CANNON
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Highways, Transport & Infrastructure Planning

Appendix 11

Ryedale, Gas Pipeline

Transport Assessment

April 2010

for Moorland Energy Ltd

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Document Review Sheet

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A. Accident Data and Plot

1.0 Introduction

1.1 Cannon Consulting Engineers have been appointed by Moorland Energy Limited to provide a Transport Assessment to support a planning application with respect to a new gas processing plant and pipeline in the Ryedale area of North Yorkshire. The site location and wider area context are shown on **Figure 11.1**.

1.2 In summary, Moorland Energy Limited is proposing to undertake gas production at a Wellsite in Ebberston from where the gas will be piped to a new processing plant east of Hurrell Lane near Thornton-le-Dale. An Above Ground Installation (AGI) connection into the existing pipeline network that runs to the south of Hurrell Lane will be provided.

1.3 The proposed development comprises the following elements:

- Gas production from the existing Ebberston Wellsite;
- The construction of two underground gas pipelines from the existing Ebberston Wellsite to a new Gas Processing Facility;
- A new access road between the A170 and the proposed Gas Processing Facility;
- A Gas Processing Facility at Hurrell Lane, Thornton-le-Dale; and
- An Above Ground Installation (AGI) connection into the existing National Transmission System (NTS) pipeline to the south of the Gas Processing Facility on land off New Ings Lane

1.4 This Transport Assessment will consider the permanent and temporary traffic impacts associated with the project and highways access during both the construction phase and the operational phase.

1.5 The remainder of this report is set out as follows:

Section 2: Policy Review

Section 3: Baseline Conditions

Section 4: Scheme Proposals

Section 5: Operational and Construction Phases

Section 6: Summary and Conclusions

1.6 Two site meetings have been undertaken with North Yorkshire County Council's Highway Officer to ascertain requirements for access and considerations for construction traffic.

2.0 Policy Review

2.1 National Policy

Planning Policy Guidance Note 13: Transport (March 2001 – 3rd Edition)

2.2 In response to the challenge of integrating land use and transport planning, the Government set out its policy for the future of transport in the White Paper "A New Deal for Transport: Better for Everyone" (July 1998), with the objective to extend choice in transport and secure mobility in a way that supports sustainable development.

2.3 PPG13 was published in March 2001. The objectives of PPG13 are to integrate planning and transport at the national, regional, strategic and local level to:

- promote more sustainable transport choices for both people and for moving freight;
- promote accessibility to jobs, shopping leisure facilities and services by public transport, walking and cycling, and
- reduce the need to travel, especially by car.

2.4 In paragraph 6 of PPG13 it is stated that, when considering planning applications, local Authorities should:

"...actively manage the pattern of urban growth to make the fullest use of public transport, and focus major generators of travel demand in city, town and district centres and near to major public transport interchanges".

2.5 In particular to freight, PPG13 sets out the policy when considering planning applications where freight is involved. In paragraph 45, it is stated that;

"...while road transport is likely to remain the main mode for many freight movements, land use planning can help to promote sustainable distribution, including where feasible, the movement of freight by rail and water. In preparing their development plans and in determining planning applications, local authorities should:

- Where possible, locate developments generating substantial freight movements such as distribution and warehousing, particularly bulk goods, away from congested central areas and residential areas, and ensure adequate access to trunk roads.
- ...promote opportunities for freight generating development to be served by rail or waterways by influencing the location of development..."

2.6 Regional Planning Policy

2.7 The Regional Spatial Strategy for Yorkshire and Humber was published in May 2008. It sets out the aims and objectives to guide development in the area over the next 15 to 20 years.

The plan embodies the Regional Transport Strategy and is taken into account by the areas local authorities in their Local Development Framework and Local Transport Plans. The plan identifies the A64, A19 and A1 as part of the strategic highway network in the area.

2.8 Local Planning Policy

North Yorkshire Minerals Local Plan, 1997

2.9 The North Yorkshire Minerals Local Plan was adopted in 1997. A Local Plan is a document which sets out policies and specific proposals for development and use of land. The plan provides local planning policy guidance specific guidance on gas operations and provides guidance on the key activities likely to be involved. Transport and Access are identified as one of the key considerations.

2.10 Policy 7/9 refers specifically to transport and states:

"*Proposals for the development of oil or gas resources which are likely to involve the bulk transport of material by road will only be permitted where developers can demonstrate that non-road transport is not feasible and that the traffic generated will not have an unacceptable impact on local communities."*

2.11 The adopted Local Plan is still relevant until the time that the replacement Minerals and Waste Core Strategy is adopted. The Core Strategy was withdrawn in March 2009 for further review.

North York Moors National Park Authority Core Strategy, 2008

2.12 The North Yorkshire Moors are located on the northern side of the A170 and in the vicinity of the proposed works. It is therefore important to consider the North York Moors National Park Authority Core Strategy which was adopted in 2008. This is a key document which forms a significant part of the North York Moors Local Development Framework.

2.13 Chapter 10 of the document refers to transport. Policy 23 'New Development and Transport' requires consideration of the need to travel and by which mode in order to reduce the environmental impact of traffic on the National Park. Points 3 and 4 of this policy are outlined below and are considered to be relevant:

> 3) The external design and layout and associated surfacing works take into account the needs of all users including cyclists, walkers and horse riders.
>
> 4) It is of a scale which the adjacent vehicular road network has the capacity to serve without detriment to highway safety or the environmental characteristics of the locality.

Local Transport Plan 2 (2006-2011)

2.14 This is the second North Yorkshire Local Transport Plan (LTP) and replaces the provisional Plan published in July 2005. It sets out the aims and objectives for transport in North Yorkshire for five years and the strategies and policies.

2.15 The plan identifies the A170 as a 'primary route'. The main transport related issues identified for the Pickering and Thornton le Dale area include seasonal congestion associated with summer tourist traffic visiting attractions such as the North York Moors Railway, Pickering Castle, Flamingoland and the Dalby Forest Visitors Centre. Congestion is particularly experienced at the junctions of The Ropery and Vivis Lane with the A170 in Thornton-le-Dale. The LTP 2 identifies plans to improve these junctions by realigning Vivis Lane to create a cross road junction rather than the current staggered junction arrangement. The scheme has been in the pipeline for a number of years and recently funding has been obtained to progress with the scheme and an application has been made by North Yorkshire County Council which is currently going through the planning process and is pending a decision (Application reference 09/01309/CPO).

2.16 According to Appendix 2 of the LTP2 peak daily traffic flows in the summer months are typically some 33% higher than the Average Annual Traffic Flows (AADT). A large proportion of this traffic is through traffic heading for the east coast holiday resort of Scarborough and on the A169 to Whitby.

2.17 LTP2 expires in March 2011 therefore North Yorkshire County Council are currently developing a third Local Transport Plan (LTP3) which will cover the period 2011 – 2016. The final plan is anticipated to be approved in December 2010.

2.18 Summary

2.19 It is proposed to transport the gas between the Ebberston Wellsite to the Gas Processing Facility by mean of an underground pipeline. This is, therefore, in line with policy objectives stated in the adopted Mineral Local Plan to use non-road forms of transport where possible.

2.20 It is considered that the proposals are located in close proximity to the A170 which is part of the primary route network and therefore suitable and expected to facilitate the transportation of construction materials. The surrounding network is considered to be able to serve the development without detriment for the short temporary period of the construction process.

2.21 It is also noted that the A170 is a key tourist route in the summer and will suffer from seasonal congestion and higher daily traffic flows on a result. This is noted and the assessment will consider impacts of construction related traffic specifically on this seasonal peak period. Given the very low operational traffic generation once the Proposed Development is operational, the impact of this will be minimal; however, the construction phases will need to be considered in more detail.

2.22 In conclusion, it is clear that the intention to pipe gas from the Wellsite to the processing

facility and onwards via the National Grid connection is entirely consistent with policy. The construction period represents the most significant impact and the site is well located to take access from the A170 and ensure minimal impact on inadequate local roads.

3.0 Baseline Conditions

3.1 Overview and Site Location

3.2 The area of interest to this project is Ryedale in North Yorkshire, and specifically the area between Ebberston (to the east) and Thornton-le-Dale (to the west). The assessment site is predominately rural in character and a patchwork of agricultural fields and forest. The area of interest includes a number of small rural villages namely Wilton, Thornton-le-Dale, and Ebberston all of which lie on the A170 corridor. This chapter will consider the characteristics of the three main elements of the project: the pipeline route, the Wellsite and the Hurrell Lane Gas Processing Facility as well as the existing traffic conditions. The zones and areas of interest are shown on **Figure 11.1.**

3.3 Local Highway Network

3.4 The A170 runs east to west between Scarborough and Thirsk where it meets the A19, A61 and M1. At Pickering the A169 runs north to south between Whitby and York.

3.5 The A170 is classified as a primary route within the County and which serves the eastern region of North Yorkshire. The majority of the A170 in the vicinity of the proposed works is subject to national speed limit (60mph) and is a two way single carriageway road. The speed limit reduces to 40mph and 30mph at the villages it passes through such as Thornton-le-Dale. There are gateway features incorporating traffic calming measures to highlight the change in speed to drivers at the entrance to the villages. The width of the A170 in the vicinity of the study area is 7.3m.

3.6 The study area can be separated into three zones for the purpose of highways and access assessment. These zones are indicated on **Figure 11.1** and discussed in more detail below:

1) the Wellsite at Ebberston

2) the pipeline route and

3) the Hurrell Lane Gas Facility

3.7 The Wellsite (Zone 1)

3.8 The Wellsite is located within the Parish of Ebberston on the eastern edge of the Dalby Forest and just west of the Wykeham Forest. The Wellsite is approximately 4km north of the village of Ebberston. It occupies the eastern end of a long, narrow field which forms part of the landholding of Givendale Head Farm.

3.9 Planning permission for this exploration at the Wellsite was granted in 2007. This included the construction of a temporary access track to the site from the Ebberston Common Lane which runs from the junction with the High Street (A170) in Ebberston and through the North Yorkshire Moors. This was the approved route used for construction traffic associated

with the Wellsite exploration and as such is provided with suitable signage to guide traffic (see Photograph 1).

3.10 The junction at which Ebberston Common Lane meets the A170 at the High Street (A170) at Ebberston is within an area controlled by a speed limit of 30mph and forms a simple T junction. Ebberston Common Lane is a narrow single track road with passing bays at various points and is subject to national speed limit.

3.11 Vehicles associated with the construction and exploration of this Wellsite have been accessing it via the A170 and Ebberston Common Lane without incident since 2007. A number of road traffic accidents recorded at this location related to vehicles losing control on the A170. There are no accidents relating to turning movements at the junction. The route is primarily used for access only and occasionally used by heavy goods vehicles servicing the farm and commercial premises including the recycling unit at Givendale Head Farm. Farm dwellings served by the road are set well back and would not be affected by the development related traffic.

Photograph 1: Ebberston Lane leading to the existing Wellsite.

3.12 The Pipeline Route (Zone 2)

3.13 The proposed pipeline will transport the gas from the Wellsite described above to a Gas Processing Facility proposed on land east of Hurrell Lane in Thornton-le-Dale. The pipeline

will therefore run in a north-east to south-west direction linking the two sites. The pipeline route is shown in **Figure 11.1**. The route runs through the North Yorkshire Moors on the edge of the Dalby Forest and therefore has limited direct impact on the highway network. The pipeline only crosses the A170 at one location close to the Hurrell Lane Gas Processing Facility (RX3) and crosses two other minor access roads; one access road to Givendale Head Farm (RX1) and one to Warren House (RX2). These locations are shown on **Figure 11.1.**

3.14 The Hurrell Lane Gas Processing Facility (Zone 3)

3.15 To the south-west of the study area is Hurrell Lane which runs north to south from the A170 at Thorton-le-Dale. This is a single carriageway road with few passing bays and provides access to the few farms in the area but doesn't provide for any onward destinations. There is a ditch which runs along the majority of the eastern side of the road. New Ings lane is a narrow track which runs west to east from Hurrell Lane. The proposed Gas Processing Facility is located just east of Hurrell Lane and just north of New Ings Lane. The proposed AGI and Hot Tap connection will be located to the side of the existing pipeline route just south of New Ings Lane. The location of the Hurrell Lane Gas Facility and the AGI is shown in **Figure 11.1.** No access to the Gas Processing Facility is proposed from Hurrell Lane or New Ings Lane. Infrequent access to the AGI for maintenance purposes will be provided from Hurrell Lane.

3.16 The A170 runs east to west at the northern boundary of the field in which the processing plant is proposed.

3.17 Existing Traffic Flows

3.18 DfT average annual daily traffic (AADT) count data was obtained for the A170 at Ebberston, just east of the junction with Ebberston Common Lane. The number of vehicles passing through the count point on an average day of the year for the period between 1999 and 2008 is shown in **Table 3.1.**

Table 3.1: AADT A170 at Ebberston.

Date	AADT A170 at Ebberston (no.)	HGV (%)
1999	5922	3
2000	6326	4
2001	6136	5
2002	7450	4
2003	9147	3
2004	9771	4
2005	7301	3
2006	9007	4
2007	6073	3
2008	6458	4

3.19 The two way AADT for 2008 at this location on the A170 was 6,458 vehicles of which 4% were HGVs. This is well within link capacity for a road of this type (a single two way

carriageway road) in accordance with DMRB guidance (TA 46/97) which is up to 13,000 vehicles per day as a recommended traffic flow range. However, such roads can carry much higher volumes of traffic in congested urban situations.

3.20 The AADT data for the years 1999 to 2008 shows that there has been a variation in the number of vehicles on this stretch of road over the years. The lowest was in 1999 at 5,922 and the highest in 2004 at 9,771. The average AADT for the 10 years period is 7,359.

3.21 It is acknowledge that the LPT2 comments that traffic flows can be some 33% higher than the AADT in peak tourist seasons. This would result in a daily traffic flow of 8,589 vehicles in peak tourist season based on the 2008 count which is well within capacity for a road of this type in accordance with DMRB guidance (TA 46/97).

3.22 Speed Survey Data A170

3.23 Following scoping discussions with NYCC it was agreed that speed surveys would be carried out on the A170 in the vicinity of the proposed access to the processing facility. In accordance with DMRB guidance (TA 22/81 Vol 5, Section 1, Part 4) 85th percentile speed surveys were undertaken at two separate locations on the A170. These are locations which were considered potentially suitable for a new access to the Hurrell Lane processing plant. The locations the speed surveys are shown in **Figure 11.2** and **Table 3.2** and **3.3** summarise the results**.** The 85th percentile combined speed at Location 1 was measured at 52.0mph and at Location 2 at 57mph. Site location 1 is within the 40mph speed limit and is just west of the speed limit change from national speed limit to 40mph through the village of Thornton-Le-Dale. Location 2 is in the national speed limit section of the A170. It would appear that vehicles are therefore travelling within the speed limit at Location 2 but above the speed limit at Location 1 in the area of transition from 60mph to 40mph.

Table 3.2 Vehicle Speed Survey Results – Location 1

Category	Eastbound	Westbound
Mean	47.4mph	43.8mph
Combined Mean	45.6mph	
Dry 85th percentile	53.2mph	50.0mph
Combined Dry 85th percentile	52.0mph	
Wet 85th percentile	50.7mph	47.5mph
Combined Wet 85th percentile	49.5mph	

Table 3.3 Vehicle Speed Survey Results – Location 2

Category	Eastbound	Westbound
Mean	51.6mph	49.5mph
Combined Mean	50.6mph	
Dry 85th percentile	57.0mph	57.0mph
Combined Dry 85th percentile	57.0mph	
Wet 85th percentile	54.5mph	54.5mph
Combined Wet 85th percentile	54.5mph	

3.24 Accident Records

3.25 Accident data for the period 01/01/2004 to 30/11/2009 has been obtained from North Yorkshire County Council. It should be noted that North Yorkshire County Council commented that the 2009 dataset was not yet complete and therefore may be subject to change. During this seventy one month period a total of 26 personal injury collisions (PICs) were recorded along the stretch on the A170 between Dog Kennel Lane in Thornton-le-Dale to the west and Sandspunt Lane in Ebberston to the east. This covers a section of the A170 which is approximately 6.7km in length. **Table 3.4** summaries the accident data by calendar year. Note that the 2009 record does not represent a full calendar year. The accident data and plot is contained in **Appendix A.**

Table 3.4 Accident Summary by calendar year

Year	Personal Injury Accidents				Pedestrian and Vehicle Involvement					
	Total	Fatal	Serious	Slight	Peds	Motorcycle	Cars	LGVs/HGVs	Public Transport	Other
2004	4	2	0	2	0	1	6	1	0	0
2005	2	0	1	1	0	0	3	0	0	0
2006	5	0	1	4	0	0	13	1	1	0
2007	5	0	2	3	0	1	5	1	0	0
2008	8	0	1	7	0	0	14	0	1	0
2009	2	0	1	1	0	0	3	1	0	0
Totals	**26**	**2**	**9**	**14**	**0**	**2**	**44**	**4**	**2**	**0**

3.26 Of the 26 PIAC's recorded 2 were fatal, 6 resulted in serious injury and 18 resulted in slight injury. A total of 4 of the PIAs occurred in 2004, 2 in 2005, 5 in 2006, 5 in 2007, 8 in 2008 and 2 in the period included for 2009.

3.27 A total of 17 of the collisions which occurred were the result of the driver losing control of the vehicle. A number of the PIA records cite 'travelling too fast' as a contributory factor to the loss of control accidents. 9 of these accidents occurred in wet or icy/slippery conditions. 10 occurred when the vehicle was travelling in a west to east direction and 7 occurred in the opposite direction.

3.28 Five of the accidents recorded were the result of rear end shunt accidents. 3 of which occurred in an eastbound direction and 2 in a westbound direction. 3 of the accidents

recorded involved overtaking manoeuvres. 1 of the accidents recorded occurred when a bus passenger fell whilst onboard the bus.

3.29 Analysis has been undertaken in accordance with DMRB Vol 13 Part 2 Chapter 4 'The valuation of accidents on links' to ascertain how the recorded number of collisions on the A170 compares to the anticipated number of accidents on a road of this type. All six years worth of accident has been included in the analysis. The A170 is classed as an 'Older S2 A Road' and the section under consideration is considered to include both links and junctions therefore the 'Link and Junctions Combined (2000 Base)' parameters from Table 4/1 has been applied. The route has been separated into sections according to the speed limit for the purposes of the analysis.

3.30 The analysis shows that a total of 31 collisions would be anticipated on a stretch of road of this nature and length. This compares with a total of 26 recorded collisions over the study period and therefore there is no perceived accident problem at the location of the proposals.

3.31 Summary

3.32 The local highway network is considered to be able to accommodate the proposals.

3.33 Due to the nature of the proposals it is not considered that they will have an adverse impact on the accident record in this location. The traffic impact is considered negligible for this road type. Signs on the approach to the new access in accordance with the Local Authority design standards will be provided to warn drivers approaching of the possibility of vehicles turning into and out of the access. A number of these vehicles will be HGV's and although infrequent they will be slow moving in nature, as such signage to raise driver's awareness is an appropriate response. The speed survey data shows that vehicles at Location 2 were travelling below the speed limit. This is the location at which the access to the processing plant is proposed.

4.0 Scheme Proposals

4.1 Scheme Proposals

4.2 The proposed development comprises of the following:

- Gas production from the existing Ebberston Wellsite;
- The construction of two underground gas pipelines from the existing Ebberston Wellsite to a new Gas Processing Facility;
- A new access road between the A170 and the proposed Gas Processing Facility;
- A Gas Processing Facility at Hurrell Lane, Thornton-le-Dale; and
- An Above Ground Installation (AGI) connection into the existing National Transmission System (NTS) pipeline to the south of the Gas Processing Facility on land off New Ings Lane.

4.3 Gas production at Ebberston Well Head (Zone 1)

4.4 The Ebberston Wellsite will normally be unmanned but with daily visit by technicians and/or maintenance staff so permanent access to the site will be required. The access road constructed as part of the exploration of this Wellsite is considered sufficient for this purpose.

4.5 Construction of gas pipelines (Zone 2)

4.6 The proposed development comprises of gas production at the existing Ebberston Wellsite and the construction of two pipelines in parallel carrying wet gas and condensate respectively as well as a fibre optic cable. The pipelines will transport the gas from the Wellsite at Ebberston to a gas processing plant on land off Hurrell Lane in Thornton-le-Dale. This is a distance of approximately 8.6km.

4.7 An AGI connection into the existing pipeline network which runs to the south of New Ings Lane is proposed.

4.8 The constructions of the pipeline will be within a corridor with a “working width” of 42m. The proposed pipeline route crosses the following local roads and accesses. **Figure 11.1** shows the location of these crossing points.

1. Access road to Givendale Head Farm (RX1)
2. Road access to Warren House (RX2)
3. Main road crossing of A170 (RX3)

4.9 Gas processing plant (Zone 3)

4.10 It is proposed to provide a Gas Processing Facility at land east of Hurrell Lane in Thornton-le-Dale. The site is just north of New Ings Lane and covers an area of approximately 5.8 hectares. This will require operational staff to man the site, details of which are contained in **Section 5.0**.

4.11 Provision of new access junction (Zone 3)

4.12 It is proposed to provide a new access to the processing plant directly from the A170. Two points of access were considered in detail, the locations of which are shown in **Figure 11.2.** A meeting on site with the North Yorkshire County Council Highways Officer was held to consider the appropriateness of both access options.

4.13 Both locations were considered to be good however the eastern most access was favoured due to the clear sight lines achievable over the required distance for the speed of the road. The vertical alignment of the road at the western most access option restricted visibility to westbound traffic slightly.

4.14 The A170 is subject to national speed limit at this location and therefore 215m visibility at a setback of 4.5m is required in accordance TD 9/93. North Yorkshire Highway Authority also requested that this is achievable at a setback of 9m. **Figure 11.5** shows that this is achievable. The level of the ground on the western side of the access will require lowering as it is currently higher than the carriageway surface and could obscure visibility at the driver's eye height for cars/HGV's.

4.15 This access is located on the southern side of the A170 where there is currently a lay-by which is believed to originally be part of the old road alignment. The proposed access will formalise the current arrangement, providing an access road to the processing plant which will have priority over the lay-by and the existing farm entrances which also take access from it. This will formalise the existing lay-by entrance and raise its conspicuity and is considered therefore to be an improvement on the existing situation.

4.16 At the request of the Highway Authority a Stage 1 Road Safety Audit (RSA) will be undertaken as a condition of any planning permission. This will also include details of the temporary construction access to the drilling site to run the pipeline under the A170.

4.17 Proposed access road

4.18 The proposed access road has been designed in accordance with North Yorkshire County Councils 'Specification for Housing and Industrial Estates Roads and Private Street Works, October 1999'. It is anticipated that the access will be adopted by North Yorkshire County Council from the edge of the carriageway to the highway boundary with the remainder being private. A gate will prevent unauthorised access.

4.19 The proposed access road will follow the line of the field from the A170 towards the processing plant to minimise the impact on the field. It bends to the east before turning

west to reach the plant to avoid the line of mature trees at the bottom of the field. The road layout is shown in **Figure 11.7**.

4.20 The proposed road is 4.5m in width with 3m passing bays at various locations along the route to allow two large vehicles to pass one another. The road widens to 9m at the bend around the tree line to accommodate the turning circle of the largest anticipated vehicle and to allow vehicles to negotiate one another as the tree line will restrict inter-visibility at this location.

4.21 Above Ground Installation (AGI)

4.22 An AGI connecting is proposed to the south of New Ings Lane. This will require access by National Grid transit maintenance vehicles albeit this will be infrequent at most 2-3 times per year. No access will need to be provided from the processing plant across New Ings Lane, to the AGI location. Access will be taken direct from Hurrell Lane.

5.0 Operational and Construction Traffic

5.1 There are two phases to this project; the construction phase and the operational phase. The construction phase relates to the movement of materials for the construction of the Wellsite, the pipeline itself as well as the Gas Processing Facility and the access road. It is at the start of the construction phase of most Civil Engineering projects when vehicular activity is greatest. This project would be no exception. The operational phase relates to the day to day maintenance and running of the processing plant once construction is completed.

5.2 Information about the numbers of vehicles required at each phase of construction and at the operational phase (once construction is completed) has been provided by Moorland Energy Ltd from experience of similar projects elsewhere.

5.3 Operational Phase

Working hours

During the operational phase the processing plant will be operating 24 hours per day, 7 days per week.

Personnel

5.4 It is estimated that during the day (07:00 – 18:00) the processing plant will operate with five members of staff consisting of 1 shift supervisor and 4 operational workers. One of these operational staff will be required to visit the Wellsite for inspection at some point during the day shift.

5.5 The night shift (18:00 – 07:00) will require just 2 operational members of staff.

Vehicles

5.6 Traffic flows associated with the operation of the Gas Processing Facility will be significantly lower than those associated with the construction phase. On a daily basis, a number of on site vehicles will be required to move equipment and aid the general operations of the processing plant. These will largely be contained within the site area, only occasionally leaving to transport equipment to and from the Wellsite or other locations as and when required.

5.7 Large vehicles will also require access to the Gas Processing Facility for the deliveries and removal of materials on a weekly basis.

5.8 Once the construction phase is complete the long term traffic impact relating to the operation of the Proposed Development is insignificant. **Table 5.1** summarises the anticipated traffic impact relating to the day to day operation of the Gas Processing Facility and regular deliveries and removals.

Table 5.1 Summary of vehicle movements Relating to Staffing

Site Operation	
Day time (07:30-19:00)	**Night Time (19:00-07:30)**
1 supervisor 4 operational staff	2 operational staff

Table 5.2 Summary of vehicle movements Relating to Operation and Deliveries

Other operational vehicles and deliveries		Maximum Daily Traffic Impact
Operational vehicles	**Regular External Deliveries/ Removals**	
1 4x4 maintenance vehicle 3 trailers (1 injection pump trailer, a condensate/water recover tank, a heavy duty twin axle trailer to move tools).	*Main Site* • LPG Delivery - articulated road tanker (HGV) • Sulpher cake removal - 12 tonne flat bed (HGV) • Water/ condensate removal – site pick up/4x4 • Corrosion inhibitor recovery - site pick up/4x4 • Glycol recovery - site pick up/4x4 *Wellsite* • Corrosion inhibitor delivery – delivery by road tanker (HGV), recovery by site pick up/4x4 • Glycol delivery - delivery by road tanker (HGV), recovery by site pick up/4x4	5 two way staff movements 7 two way deliveries and removals. **Total 12 two way vehicle trips**

Parking

5.9 Permanent parking will be provided for 15 cars/vans (to cover permanent staff and any temporary maintenance crew and/or visitors) at the Gas Processing Facility. Permanent parking would be provided for 3 cars/vans at the Wellsite which although unmanned would require daily maintenance visits.

Routing of operational traffic

5.10 All vehicle movements relating to the operation of the Gas Processing Facility will use the new access from the A170 as described in **Section 4.0.** This will route vehicles via the A170 which as a Primary Route is considered suitable for accommodating such traffic. Maintenance visits to the Wellsite will be routed by Ebberston Common Lane and the access track to the Wellsite. This track was constructed as part of the exploratory works and is considered to be of sufficient standard for a permanent maintenance access.

5.11 Construction Phase

5.12 The construction period at the processing plant works has an anticipated to run from 11/04/2011 to 26/11/2012. The normal construction period for pipeline projects is in March/April to September/October. This is due to ground conditions and the seasonal reduction in gas use at this time of year. A programme of works is contained in **Table 5.3**.

Table 5.3: Construction Program

Construction Phase
Access Road Construction (11/04/2011 - 17/06/2011)
Hurrell Lane Gas Facility (07/07/2011 - 28/03/2012)
Pipeline (05/03/2012 - 18/10/2012)
Ebberston Wellsite (07/07/2011 - 28/03/2012)
National Grid hot tap & AGI construction (30/04/2012-14/09/2012)
Final connection into National Grid hot tap (17/09/2012-28/09/2012)
Pre-commissioning & commissioning phases (29/03/2012-26/11/2012)

Working Hours

5.13 Restrictions on working hours will be implemented and these will be agreed with the Planning Authority.

Pipeline Route Construction

5.14 The proposed pipeline crosses three roads; the public road to Givendale Head Farm called Ebberstoan Common Lane, the private road access to Warren House and the A170. Two different road crossing techniques are to be used. Construction of the crossings can be *open cut* where the traffic flow is low and easily controlled. This involves digging a trench directly through the road, placing the pipe and backfilling. At major roads where the disturbance of an open cut crossing will cause is unacceptable, *auger boring* (or a similar technique) will be used. This limits surface disturbance.

5.15 The pipeline construction will be carried out with minimum inconvenience to users of the highway. **Table 5.4** summarises the road crossing methods.

Table 5.4: Pipeline road crossings.

Crossing Reference	Description	Crossing Method
RX1	Access road to Gwillian Farm (Ebberston Common Lane)	Open cut
RX2	Road access to Warren House	Open cut
RX3	Main road crossing of A170	Auger Bore (or similar)

5.16 Access will be required to either side of the A170 where pipeline route crosses the road in order to run the pipeline under the carriageway. It is proposed to use the existing lay-by on the southern side of the A170 to gain access to the works area on this side of the road. It is propose to formalise the existing farm access on the northern side of the A170 to allow access to the works access at this location. A standard Highway Authority construction detail for upgrading the field access will be used and has been agreed.

5.17 It is anticipated that some vehicles will need to cross from the southern side of the A170 (where materials will be stored in the laying down area adjacent to the processing plant) to the northern side of the A170 (to the pipeline crossing and onwards the pipeline route). It is proposed to provide a vehicle crossing point between the northern and southern side of the A170. This will be controlled with temporary traffic management. **Figure 11.4** illustrates the temporary access and traffic management which will consist of:

- A temporary 40mph speed limit between Thornton-le-Dale and Wilton;
- Temporary traffic signals on the mainline A170;
- Temporary vehicle activated signs to be used in particularly busy periods of the construction to warn approaching drivers of construction traffic and speed restrictions in place;
- Temporary traffic management signing in accordance with DfT 'Traffic Signs Regulations and General Directions', 2002

Personnel and Vehicles

5.18 The construction phase refers to the construction of the Wellsite, pipelines and Gas Processing Facility which includes the access road. **Table 5.5** below summaries the number of personnel required and the duration (in weeks) of construction. **Table 5.6** summarises the vehicle trips this will generate.

Table 5.5 Summary of construction personnel

Personnel on site each week				
	Project Duration weeks (no.)	Max (no.)	Min (no.)	Average (no.)
Wellsite	32	26	2	10
Pipelines	23	73	20	51
Processing Site	44	51	6	33

Table 5.6 Summary of construction vehicle movements

	Vehicle Movements (no.)		Time period
	HGV	**Others**	
Wellsite	6	35	Weekly
	2	7	Daily
Piplines	68	204	Weekly
	12	34	Daily
Processing Site	31	119	Weekly
	7	24	Daily

5.19 The peak construction impact has been considered in relation to the AADT 10 year average of 7,359 of which 4% (294) were HGV's. **Table 5.7** summarise the impact peak construction traffic impact.

Table 5.7 Summary of peak construction vehicle impact

Non HGV Traffic	HGV Traffic	Total	Percentage Increase Total	Percentage Increase HGV
65	21	86	1%	7%

5.20 The peak construction traffic is anticipated to result in a 1% increase in total traffic on the A170 and a 7% increase in the number of HGVs. This peak impact is anticipated to last less than 1 month and is considered negligible.

Parking

5.21 The construction personnel required at the Gas Processing Facility are estimated to be 33 per day on average with a peak of 51. A parking allowance at the processing plant during the construction phase for 60 cars will be provided to also accommodate the pipeline construction workers.

5.22 The construction personnel for the Wellsite are estimated as 10 per day on average with a peak of 26. A parking allowance during the construction phase would be provided at the Wellsite.

Routing of construction traffic

5.23 The origin and destination of the majority of traffic associated with the construction phase will be known. This makes the provision of detailed instructions regarding the routing to drivers easy to implement. A traffic management plan, to be agreed with the Highway Authority, would be operated to minimise impact on local roads.

Wellsite at Ebberston

It is proposed to access the Wellsite via Ebberston Common Lane which meets the A170 at Ebberston. This route has been previously approved for use by vehicles associated with exploration at the Wellsite and is already signed as such.

Processing plant

The Gas Processing Facility will be accessed from the A170 via the proposed access road for the facility. This avoids traffic using local routes including Hurrell Lane.

Pipeline construction

Construction traffic associated with the pipeline will access the pipeline route either from the northern end from the Wellsite or from the temporary access from the northern side of the A170. The choice between these two routes will depend on which section of the pipeline is being worked on at the times.

5.24 **Figure 11.3** shows the construction traffic routes within the study area and estimated number of associated with each aspect of the project. This figure also show the construction programme timeline and estimated numbers of vehicles required at each point in time.

5.25 In order to monitor the physical impact of the construction traffic on the routes other than the A170 quality surveys will be undertaken. Where necessary, mitigation such as the reinstatement of damage to the edge of the carriageway surface will be implemented. The methodology for the monitoring will be agreed with the Highway Authority prior to commencing construction. This is particularly relevant to the Ebberston Common Lane route to the Wellsite.

Temporary lay down areas for construction materials

5.26 A lay down area to store materials required during the construction process is proposed at the southern end of the field in which the Gas Processing Facility access road is proposed, adjacent to the location of the processing plant. The proposed access road will therefore be used to access the laying down area, with routing the same as describe above. All material for the project will be stored at this location.

5.0 Conclusion

5.1 Cannon Consulting Engineers have prepared this Transport Assessment (TA) to support a planning application for a new Gas Processing Facility, Wellsite and Pipeline in the Ryedale area of North Yorkshire. The Transport Assessment supports an EIA planning application and forms a technical appendix to the Environmental Statement which is summarised in Chapter 11 of the ES.

5.2 The assessment has considered the permanent and temporary traffic impacts associated with the project during the operational and construction phases of development respectively.

5.3 The scope of the assessment was discussed with North Yorkshire County Council as the Highway Authority and ongoing communication has taken place throughout the preparation of the application as the proposals have evolved.

5.4 Specific impacts of most importance to the Highway Authority were identified early on and included the location and layout of a new access to the Gas Processing Facility off the A170 to the east of Thornton-le-Dale; impact of construction traffic on the A170 in the construction and operational phases of development, impact specifically during the holiday season which affects the A170 and the impact of construction traffic on the route to the Wellsite located at Givendale Head Farm.

5.5 Adopted planning policy has been reviewed and the proposal for a gas pipeline is considered to be entirely in accordance with policy with specific regard to the transportation and highways access requirements.

5.6 In terms of baseline conditions the A170 is a Primary Route in the County and shown to be below average in relation to link flow capacity and road traffic accidents when compared with national design guidance.

5.7 It is recognised in the assessment that highways and transportation impacts will be predominantly related to traffic movements in two distinct periods. The construction phase will present the most significant impact in terms of the movement of personnel and construction materials, whilst the operational phase following construction will have a negligible impact.

5.8 The impact of temporary construction traffic has been assessed in relation to the traffic flows in the A170 and shown to be minimal when compared with normal guidance. The percentage impacts are less than 1% of the AADT for the A170 and therefore within the normal fluctuations experienced on a daily basis. In terms of EIA traffic impact consideration the scale of construction impacts are shown to be less than 30% which is the threshold below which impacts are considered “slight”.

5.9 As the worst case for impact is in the construction phase the assessment has considered the peak period for construction traffic movements in accordance with the draft programme for

construction. This will only last for around 1 month within the 2 year period of construction. It is therefore a robust assessment of the peak traffic impact within the construction period and is not considered to present a significant concern in either access or road safety terms.

5.10 The assessment has considered the road safety implications of a new access in terms of position and layout on the A170 with due regard to the requirements for visibility set out in DMRB guidance. The access position and layout principles have been discussed with NYCC and are considered to be agreed in principle.

5.11 The ability to move vehicles within the length of the construction site, and most importantly where it crosses the A170 has been considered in more detail and a scheme for traffic management in the construction period has been prepared and presented to NYCC for consideration. At the time of submission comments were awaited and this will be discussed further in the post submission consultation period. The scheme for traffic management comprises temporary traffic signal control at the construction vehicle crossing which will give priority to the dominant east to west traffic flows on the A170. The instances of crossing traffic will be low and the impact is therefore safely managed with such a traffic management scheme.

5.12 The operational phase of the development post construction will be related to the movement of around 5 staff, deliveries of materials required for gas processing, and export of residues from the process. This impact is insignificant when compared with the construction phase and existing traffic conditions on the A170.

5.13 Overall, the mitigation strategy for the construction phase will provide for the safe access of people and materials to and from the site and there is no requirement for permanent mitigation related to the operational development.

5.14 In conclusion, the Transport Assessment has shown the development to be in accordance with policy requirements and that the effects of the development can be suitably accommodated on the highway network.

Figures

Appendices

Appendix A