Heights Quarry is a former quarry with exposures of limestone and sandstone shale which lies immediately south of a public footpath which runs east from Outgang Lane, Thornton. The site is well hidden, relatively level and potentially large enough to accommodate the Gas Processing Facility and a construction compound. However, it is identified in the Ryedale Local Plan as a Site of Importance for Nature Conservation (SINC) for its flora and invertebrates. Policy ENV12 of the Ryedale Local Plan is a saved policy which states that development proposals which would have a material direct or indirect detrimental effect on a SINC will only be approved where conditions can be used to prevent material change or where it can be demonstrated that the benefits of the development clearly outweigh the significant importance of the site and that no suitable alternative site is available. As more suitable alternative locations are available, this designation would be a major policy objection. The site also lies within an Area of High Landscape Value where Ryedale District Council will generally resist development proposals which would materially detract from the landscape character of the area (saved policy ENV3 of the Ryedale Local Plan). The site would also require

both the widening and improvement of Outgang Lane for a 2.1km length of road or the construction of a new 1.5km road from the A170. For these reasons, Moorland Energy has discounted the site.

4. Caulklands Quarry, Thornton-le-Dale

5.17 Caulklands Quarry is an existing waste disposal site, operated by Yorwaste, and lies within the North York Moors National Park. It has operated as a waste disposal site for many years and is therefore an established commercial facility within the Park. However, a site inspection has demonstrated that there is insufficient available land within the Quarry to locate either a gas processing facility. Consequently, the site has been rejected.

5. Hurrell Lane, Thornton-le-Dale

5.18 The preferred location for a gas processing facility is land off Hurrell Lane, north of New Ings Lane. The site lies outside the National Park, although the boundary lies adjacent to the north west corner of the site, and outside the Area of High Landscape Value. It is sufficiently large to accommodate both the facility and the construction compound and storage area. The nearest properties, The Elacres and Charity Farm, are 1km from the site. Hurrell Lane is well screened from the north by the embankment of a dismantled railway line which runs along the northern boundary of the site. The embankment also has a number of mature trees which further screen the site. Whilst Hurrell Lane provides access to the site from the A170, the visibility splays at the junction are poor, particularly from the east. There are no archaeological, landscape or ecological designations affecting the site. The section of Hurrell Lane within Thornton-le-Dale has a number of residential properties along its frontage. Accordingly, a new access road is proposed between the A170 and the site. Therefore, the site meets all the criteria.

6. Broadmires Lane, Thornton-le-Dale

5.19 The land south of Broadmires Lane lies just outside the National Park. The land is generally flat, although the field system is divided into small fields separated by established hedgerows and trees. The location has the advantage of being close to the Thornton-le-Dale sub station for electricity generation and lies outside the Area of High Landscape Value. It is also located adjacent to the existing NTS gas pipeline which would potentially enable a “hot-tap”. However, the site has relatively poor access from the A170 which would require a new access to be constructed through the National

Park. The site also lies within 400m of a residential property. This site has therefore been discounted.

7. Land adjacent to the Pickering NTS

5.20 The existing NTS at Pickering lies adjacent to a large field to the east. The site is well screened by existing hedgerows and mature trees. However, the site is within 400m of both residential properties on Outgang Road and employers located on the Industrial Park. The site has been partially restored following the demolition of a natural gas processing facility which was constructed in the late 1960s and demolished in 1974. There are known to be colonies of great crested newts in the vicinity which are a protected species under European law. The site also has poor access from Outgang Road and would require a new access to be constructed from the north via the Thornton Road Industrial Estate. The site therefore does not satisfy the criteria and is not the preferred location.

8. Knapton Generating Station

5.21 Knapton Generating Station is located at East Knapton approximately 10.5km directly south of the Ebberston Wellsite. Planning permission was granted in 1993 for the construction of a gas-turbine plant and the facility was commissioned in 1994. The Station, which is operated by Viking UK Gas Limited, has a 41MW open cycle gas turbine which takes gas from reservoirs beneath the Vale of Pickering. However, it is understood that the plant has been forced to shut down the turbine on a regular basis because of the difficulty in ensuring regular flows of gas from the reservoirs. Moorland Energy also understands that the turbine is inefficient compared to central generation. Combined Cycle Gas Turbines (CCGT) which produce large quantities of electricity from gas supplied by the NTS are estimated to have an efficiency of c.56%. In contrast, local generation is only c.35% efficient. All electricity generated from burning fossil-fuels results in CO_2 emissions which contribute to greenhouse gases. Consequently, the more efficient a generating plant, the less CO_2 emissions will result.

5.22 This site forms an integral part of the separate, ongoing business of UK Energy Systems Limited and is, therefore, not available for Moorland Energy to purchase. The option for Moorland Energy to export its gas to the Knapton Generating Station is not viable because the capacity limitations of the existing gas turbine (9.8mmscf/d) are too low to accommodate both the gas produced by UK Energy Systems Limited and by Moorland Energy. Moorland Energy has, therefore, rejected this option.

Evaluation of Alternative Gas Processing Sites

5.23 The Study Area has identified seven potential alternative locations to the preferred site at Hurrell Lane. An assessment of the alternatives has been undertaken. Two sites (Options 1 and 4) lie within the National Park where the planning policies of the Park Authority restrict gas processing and electricity generating facilities. Option 3 is a Site of Importance National Conservation and lies within an Area of High Landscape Importance. Option 2 also lies within an Area of High Landscape Value and it is likely that development would not be acceptable to the landowner. Options 1 and 2 would require construction vehicles to use Ebberston Common Lane for up to 40 weeks of the year, whilst Option 3 would require a new access road from the A170 through the National Park. Options 6 and 7 lie within 400m of residential properties. Option 8 has been discounted because it would be a significantly more inefficient method of converting the gas compared to CCGT electricity generation via the NTS. This would have adverse effects upon emissions of CO_2 compared with the preferred option at Hurrell Lane. In addition, the capacity limitations of the existing gas turbine at the Knapton Generating Station are too low to accommodate both the gas produced by UK Energy Systems Limited and by Moorland Energy.

Alternative Pipeline Routes

Pipeline Route Criteria

5.24 The predominant land use is agriculture and, although there are relatively few roads in the area, there are a significant number of drains and watercourses particularly south of the A170. In determining the preferred pipeline route, Moorland Energy has sought to minimise possible disruption to both the operation of local farms and the local drainage network.

5.25 Having identified Hurrell Lane as the most suitable location for the proposed gas processing facility, Moorland Energy and its advisers undertook an assessment of the possible pipeline routes between the Ebberston Wellsite and the Gas Processing Facility. These are shown indicatively on **Figure 5.2**. A preferred pipeline route was identified which broadly followed the pipeline corridor of an existing 450mm (18") local transmission system gas pipeline which connects Pickering with Whitby. The alternative pipeline routes have also sought to avoid scheduled ancient monuments and designated ecological sites wherever possible. The routes also avoid forests and woodland areas because of the resultant loss of woodland necessary to construct a pipeline trench.

Discounted Options

Option 1

5.26 This is an alternative pipeline route for part of the preferred route in Givendale Rigg. It is 2.3km in length and was considered as an alternative because it avoided the need to use the existing 1.5km ride within the Givendale Rigg Forest. An existing gas pipeline, now operated by Northern Gas Networks, was laid in the 1970s in the forest ride but there was uncertainty as to whether the proposed new pipeline would be able to be laid in the ride and outside the easement of the existing pipeline. The route runs parallel to an earthworks which is a Scheduled Ancient Monument in a south westerly direction for approximately 1km, following the contours of Givendale Rigg and, where possible, avoiding the forest. The pipeline route then follows a more westerly direction which requires the need to cross the valley for approximately 800m. The pipeline then continues in a south westerly direction before reconnecting with the preferred pipeline route 1.1km north east of Warren House.

5.27 This alternative pipeline route was considered in more detail by Moorland Energy and was the subject of walkovers by environmental consultants appointed by Moorland Energy. The route would require a swathe of woodland to be removed for approximately 800m and would run close to a number of scheduled ancient monuments. Following a series of walkovers and discussions with Northern Gas Networks, the existing ride within the forest is considered sufficiently wide to enable the pipeline to be laid with the excavated soils stored outside the forest. As a result, this alternative pipeline route has been discounted.

Option 2

5.28 This route is 3.3km in length and, like Option 1, was considered as an alternative to part of the preferred pipeline corridor. It runs from a point 850m north of the A170, 1.1km north east of the village of Wilton, west of Weas Dale. It follows a southerly alignment for 1.2km, crossing the A170 at a point approximately midway between Wilton and Allerston. It continues south for approximately 350m, following the A170 crossing, before following a south westerly route for 650m avoiding Hayfield Village Farm. At the dismantled railway, it follows a westerly route along the same alignment as Option 3 below for 1.3km to the Hurrell Lane Gas Processing Facility.

5.29 This route was considered in detail by Moorland Energy and its advisers and was the subject of a walkover. The primary concerns are soils, flood risk and drainage issues

south of the A170. The pipeline would need to cross a number of drains and watercourses and the soils in this part of the district are known to be difficult for laying pipe-lines, with a high water table present.

5.30 The route would also temporary cause disturbance to the dismantled railway line which is protected under saved Policy T11 of the Ryedale Local Plan. Disused railway lines are often important wildlife corridors. The route would also come within 100m of a number of residential properties which may be affected, albeit during a temporary period, by the pipeline laying operations. For these reasons the route was discounted.

Option 3

5.31 This pipeline corridor option is 9.5km in length and follows a route south for the first 5km from the Wellsite before travelling in a westerly direction to the proposed Gas Processing Facility at Hurrell Lane. It runs west alongside the existing access road from the Ebberston wellsite before following a southerly route. The route then runs parallel to Oxmoor Dikes SAM and follows field boundaries. It passes Pheasant Hill Farm to the east, before heading south between Ox Dale and Kirk Dale. The pipeline route runs broadly parallel to Hagg Side Lane, avoiding established wooded areas south of Kirk Dale to the east and a number of coniferous plantations to the west. Between the villages of Ebberston and Allerston, the pipeline crosses the A170 south west of The Old Vicarage and continues due south through Bound Cliff and east of Great Dollybog Plantation before turning due west 200m north of Penniston Lane. The pipeline route follows the route of the dismantled railway line to the south of the village of Allerston. It crosses a number of drains and watercourses and passes under Cliff Lane south of Wilton at Wilton Carr House. It continues along the route of the former railway line to the Hurrell Lane site.

5.32 Option 3 was studied using a desk-based assessment and was discounted at an early stage of the process. A significant part of the corridor runs south of the A170 where there are known to be existing issues associated with ecological habitats, soils, flooding and drainage. The route would cross a number of watercourses which would potentially affect surface water drainage. The route would also temporary cause disturbance to the dismantled railway line which is protected under saved Policy T11 of the Ryedale Local Plan. Disused railway lines are often important wildlife corridors. The route would also come within 100m of a number of residential properties which may be affected, albeit during a temporary period, by the pipeline laying operations. For these reasons the route was discounted.

Evaluation of Alternative Pipeline Routes

5.33 The preferred pipeline route was chosen following both a desk-based assessment and subsequent walkovers of three alternative pipeline routes between the Ebberston Wellsite and the proposed Hurrell Lane Gas Processing Facility. Options 1 and 2 are 2.3km and 3.3km respectively in length and were considered as alternatives for part of the preferred pipeline route.

5.34 Option 1 avoided the existing ride within the forest at Givendale where there is an existing gas pipeline. At the time, there was some uncertainty as to whether the ride would be sufficiently wide enough to accommodate the new pipeline whilst at the same time, avoiding the easement of the existing gas pipeline operated by Northern Gas Networks. Following a walkover by Moorland Energy's pipeline engineers and discussions with Northern Gas Networks, the preferred pipeline route was selected as being suitable. Consequently, Option 1 was discounted.

5.35 Option 2 was identified as an alternative route for the southern part of the pipeline corridor. Option 3 is an alternative route for the entire length of the preferred pipeline route and both Options follow a more southerly alignment south of the A170 along the route of the dismantled railway line. In both cases, issues concerning soils, flood risk and drainage south of the A170 mean that either of these two options would cause operational difficulties in laying the pipeline. There are potential impacts upon existing drainage because of the need to cross a large number of drains and watercourses. For these reasons, Options 2 and 3 have been discounted.

Alternative Processes

5.36 The alternative to processing the gas produced at Ebberston is to generate electricity. The primary disadvantages for using the gas to generate electricity are set out below.

1. Operational

5.37 A small-scale electricity generating facility is likely to require no more than 1.6mmscfd (0.045mcm/d). However, Moorland Energy considers that the reservoir has the potential to produce more than 20mmscfd (0.566mcm/d). An electricity generating plant would therefore be an unsuitable and inefficient option to exploit a gas field which has potential to supply ten fold increase in gas.

2. Land Requirements

5.38 An option that Moorland Energy considered initially was to combine both gas processing and electricity generation on one site. This would, therefore, enable Moorland Energy to respond with greater flexibility to demands for both gas and electricity supply. A relatively small element of the likely gas supply provided by the wellsite would be used for electricity generation with the majority processed for transmission to the NTS. However, incorporating both electricity generation and gas processing on one site would require an area of 4ha, resulting in further landtake and additional development in the countryside.

3. Environmental Effects

5.39 The following are issues that make the planning application more difficult:

a) Noise

5.40 Small-scale electricity generation is likely to generate higher levels of noise from the turbines on site.

b) Air Quality

(i) Nitrogen Oxides

Small-scale electricity generation would be likely to create much higher NOX emissions compared to a gas processing facility.

(ii) CO_2

Combined Cycle Gas Turbines (CCGT) which produce large quantities of electricity from gas supplied by the NTS are estimated to have an efficiency of 56%. In contrast, local generation is only 35% efficient. All electricity generated using fossil fuels results in CO_2 emissions which contribute to greenhouse gases. Consequently, the more efficient a generating plant, the less CO_2 emissions will result.

Summary and Conclusions

5.41 Moorland Energy has not considered alternative locations for the existing Ebberston Wellsite. The Wellsite was granted planning permission in December 2007 for exploratory drilling. Following a meeting with officers of the NYMNPA in February 2009, the NYMNPA has confirmed that, in principle, gas production at the Ebberston Wellsite would be acceptable (Appendix 5.1).

5.42 The 'No Development' or 'Do Nothing' Option would result in no adverse environmental impacts. However, there would be a significant adverse socio-economic effect as the opportunity to exploit on-shore gas reserves would be lost. Government has made clear that the UK must increase its supply of gas and gas infrastructure, both large and small schemes, in order to reduce the reliance upon reducing reserves in the North Sea and foreign imports of gas. The 'No Development' option would also not result in the creation of up to 150 construction jobs and 20 permanent jobs in an area with the highest unemployment rates since 1997. The socio-economic benefits arising from the Proposed Development significantly outweigh the temporary minor adverse effects arising from the construction and subsequent operation of the Proposed Development.

5.43 A total of seven alternative locations within a Study Area have been considered for the siting of the proposed Gas Processing Facility. Each one has been considered against a number of fixed key parameters or constraints. These parameters are:

- a minimum area of 2.2ha in order to accommodate the necessary inlet facilities, compressor buildings, sweetening facility, hydrocarbon and dew point control, together with an office and maintenance building, car parking and landscaping; plus an adjacent construction compound and storage area requiring a minimum area of 1ha;
- flat or generally undulating, preferably with existing screening and landscaping;
- at least 400m from the nearest residential property in order to avoid potential disturbance from occasional noisy activities;
- an absence of known ecological, archaeological or landscape designations; and
- impact on climate change arising from CO_2 emissions.

5.44 Each of the seven alternative options have been considered and discounted because they did not meet one or more of the parameters. Two sites (Options 1 and 4) lie within the National Park where the planning policies of the Park Authority restrict gas processing and electricity generating facilities. Option 3 is a Site of Importance

National Conservation and lies within an Area of High Landscape Importance. Option 2 also lies within an Area of High Landscape Value and it is likely that development would not be acceptable to the landowner. Options 1 and 2 would require construction vehicles to use Ebberston Common Lane for up to 40 weeks of the year, whilst Option 3 would require a new access road from the A170 through the National Park. Options 6 and 7 lie within 400m of residential properties. Option 8 has been discounted because it would be a significantly more inefficient method of converting the gas compared to CCGT electricity generation via the NTS. This would have adverse effects upon emissions of CO_2 compared with the preferred option at Hurrell Lane. The capacity limitations of the existing gas turbine are too low to accommodate both the gas produced by UK Energy Systems Limited and by Moorland Energy.

5.45 Option 5 (Hurrell Lane) is therefore considered to be the most appropriate location.

5.46 Having identified Hurrell Lane, Moorland Energy considered three alternative pipeline routes for part or all of the preferred pipeline route. Option 1 avoided the existing ride within the forest at Givendale where there is an existing gas pipeline. At the time, there was some uncertainty as to whether the ride would be sufficiently wide enough to accommodate the new pipeline whilst at the same time, avoiding the easement of the existing gas pipeline operated by Northern Gas Networks. Following a walkover by Moorland Energy's pipeline engineers and discussions with Northern Gas Networks, the preferred pipeline route was selected as being suitable. Consequently, Option 1 was discounted.

5.47 Option 2 was identified as an alternative route for the southern part of the pipeline corridor. Option 3 is an alternative route for the entire length of the preferred pipeline route and both Options follow a more southerly alignment south of the A170 along the route of the dismantled railway line. In both cases, issues concerning soils, flood risk and drainage south of the A170 mean that laying these two options would cause difficulties in laying the pipeline. There are potential impacts upon existing drainage because of the need to cross a large number of drains and watercourses. For these reasons, Options 2 and 3 have been discounted.

5.48 Finally, Moorland Energy has considered the scope for using all or part of the gas produced at Ebberston to generate electricity using a small turbine. The consequences arising from additional land requirements, potential effects upon the existing noise background, air emissions, the likely generation of CO_2 and its effects upon climate change have resulted in energy generation being discounted in favour of gas processing.