INEOS Shale

6. Planning Statement

Land adjacent to Common Road, Harthill, Rotherham

Construction of a well site and creation of a new access track, mobilisation of drilling, ancillary equipment and contractor welfare facilities to drill and pressure transient test a vertical hydrocarbon exploratory core well and mobilisation of workover rig, listening well operations, and retention of the site and wellhead assembly gear for a temporary period of five years on land adjacent to Common Road, near Harthill.

May 2017

INEOS Shale

Planning Statement

Application to Drill a Vertical Core Well

Land adjacent to Common Road, near Harthill

PEDL 304

May 2017

Contents

1. Introduction

This Planning Statement has been prepared by Turley on behalf of INEOS Upstream Limited ('INEOS' or 'Applicant') and provides background information for a planning application seeking temporary planning permission for:

Construction of a well site and creation of a new access track, mobilisation of drilling, ancillary equipment and contractor welfare facilities to drill and pressure transient test a vertical hydrocarbon exploratory core well and mobilisation of workover rig, listening well operations, and retention of the site and wellhead assembly gear for a temporary period of 5 years on land adjacent to Common Road, near Harthill.

It describes the site that has been selected for this application and summarises the operations that are involved in this exploratory phase of shale gas development. It also summarises the main environmental effects associated with each phase.

The Statement then assesses the Applicant's site specific proposals for policy compliance with the Development Plan and outlines the material planning considerations which are considered relevant to the determination of its application. It then concludes on why planning permission should be granted.

INEOS submitted a Screening Report to Rotherham Metropolitan Borough Council on 3 March 2017, to determine whether or not the Minerals Planning Authority (MPA) considered the proposed development to be Environmental Impact Assessment (EIA) development. The Council issued a Screening Opinion on 18 May 2017 concluding that it did not consider the proposed development to be EIA development. Copies of both the Screening Report and the Screening Opinion can be found at Appendices 1 and 2 respectively.

The application has been subject to consultation with Council officers, the Parish Council, and the wider community including a public exhibition. The Statement of Community Involvement that accompanies this application sets out the feedback received during those discussions, and sets out how the Applicant has responded to any concerns raised.

1.1 INEOS Company Structure

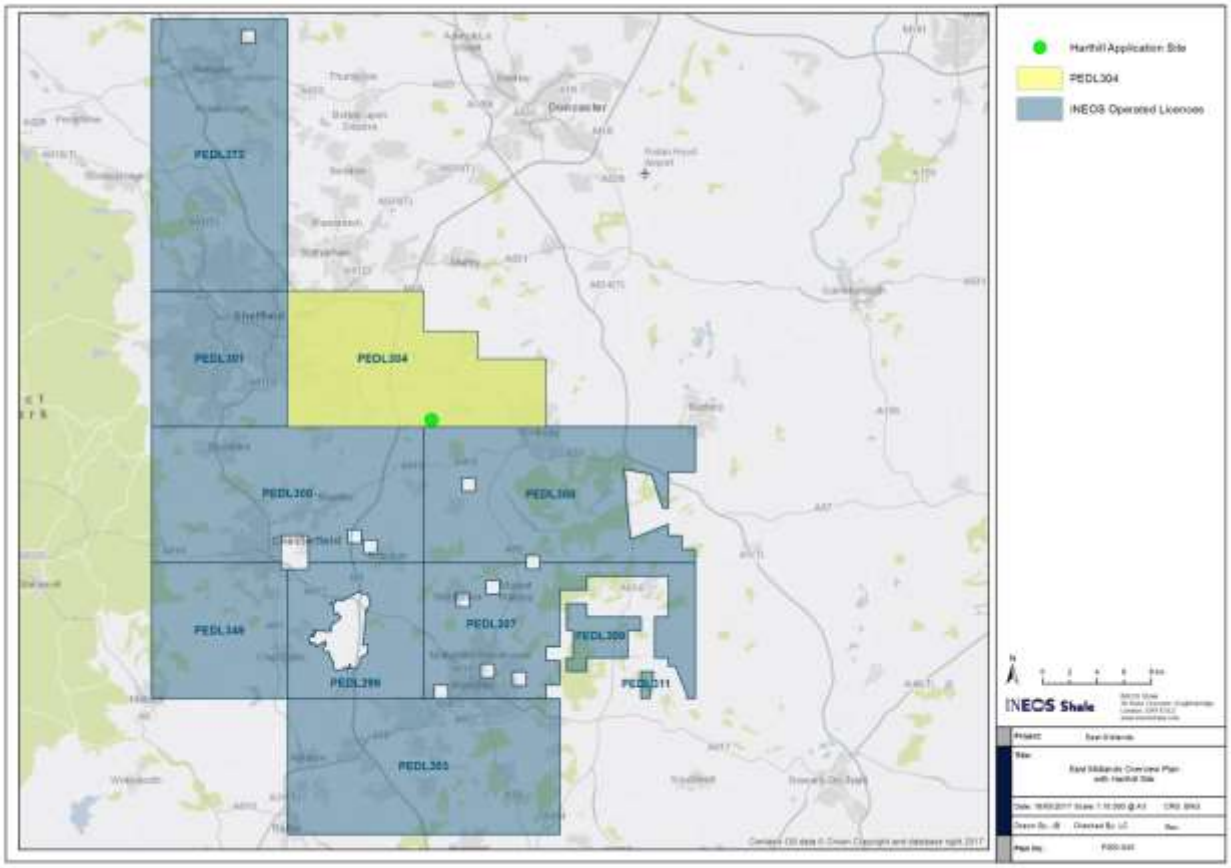
The INEOS Group is one of the largest chemicals companies in the world and employs over 4,000 people in the UK. It is a leading manufacturer in the petrochemical sector and has an unrivalled safety record, having successfully and safely operated numerous hazardous installations across the UK for decades.

INEOS depends on secure and competitively priced supplies of natural gas as a feedstock for its chemical works and they also use it as fuel in their manufacturing processes. The chemicals that INEOS produces are the building blocks used to create a range of plastic and other chemical components used widely across the manufacturing sector. INEOS products allow the manufacture of a variety of goods and services that our society relies on, ranging from clothing, medicines and the components of everyday consumer goods.

INEOS has set up its own shale gas business, INEOS Upstream Ltd, to ensure that it can directly source its raw material and energy source from the UK. It is now the largest holder of Petroleum Exploration and Development Licences (PEDLs) in the UK. INEOS hold the PEDL within which this site is located (PEDL 304) as well as other licences in the Rotherham MBC area. The INEOS-operated PEDLs in this area and the location of the proposed well is shown on Figure 1.1 below. It should be noted that due to INEOS' grouping of its licence areas, the Rotherham MBC area is regarded as being in the East Midlands group of licenses. References

to East Midlands within this Statement and elsewhere in the application are therefore made in that context.

Figure 1.1: INEOS Licence Areas in East Midlands



INEOS was awarded PEDL 304 by the Department for Business, Energy & Industrial Strategy (BEIS) (formally the Department of Energy and Climate Change - DECC) following the 14th Licencing Round. As part of the award INEOS had to commit to evaluating the potential hydrocarbon minerals production from the PEDL area.

To help INEOS fulfil its Licence commitment it has assembled a team of shale gas exploration experts, including professionals from the US with first-hand expertise of employing best practice measures and other technical issues surrounding the safe extraction of commercially viable reserves of gas from the target intervals.

The practical lessons learned by INEOS' US shale gas team during the development of the US shale industry have been applied to the application proposals to ensure that the best standards are proposed and that the operation is undertaken in the safest manner possible.

1.2 Regulator Responsibility

This application is for planning permission. It is an application primarily concerned with whether the proposed exploratory core well is an acceptable use of the land. There will be a number of other regulators and bodies involved in approving the drilling of the proposed well:

Oil and Gas Authority (OGA): Gives consent to drill once other approvals are in place.

Environment Agency: Has responsibility for protecting groundwater resources, and managing mining wastes, air emissions, water discharges

Health and Safety Executive: Will ensure that the design and construction of the well is safe.

Coal Authority: Regulates how the well will interact with coal seams and (if appropriate) workings in coal seams.

There are a number of technical matters that the MPA will need to consider as part of the application and assure itself that they will be adequately dealt with. However, in determining the application the planning authority can rely on the operation of the other regulatory bodies' systems of control and consents referred to above. Detailed assessment of those matters that will be addressed by those regulatory bodies through their control and consenting systems is not a matter for the MPA.

1.3 Application Context

INEOS' licence for PEDL 304 imposes a number of conditions on the operator (INEOS) to explore this licence area for petroleum. These require INEOS to secure 2D and 3D Seismic data, drill one vertical exploration well, drill a horizontal well and conduct hydraulic fracturing operations. The purpose of these conditions is to ensure INEOS gathers data so that the hydrocarbon[1] resource in the area is better understood.

Seismic surveys involve sending soundwaves into the earth and recording the soundwaves reflected back from the rocks below. The data gathered provides information on the rock structure and fault systems that lie within the target shale layer, as well as the intervening rock structures and fault systems that lie between that target shale layer and the surface.

In some areas of the UK historic seismic survey data is already available. To meet licence requirements in such areas INEOS has interpreted the available existing seismic data to identify areas which have the potential to offer good access to the shale which underlies this area of the country and to potentially locate a vertical core well.

This application seeks permission for a vertical core well. This application does not include any horizontal drilling and it does not include any "hydraulic fracturing" (also known as "Fracking").

Figure 1.2: Example core sample

The purpose of the vertical core well is to take a core sample of the target rock strata beneath the site for laboratory examination, an example image of which is provided in Figure 1.2. A range of other tests, logs and measurements will be undertaken in the well to establish the basic

[1] All states of petroleum, including oil and gas

geological properties of the shale layer, as well as the other rock strata that sit above and below the shale. This process will establish the properties of the local shale formation and surrounding rocks. The data from this well along with existing geological data will allow a better understanding of the shale gas potential in the East Midlands.

INEOS PEDLs have been granted in accordance with the legislation[2] which requires the Company to "maximise the production" of petroleum from the licensed area. This planning application in its own right will not allow that to occur and further planning applications will be required should the results of the core well analysis provide positive data. It is not currently known whether production will occur on this site in the future, or on other sites which have geology better suited to hydrocarbon extraction.

The geological data gathered from this core well will help to target the best areas for producing shale gas. It is feasible that this site may be suitable for future use as an "appraisal well" or a "production well". However, that is not currently proposed and is not the subject of this planning application. A further planning application would be required if any activity beyond the vertical core well was proposed.

[2] The Petroleum Act 1998 which was amended by the Infrastructure Act 2015 to add Section 9C

2. Why is INEOS exploring for Shale Gas?

INEOS considers that it is necessary for the UK to make the most of its domestic shale gas resources. There are a number of reasons for this.

INEOS recognises that tackling climate change is of fundamental importance. This means reducing our reliance on coal and transitioning to a mix of energy sources which have lower emissions. There is a time period where the UK will need to rely on gas during this transition process.

Estimates of how long this transition will take vary and some parties argue that gas will not be needed to assist with this transition at all. But the alternative is unclear and it is likely that it will be several decades before the UK is able to decarbonise sufficiently to reduce its reliance on fossil fuels for a reasonable proportion of its energy mix.

Gas is an important fuel for both domestic heating and manufacturing[3], and is likely to remain so for decades to come as it will be difficult and costly to replace gas for these purposes with an alternative fuel source.

In addition, INEOS use gas as a feedstock for chemical manufacturing. Gas is an essential component in manufacturing products as diverse as plastics, components for wind turbines, building insulation, clothing and pharmaceuticals. These are all services and products that our society is likely to need beyond the transition to a lower carbon energy system. Gas is therefore likely to be needed in the longer term as well.

It is possible that the UK could import gas to help during this transition period. However, this simply exports the responsibility of extraction to other countries, which in turn presents potential issues including risks to the UK's security of supply and lesser environmental controls over extraction processes. To import gas as liquid natural gas (LNG) it needs to be compressed to a liquid form and transported. These processes both carry additional environmental costs compared to a domestic supply.

A domestic gas supply can also deliver tax revenue, jobs and investment in the UK. Whilst the extent of these economic benefits still needs to be understood, it is clear that there is great potential in this industry, particularly as the revenue from North Sea oil and gas declines, and skilled oil and gas workers in the UK become available for employment.

Whilst there is a strong argument for making use of our domestic supply, it is unlikely that the UK can eliminate the need for importing gas. We currently import 54% of our gas supply and this is forecast to increase to around 90% by the 2030's[4].

UK shale gas can make an important contribution to reducing these imports.

The production of shale gas would have particular benefits for the UK's chemicals industry, which uses gas as a raw material to manufacture a number of compounds and plastics used throughout our society, including in ways which significantly reduce our carbon footprint[5]. The industry also employs over 100,000 skilled people, exports goods worth around £25bn, adds almost £9bn to the UK's GDP each year and underpins the UK's manufacturing sector[6].

[3] See for example the Natural Gas Coalition collated statistics on gas usage at: http://www.ukoog.org.uk/the-natural-gas-coalition

[4] National Grid Gas Ten Year Statement, 2014

[5] Such as creating building insulation, components for solar and wind power generation technologies and electric vehicles.

[6] Chemical Industries Association, UK Chemical and Pharmaceutical Industry Facts and Figures, 2015

The shale gas industry, including INEOS, has undertaken to provide a proportion of their income to local communities should gas be extracted in their community area. This has potential to be used for a number of local projects over time and can offer valuable funding which would otherwise not be invested in the local community[7].

The extraction of shale gas has been considered by a number of independent bodies[8] which have consistently found that if the shale gas industry is appropriately regulated, it can operate both safely and without significant effects on the environment.

This application is an important step on the road to exploring whether or not the shale industry has a future in the UK.

[7] INEOS have offered to share 6% of revenues. Four percent of this would go to homeowners and landowners in the immediate vicinity of a well, and a further 2% to the wider community.

[8] Royal Society, Royal Academy of Engineering, Government Task Force on Shale Gas, Public Health England as well as business organisations and "think tanks", including the Institute of Directors and Centre for Policy Studies.

3. Site Selection

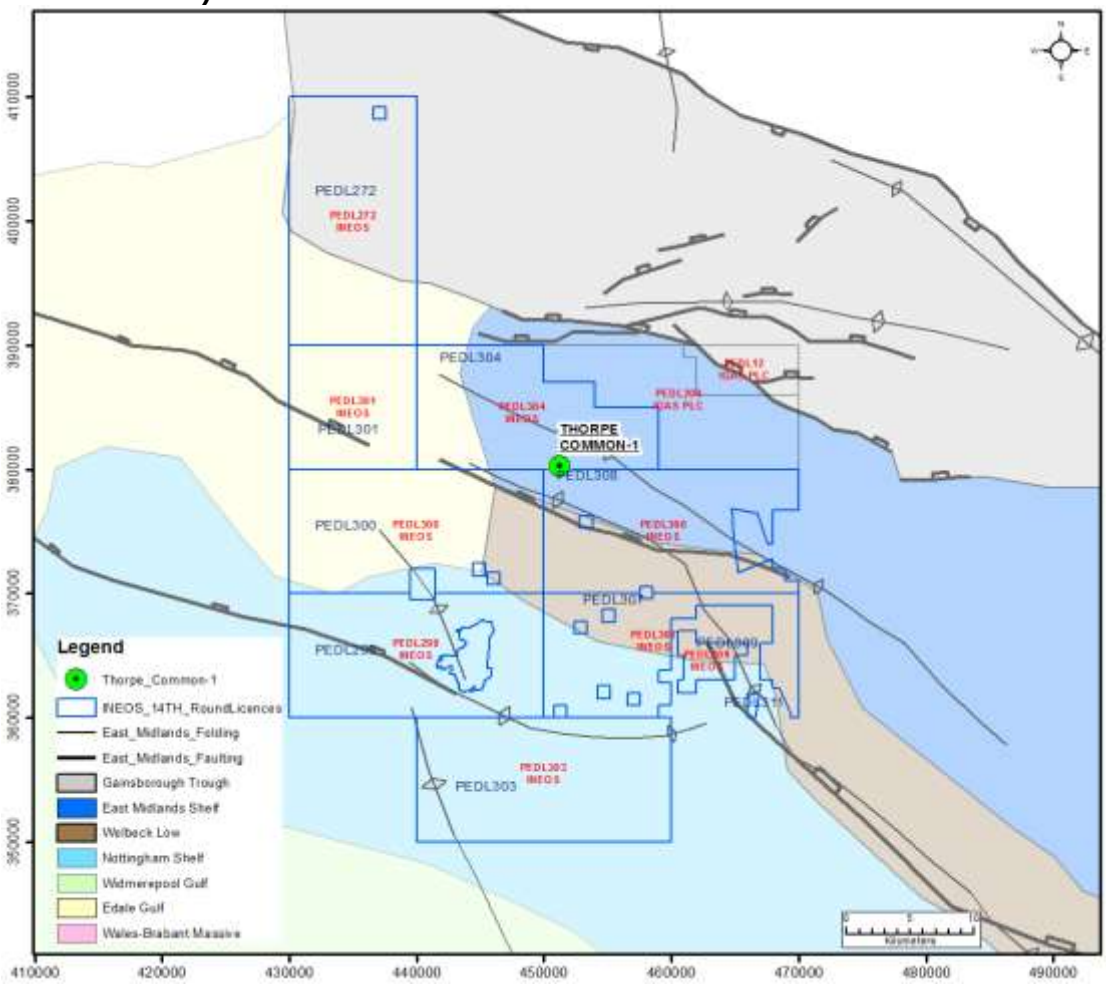
INEOS have searched for sites for initial vertical exploratory core wells. The process of site selection involves several distinct stages, which are described below.

3.1 Analysis of existing geophysical data within PEDL area

Identifying a suitable exploratory site depends upon a number of factors, including environmental constraints, appropriate mitigation measures and land availability. However, the fundamental and most essential requisite for a new well site is the subsurface geology. As with any other mineral resource, hydrocarbons can only be extracted where they are located. In order for a vertical core well to be worthwhile, the well pad needs to be immediately above the geological formation where existing data has identified potentially hydrocarbon-bearing strata.

The East Midlands is a geological area with a proven hydrocarbon system and a history of oil and gas production dating back to the early 20th century. Several oil and gas discoveries have been made in the East Midlands since the first in 1918, many of which are still in production. The source of hydrocarbons found in the East Midlands lies in the organic-rich shales of Lower Carboniferous age and these, together with vertically adjacent strata, are the targets of the proposed exploration. Figure 3.1 shows the site in relation to the geologic setting of the Lower and early Upper Carboniferous strata.

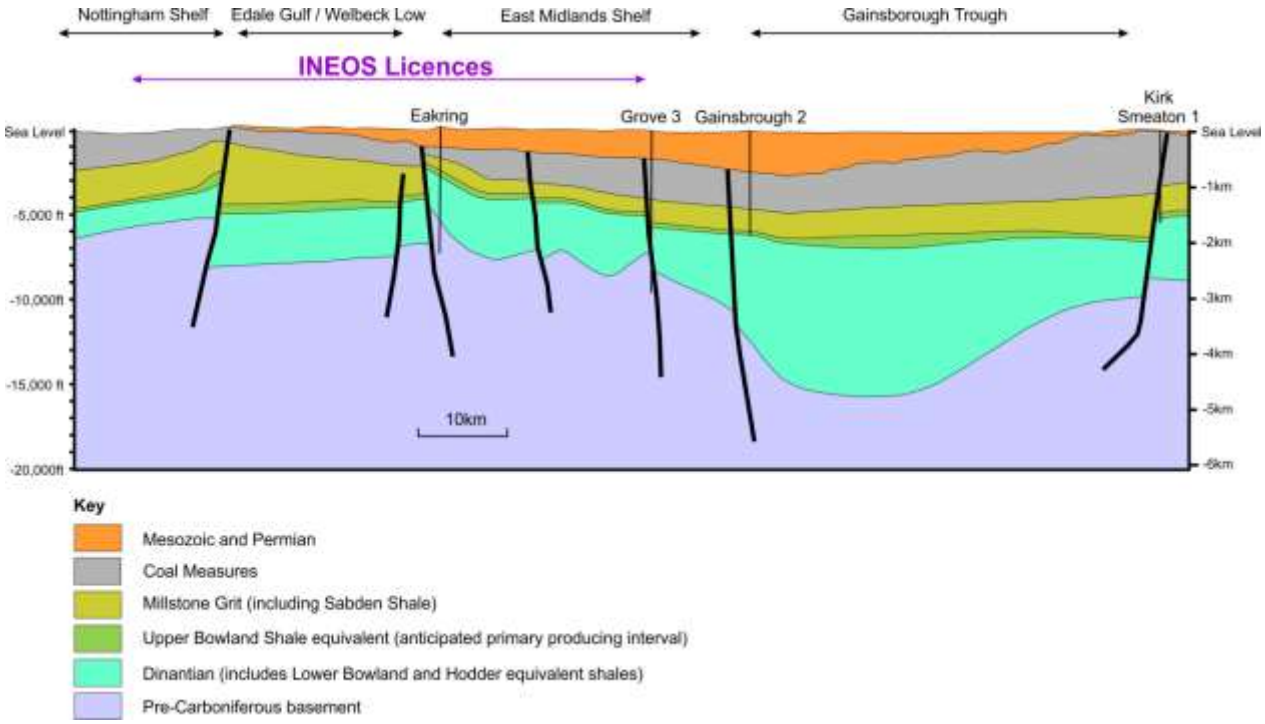
Figure 3.1: Map of East Midlands geological setting (Lower and early Upper Carboniferous)



The primary objective of the proposed vertical core well is to evaluate the potential of extracting natural gas from Carboniferous strata. The reservoirs of interest are 'unconventional', that is, they are characterised by extremely low porosity (the volume within the rock that contains gas) and permeability (the ability to transmit fluids) compared with more traditional oil and gas reservoirs.

As part of the implementation of its PEDL work programmes, INEOS has interpreted the existing geophysical data provided by 2D surveys (Figure 3.2 shows an example of 2D data interpretation), as well as existing borehole logs, where these are available, to establish whether the shale lying beneath the site is likely to have the right characteristics to produce shale gas.

Figure 3.2: Example of 2D data interpretation



3.2 Desk top analysis of environmental constraints

Once this broad assessment of the geology within the PEDL area was complete, INEOS' surface land team carried out a screening exercise to identify where within that surface area exploration drilling could be carried out safely, and with the least possible impact on the surrounding area and community.

A desk top analysis was undertaken, using the latest geospatial computer software to identify and screen out the following areas at the surface, which are considered to be more likely to be sensitive to drilling operations:

<u>Landscape</u>

- National Parks
- Areas of Outstanding Natural Beauty, and
- Country Parks

Ecology

- Ramsar Sites
- Special Areas of Conservation (Habitats Directive) and candidate SACs
- Special Protection Areas (Birds Directive) and potential SPAs
- Sites of Special Scientific Interest
- Ancient Woodlands
- Biosphere Reserves
- Core Grassland/Heathland/Mire/Fen/Bog
- National Nature Reserves, and
- Local Nature Reserves

Land use and Access

- Agricultural Land Classification
- Coastal Paths
- Countryside Rights of Way Access Areas
- Environmentally Sensitive Areas (agricultural), and
- National Trails

Cultural Heritage

- World Heritage sites
- Listed Buildings (by grade)
- Scheduled monuments
- Heritage Coast, and
- Conservation Areas

Water

- Flood plain
- Main rivers, and
- Groundwater aquifers providing potable water supplies (including Source Protection Zones)

General

- Areas with sensitive properties (schools, hospitals and care homes for the elderly), and
- Air Quality Management Areas

As part of this process the surface land team also sought to ensure that wherever possible they could achieve a minimum off set distance of 400 metres between the location of a proposed well and nearest residential properties. This broad guiding principle was then reviewed once site specific factors could be taken into account to ensure that the chose site was not likely to have a significant effect on any nearby receptors.

Experience of onshore drilling throughout the UK has demonstrated that when operating the drilling rig that is most likely to be used by the Applicant, a separation distance of 400m helps ensure that the World Health Organisation limit on night-time noise is achieved. If a 400 metre off-set distance cannot be met, additional mitigation measures may need to be employed. However, site specific consideration is also required in order to establish whether suitable amenity standards can be achieved on that particular site.

This screening process has identified areas where suitable sites may be located.

3.3 Site specific requirements

Once broad areas of search for sites have been defined, the constraints mapping was combined with seismic and other geological data to further refine the search areas. INEOS then identified an area where a potential exploratory well site could be located.

3.4 Site availability

Having identified potentially suitable sites, negotiations were entered into between INEOS' land agents, and the landowners to ensure that the private land rights needed to carry out drilling operations could be secured.

This site was selected because the operational requirements were likely to be met, suggesting that the site is suitable for further detailed analysis and potentially an application for planning permission. Due to ongoing negotiations with other landowners and the commercially sensitive nature of the proposal, INEOS is not able to identify the extent of the wider area considered for detailed site selection. INEOS is confident that the planning application demonstrates that the chosen site:

- meets the operational requirements to construct and secure a well site, and drill a vertical core well;
- avoids environmental constraints wherever possible; and
- mitigates any adverse impacts upon the environment, including the local highway network, landscape character, flood risk and residential amenity.

The remainder of this document sets out what is proposed, the likely effects of the development, and considers these in the light of relevant policies and other factors which carry weight in determining this planning application.

4. Site Description

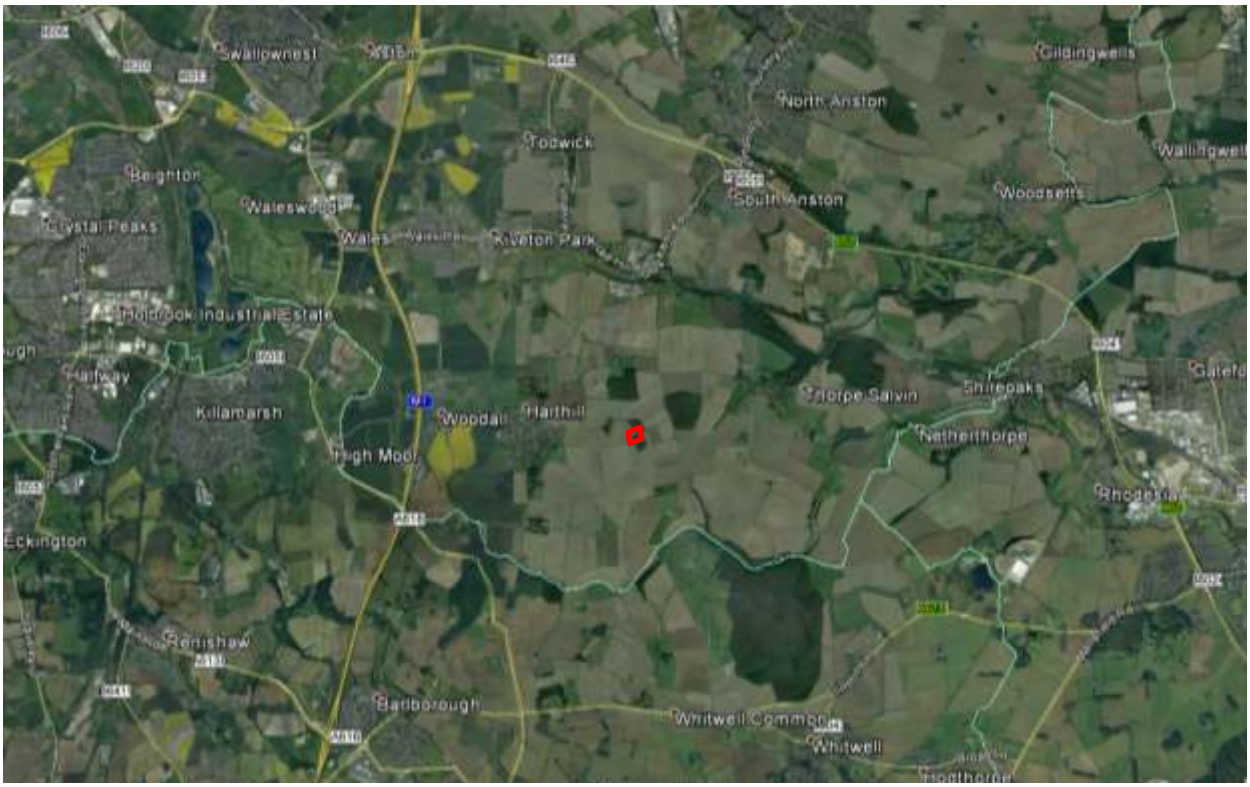
4.1 Site Location

The application site lies within Rotherham Metropolitan Borough Council and at its closest point lies approximately 0.7 km to the east of the village of Harthill and approximately 1.4 km to the west of Thorpe Salvin, as shown in Figure 4.1.

Barlbrough lies approximately 4 km to the southwest and Kiveton Park approximately 2 km to the northwest. The nearest residential properties are on Serlby Lane in Harthill, approximately 710 m to the west and Manor Farm, some 760 m to the north west.

The site is approximately 6 km to the west of Worksop and Rotherham City Centre is located around 15 km to the north west of the site.

Figure 4.1: Aerial Image of site and surrounding areas (site outlined in red)



The site is broadly rectangular in shape with an access track and a construction materials storage area to its south. The application site is approximately 1.40 ha in area. Access is proposed to be taken from Common Road which is approximately 30 m to the south of the site. This secondary road provides access to the main road network to the south at the A619, Whitwell Common.

The site itself comprises open agricultural land and is bounded by woodland to its east and Common Road to the south. The northern and western boundaries of the well pad site are currently open and not defined by recognisable features on the ground. The southern boundary is around 30 m north of the existing hedge line adjacent to Common Road.

The topography of the site is relatively flat, with a slight slope to the north. Harthill sits slightly higher than the site. Inter-visibility from the site at ground level to Harthill and Kiveton Park is minimal. Thorpe Salvin has no intervisibility due to distance and intervening vegetation.

The broader landscape is characterised by arable farmland which is formed of fields demarked by mature hedgerows, with occasional hedgerow trees. The immediate locality has several wooded blocks, as seen in Figure 4.2.

Figure 4.2: Site location and immediate surroundings

An existing public footpath (Harthill Footpath No. 23) runs adjacent to the site's eastern boundary and will be off-set from the well pad area by around 30 m at its closest point. This footpath joins a further public footpath (Harthill Footpath No. 8) which runs along the field boundary to the north of the site on a generally east-west alignment.

Vehicle access to the site will be taken from the south, directly off Common Road.

4.2 Environmental Designations

The site and surrounding area lie within the Rotherham Green Belt. In addition, the following designations prevail in the wider area surrounding the site:

- Cultural Heritage: There are several listed buildings within the settlements of Harthill and Thorpe Salvin. These are all distant with no intervisibility. Both Thorpe Salvin and Harthill have Conservation Areas. There is no intervisibiltiy with ether conservation area due to intervening vegetation.

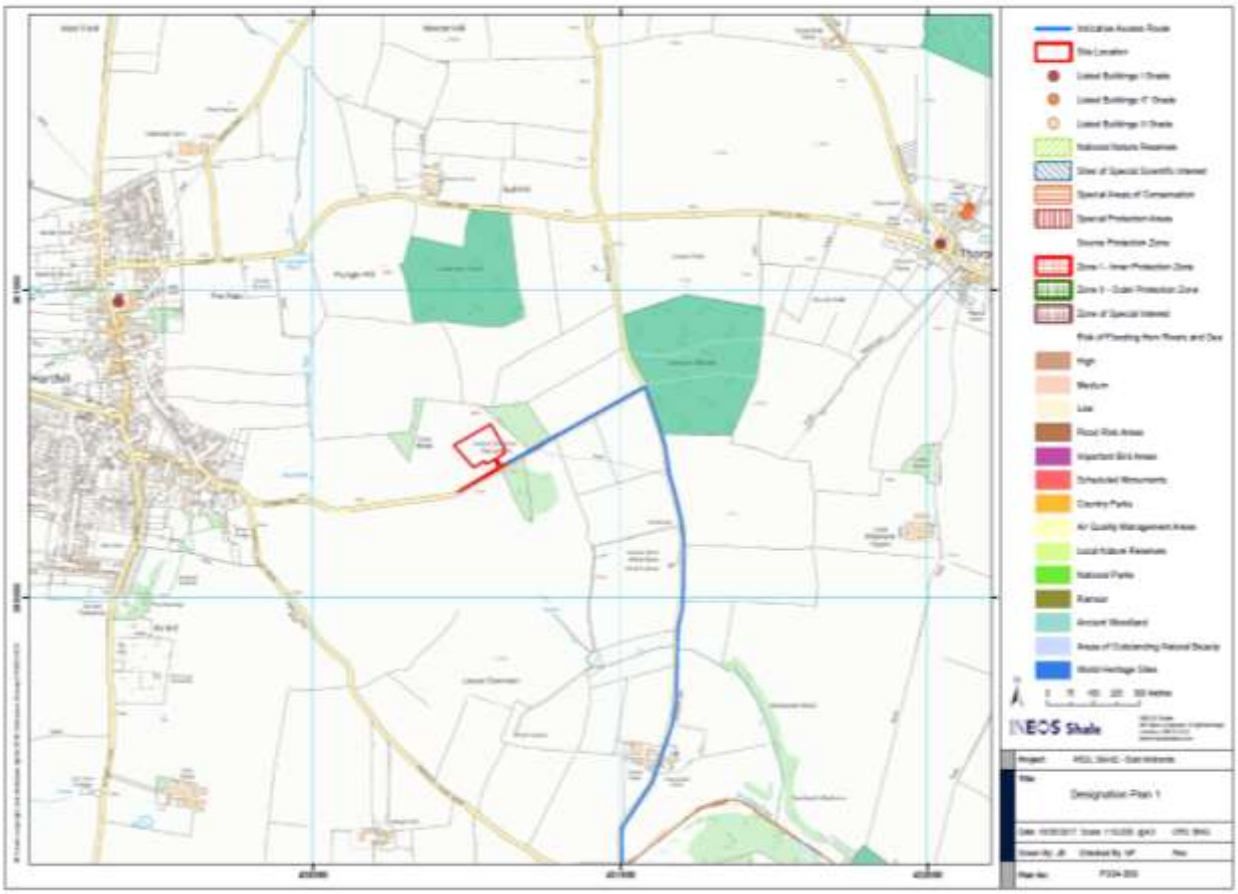
- Ecology: The site lies within the Loscar Common Local Wildlife Site and 1.8km south of the Chesterfield Canal Local Wildlife Site. There are plantation woodlands immediately to the east of the site and across the road to the south. Ancient, semi-natural woodland is located approximately 330 m to the north of the site and has connectivity to the site via hedgerows. A defunct species-poor hedgerow bounded the eastern boundary while a well-managed gappy species-rich boundary was located at the southern boundary which will be crossed by the access road.

- Flood Risk: In accordance with the Environment Agency's Flood Risk Map for Planning, the site lies within Flood Zone 1 and is therefore at lowest risk of flooding from rivers and sea. The nearest surface watercourse, Bondhay Dyke, is located some 530 m to the south of the site.

- The site is not within a Groundwater Source Protection Zone (SPZ), although the SPZ for the Cadeby Formation principal aquifer is approximately 500m south of the site. The site is not within or near any locally important geological sites.

The designations are shown in Figure 4.3 below, which is reproduced at Appendix 5.

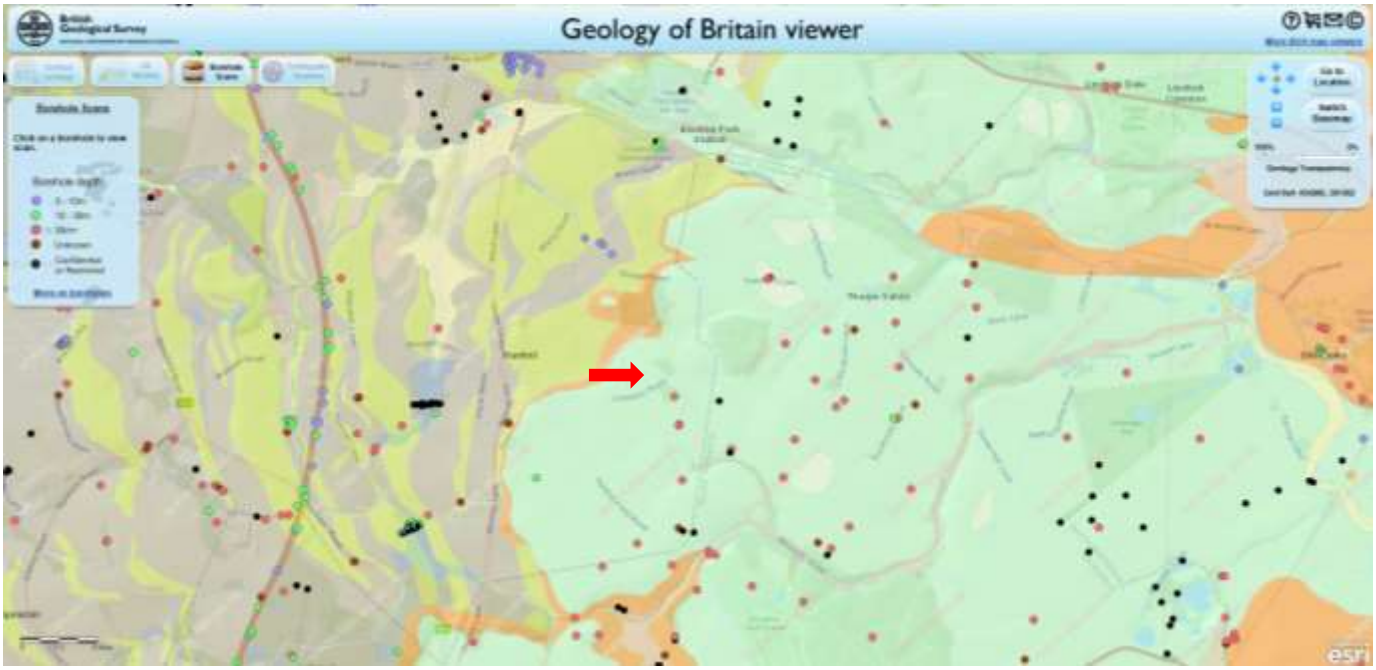
Figure 4.3: Designations in vicinity of the application site



There are a number of existing boreholes in the vicinity of the site, as shown in Figure 4.4 below[9], with the approximate location of the site shown by a red arrow:

[9] See data maps at: http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Figure 4.4: Extract from BGS data on boreholes



5. The Application

The application proposals are described in detail in "The Proposal," a document provided as part of this application. It sets out in detail the nature of the development, the different phases of activity expected on site and over what period each phase is expected to be carried out.

The Proposal also provides details on the various working practices and environmental controls which are inherent in the development. These working practices draw on industry experiences and best practice. They are considered to be good practice and will ensure that many of the issues associated with early oil and gas developments, particularly in the United States, do not occur in the UK. This "embedded mitigation" provides controls over well pad set up, drilling practices, monitoring and decommissioning.

This section of the Statement summarises the key points from that more detailed document.

5.1 Overview of the Hydrocarbon Extraction Process

The hydrocarbon extraction process involves three distinct phases:

1. Exploration: Through the drilling of a vertical well. This is the stage proposed by this planning application;

2. Appraisal: Through gas flow testing following horizontal drilling and hydraulic fracturing either from existing core well sites or new sites (3D seismic data will be acquired to enable placement of wells involving hydraulic fracturing).

3. Production: Through drilling of horizontal wells from multi-well pads followed by hydraulic fracturing, production, decommissioning and restoration.

Planning permission is required for each phase, with the cumulative environmental effects of combined applications at different stages being considered each time an application is made.

5.2 Overview of this Planning Application

The proposal is to drill a vertical core well to a depth of approximately 2800 m, and to recover cores of the target geological formations. Subsurface data would be collected during the drilling process and the core samples would be removed from site for testing of the potential for the target horizons to produce hydrocarbons. Testing of the borehole will then be undertaken, including a "Pressure Transient Test" which checks whether the rocks have enough pressure naturally to push gas into the borehole. Once drilled and cored, the well would be suspended in line with Oil & Gas UK Guidelines for a period of time, for potential later use as a "listening well" during development of other sites in the area.

The duration of the planning permission requested is five years, which accords with the length of INEOS' initial PEDL term, as awarded by the Oil and Gas Authority.

After five years the site would be restored to its existing use and returned to the landowner, unless a further planning application is made for additional work.

There would be several stages over the proposed five year life of the site operation, each with different activities and potential impacts:

Stage 1: Site Development and Establishment, including installing a conductor– approximately three months

Stage 2: Drilling, Coring, Pressure Transient Testing (PTT) and Suspension – approximately five months

Stage 3: Maintenance of the Suspended Well Site –retained until restoration, up to the five-year extent of the application

Stage 3a: Possible Workover of the Suspended Well – up to one month as required. This stage is included as a contingency and would only be required if the well required to be re-entered for maintenance or similar purposes. However, planning permission is requested for the potential to undertake these operations to allow a rapid deployment of the drill rig if required

Stage 4: Use of the Well as a Listening Well – up to five weeks as required

Stage 5: Abandonment (Decommissioning) and Restoration – approximately two months

The Proposal describes activities involved at each stage, operational information including hours of working and staff numbers, and outlines measures in place to protect the environment at each stage.

The timescale for each stage is approximate, and may take a shorter or slightly longer time than indicated, though a reasonable longest case is described in the application. Delays beyond INEOS' control could extend the timescales indicated.

Stages may not be immediately sequential, but the overall five-year timescale is proposed as a maximum.

Plans of the site at each stage are provided within the Proposal and detailed plans are provided as part of the application package. These show how the site would change in appearance over the lifetime of the planning permission.

Certain features would be consistent over the lifetime of the site; for example the bunds, fencing, infrastructure and access. They have been designed to minimise the environmental impact of the proposal and ensure the site could be safely and efficiently operated. The Proposal describes the ways in which the site has been designed to provide embedded environmental mitigation.

The Proposal indicates equipment on site and vehicle numbers at each stage, and how this would change over the life of the site. Example equipment is listed and pictured in the Proposal. This equipment is indicative and flexibility around exact dimensions and appearance is required. However, the height of the tallest proposed features on site at each stage would not be exceeded.

For further details of the proposed development, please refer to the Proposal.

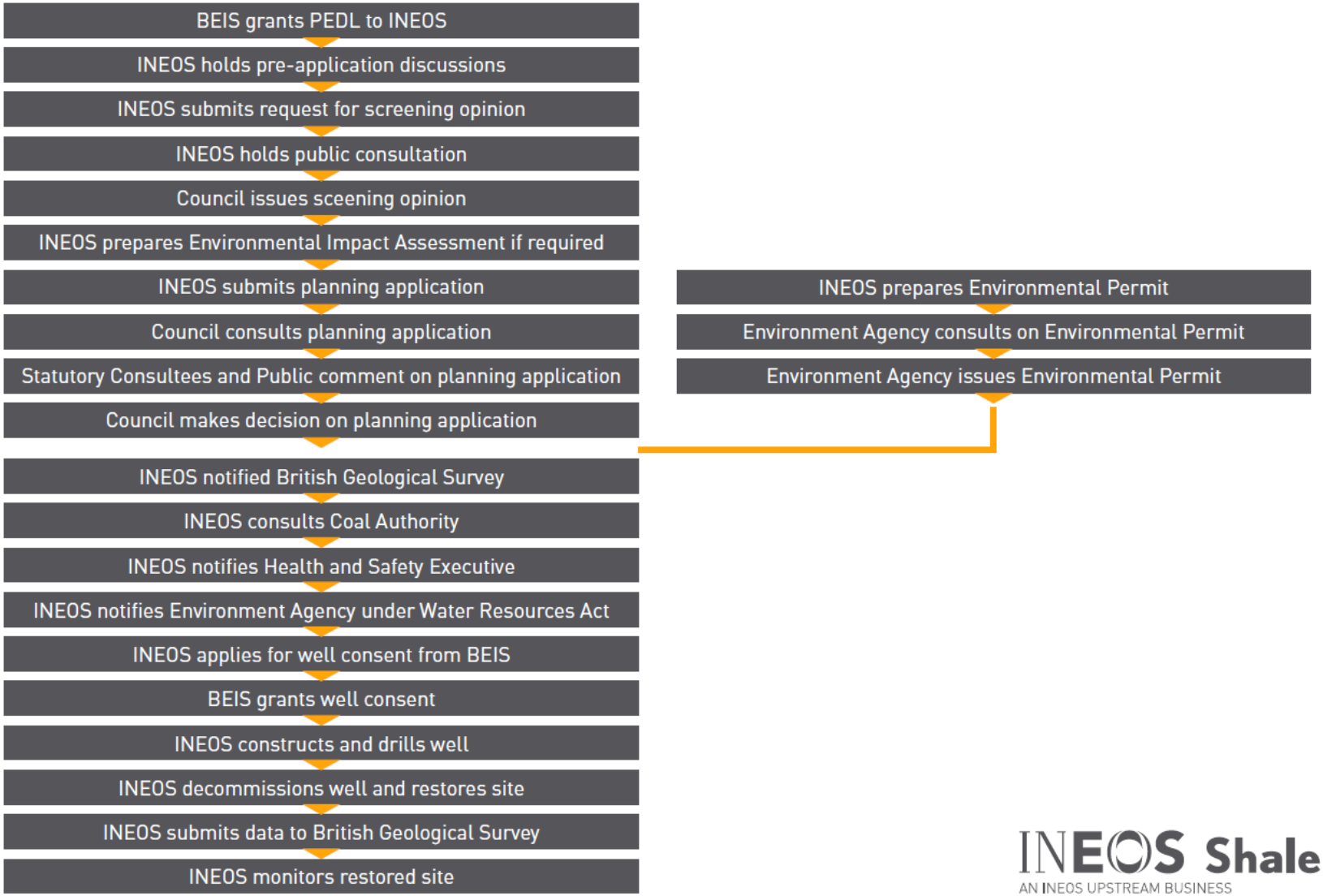
5.3 Regulatory Framework

This application only seeks permission for an exploratory vertical core well and associated geological testing and logging.

The Proposal is a heavily regulated activity. Planning permission is only one of 11 distinct and separate approvals, consents and notifications that need to be made in order for the core well to be drilled.

The Planning Practice Guidance on "Planning for Hydrocarbon Extraction" provides a summary diagram which shows the planning process in the context of the other approvals required. The content has been adapted to this site and is presented below[10]:

[10] Based on information taken from Minerals PPG Annex B: Outline of process for drilling an exploratory well Paragraph: 138 Reference ID: 27-138-20140306



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As can be seen, INEOS will also need to secure an Environmental Permit from the EA, notify the Health and Safety Executive (HSE), British Geological Survey (BGS), Coal Authority (CA), and secure a well consent from the OGA (OGA)[11].

This application is only one step in the regulatory approval process for drilling the exploratory core well. Each stage is subject to scrutiny by a third party regulator, which has protecting the environment, people and our national resources as their primary driving goals.

5.4 Future Application Proposals

This application only seeks approval for the drilling, testing, suspension, decommissioning and restoration of the proposed well, including possible use as a listening well. This application would not authorise any other future activities on this site.

INEOS understands that many people will wish to know whether or not this is likely to lead to a future application for high volume hydraulic fracturing, or "fracking". Until the potential commercial viability of the target resource is established through the laboratory analysis of the extracted core of shale rock, the prospect of development being taken forward to the appraisal stage is uncertain, both in respect of the content and timing of any future application.

There are a number of possible outcomes that could follow this application, but the intention for this site is for it to be restored. Any future proposals would need planning permission and a range of consents from other regulators.

If future appraisal or production proposals were to be brought forward, either on the application site or within the surrounding area, an application for planning permission would need to be made. As part of that overall process, the cumulative impact of the new proposal for the site and any other committed shale gas operations in the local area would need to be carefully considered. In assessing current and future cumulative impact, careful account will also be taken of any other major developments that are being brought forward in the area.

INEOS understands that this does not give certainty to those people who are concerned about future shale gas extraction in this area. INEOS intend to keep local communities informed of their future intentions and will continue actively engaging with the local community.

[11] The OGA acts on behalf of BEIS, which replaced DECC in the latest amendments to departmental structure in Government

6. Summary of the Environmental Report

This planning application is accompanied by an Environmental Report which sets out an appraisal of the key environmental impacts arising from the proposals.

A thematic summary of the key conclusions in relation to each environmental topic is set out below.

6.1 Noise

Impact

The Environmental Report has assessed the potential of noise impact of the proposals. The key conclusions are as follows:

- While noise from construction may be audible at times, is not expected to exceed the assessment criteria and is expected to result in negligible noise impacts. Also, any noise from traffic during the construction period will be very low and likely to be imperceptible

- Drilling and coring activities are expected to be below the PPG 42 dB LAeq (free-field) noise limit for night at the nearest receptor. Daytime noise levels during drilling will also be well below the PPG absolute noise limit of 55 dB LAeq and the limit for daytime and evening based on background plus 10 dB(A) at the nearest receptor.

- As the noise will be temporary and below the threshold levels, there is not anticipated to be an adverse effect on quality of life.

- There are no anticipated impacts that would arise due to ground borne vibration resulting directly from the drilling operations or during construction.

Proposed Mitigation

The proposed mitigation is embedded into the design of the proposed development.

6.2 Traffic and Transport

Impact

The Environmental Report has assessed the potential traffic and transport impacts of the proposals. The key conclusions are as follows:

- The traffic and transport assessment considered the access to the site and the impact of the proposal on traffic flows and highway safety.

- Following a route assessment of the surrounding road network against a range of criteria, a recommended route of approximately 9.5km from the M1 motorway to the site has been proposed. This route exits the M1 motorway at Junction 30 and follows the trunk road network (A619 Worksop Road) between the M1 and Norton. The remaining 4.5km of the route is undertaken on Bondhay Lane, Packman Lane and Common Road. There are very few (less than 5) residential dwellings along this route to the site.

- Access to the site will be provided from Common Road via a priority junction. The speed limit of Common Road is 60 mph although vehicles are unlikely to achieve this speed due

to the width and nature of the road. INEOS has undertaken speed surveys which suggests that most vehicles travel at around 32mph. Notwithstanding this, the site access junction has been designed in accordance with Design Manual for Roads and Bridges as well as giving consideration to the existing precedence on the highway network. The visibility requirement of 4.5m x 160 m is achievable in both directions along common road.

- A swept path assessment of constrained junctions and links identified on the recommended route. These showed that whilst traffic management measures will be required along the route, the range of vehicles travelling to the site will be able to gain access along the road network.

- In order to consider the effect of traffic generated by the proposal, baseline traffic data was collected from three points on the local highway network. The traffic analysis assessed the percentage change from baseline due to the peak vehicle movements generated by the project (70 total daily movements with 60 HGV movements, which occurs for a period during site development and establishment and the drilling, coring and pressure transient testing stage).

- The assessment concluded that the proposal will not have a material impact on the highway network that will be utilised as part of the route. The maximum impact of the development traffic on A619 Worksop Road is less than 1% increase over baseline which is clearly below the 10% threshold set out in the Guidelines for the Environmental Assessment of Road Traffic (Institute for Environmental Assessment) for when separate traffic environmental assessments should be undertaken. The impact of the proposal traffic on Bondhay Lane and Common Road exceeds the 10% threshold, however it is considered that due to the low level baseline data a route management plan providing formal passing places and other traffic management measures would be sufficient to mitigate any impact of the development.

- A Route Management Strategy (RMS) and Traffic Management Plan (TMP) will be developed and implemented, following consultation with the Local Highway Authority, to manage vehicle movements to site. A draft TMP is included in the Environmental Report, and a draft planning condition which requires submission of a detailed TMP is suggested at Appendix 4.

- Based on the assessment undertaken traffic and transport should not be considered opposing factors in granting planning permission.

Proposed Mitigation

The proposed mitigation is largely embedded into the design of the proposed development. However, a Draft Traffic Management Plan has been prepared which includes details of the route management, driver behaviour and parking strategies for the site. This has been included as a draft condition in Appendix 4.

6.3 Ecology

Impact

The Environmental Report has assessed the potential ecological impacts of the proposals. The key conclusions are as follows:

- An ecological assessment (extended Phase 1 habitat survey) of the site and surrounding area was carried out in January 2017 to identify potential ecological constraints and provide initial recommendations for avoidance of impacts and mitigation measures, as well as further ecological investigations where necessary.

- The site is situated within the Local Wildlife Site (Loscar Common), which is designated due to the habitats found in farmland and scattered woodlands. The site which will be developed for the proposal supports arable farmland and would therefore contribute to this designation. However, the area affected by the proposals accounts for approximately 0.5% of the total area of the LWS and this level of loss for the 5 year period is not considered to be significant.

- In addition, the effect of the proposal will be temporary and there is potential for enhancement during Stage 5 Decommissioning and Restoration. Enhancement recommendations, as encouraged through the NPPF, include native hedgerow planting along the hedgerows to infill gaps at the southern site boundary (native fruit and berry bearing species such as hazel *Corylus avellana*, hawthorn, blackthorn and guelder rose *Viburnum opulus* could be included); and the field boundaries could be planted with species rich tussocky grassland to provide habitat for a wide range of species including corn bunting.

- The surveys identified that the woodland to the east and south of the site could provide suitable habitat for badgers and bats (and common pipistrelle were identified as part of the desk study). The site design has been developed to maintain an offset of over 30 m from the drill pad with the lighting designed to maintain a dark zone between the site and the woodland and hedgerow habitats. The proposed design uses an existing access point to the field on the southern boundary; this access point will need to be widened via the removal and trimming of a section of the hedgerow.

- The habitats that will be temporarily impacted are of low ecological value and taking account of standard mitigation and pre-construction surveys no further detailed surveys are required.

- Consequently ecology and biodiversity should not be considered opposing factors in granting planning permission.

Proposed Mitigation

Other than the creation of the 30 m buffer zone, which is built into the scheme design, the ecological surveys confirm that mitigation is not required. The proposals will comply with the good practice recommendations set out in the Environment Report which include compliance with wildlife legislation and relevant planning policy.

6.4 Landscape and Visual

Impact

The Environmental Report has assessed the potential landscape and visual impacts from the proposals. The key conclusions are as follows:

- The sensitivity of the site to the proposal is considered to be medium, and the sensitivity of the wider Landscape Character Type is also considered to be medium.

- The impacts of the proposed development can be summarised as follows:

    - During site development and establishment (Stage 1), substantial effects are predicted on the landscape of the site and areas of agricultural land up to 1 km to the southwest of the site, falling to low or negligible beyond 1.5 km and across the wider character area. However, for the short period of this stage when the 32m high conductor / surface rig will be present on site, substantial effects will affect the site and areas to the southwest extending up to a maximum of 1 km. Minor or negligible effects are expected within the wider landscape beyond 1.5 km. These effects, however, will be experienced for a short time period.

    - During drilling and coring and pressure transient testing (Stage 2), the main activity with the potential to affect landscape character will be the erection and 24-hour operation of the drilling rig (up to 60 m high) with 15 m drill sub-structure and associated lighting. Substantial effects are predicted for the site, and for parts of the wider area located to the southwest of the site and extending up to a maximum of 1 km. In other directions, and beyond this distance, the effect on the wider landscape of the area will be moderate and lowering to minor beyond 2 km and minor or negligible beyond 3 km.

    - During maintenance of the site (Stage 3), the effects on the site will be minor, and effects on the wider landscape will be negligible.

    - If a workover rig of up to 32 m high is required during the possible workover of the suspended well (Stage 3a), or during the listening well stage (Stage 4), substantial effects will affect the site and areas to the southwest extending up to a maximum of 1 km. Minor or negligible effects are expected within the wider landscape beyond 1.5 km. These effects, however, will be experienced for short time period of up to three weeks.

    - During the listening well stage (Stage 4), if a workover rig or crane is not required, the effects on the site will be moderate, and effects on the wider landscape will be negligible.

    - Decommissioning and restoration (Stage 5) effects are anticipated to be substantial within the site and areas of agricultural land up to 1 km to the southwest of the site, falling to low or negligible beyond 1.5 km and across the wider LCA. This is primarily due to the presence of a smaller rig used for decommissioning purposes.

- Based on the viewpoint assessment undertaken, and with regard to the extent of localised screening, moderate or substantial effects on views may occur during all stages of the proposal. These effects, however, will be experienced only by higher-sensitivity receptors within approximately 1 km of the site. This includes residents of houses along

the south eastern edge of Harthill. Residents of nearby farmsteads including Carr Farm, Grange Farm, and Loscar Farm and the village of Thorpe Salvin will experience, at most, moderate effects during the drilling and coring and pressure transient test (Stage 2).

- Substantial visual effects may also be experienced by users of Common Road and Harthill Field Road to the immediate southeast of the site. During the drilling and coring and pressure transient test (Stage 2) operations the effect of the proposal on views will be more widespread. Although the drilling rig is likely to be partially screened by localised screening and woodland, up to substantial visual effects are predicted during daylight and night time hours.

- At greater distances it is considered likely that only the drilling and coring and pressure transient test stage of the proposal will be noticeable in views. Due to the level of screening in the landscape, the distribution of receptors, and the temporary nature of the stage, visual effects are not predicted to be greater than minor at distances over 2 km from the site.

- Following the decommissioning and restoration activities, no above ground features of the well will remain, and all impacts on visual amenity will cease. The permanent restoration of the site to its original agricultural use is considered to be a neutral effect on views. All the above effects are therefore considered to be temporary.

Proposed Mitigation

The proposed mitigation is largely embedded into the design of the proposed development. For instance, the site is located on an elevated plateau with intervening land form that helps to screen many views, and the scheme has been designed to avoid the loss of any notable landscape features.

During Stages 1 to 5 of the proposal, the creation and maintenance of bunds from stripped topsoil and subsoil will further reduce visibility of low-level ground works, equipment and other elements of the proposal.

During the Decommissioning and Restoration stage of the proposal, the site will be restored to its original agricultural use, and no permanent above-ground features will remain in the landscape once the proposal is complete.

6.5 Surface Water and Flooding

The Environmental Report has assessed the potential surface water and flooding impacts of the proposals. The key conclusions are as follows:

- The site is not within an area at risk from flooding and is designed to be self-contained with regards to surface water runoff. The nearest surface water course is Bondhay Dyke 530 m south of the site.

- Effects on the surface water quality of watercourses and other sensitive receptors within the surrounding area of the site have been assessed for Stages 1 to 5 of the Proposal activities. Given the proposed embedded mitigation measures, the environmental assessment concluded:

- A neutral effect on the water quality of nearby watercourses.

- A neutral effect on the biodiversity of the surrounding area, including designated areas, as these are sufficiently distant from the proposal, and are not expected to be affected by the negligible magnitude of impacts to surface watercourses from the proposal.

- A neutral effect on pressures on water resources in the surrounding area, due to the non-intensive nature of on-site activities.

- A neutral effect on recreational uses within the surrounding area due to these being concentrated in areas greater than 2.9 km distant from the proposal.

- Flooding, residual and climate change impacts have been assessed as negligible due to Environment Agency flood maps showing the proposal as having a 'Very Low' risk of flooding from fluvial and pluvial water sources and based on the topography of the site and surrounding area. The proposal is not anticipated to result in any material increase in flood risk elsewhere.

Proposed Mitigation

The proposed mitigation is largely embedded into the design of the proposed development. In particular the following mitigation measures have been designed to reduce on-site flood risk and flood risk elsewhere:

- Site drainage systems will be sized to withstand a 1 in 100 year flood event;

- The site is located to minimise risk of groundwater flooding;

- Field drainage systems around the site will be maintained;

- Any water falling onto site would feed into the site perimeter drain and be removed by a licensed waste contractor for treatment and disposal as appropriate.

During Stage 5 (decommissioning and restoration) mitigation measures will aim to prevent risk of site flooding or increasing flood risk elsewhere, through restoration and soil management to maintain effective field drainage to prevent ponding.

6.6 Hydrogeology

The Environmental Report has assessed the potential hydrogeological impacts of the proposals. The site is in an area with two secondary aquifers and there are three abstractions within 2 km of the site. The boundary of a Source Protection Zone (SPZ) is located approximately 500 m south of the site. There is expected to be:

- A neutral effect on the shallow groundwater quality of the surrounding area due to the non–intensive nature of the on-site activities.

- A neutral impact on the groundwater quality, due to the drilling and well design using multiple casing solutions to seal off aquifer sections during drilling and well operation.

- A neutral effect on groundwater quality due to the sealing of target testing zones by multiple casing solutions to seal off aquifer sections during well testing activities.

- A neutral effect on groundwater resource availability due to the water use being contained within a closed loop and the nearest SPZ being approximately 0.5 km distant from the proposal.

- A neutral effect on the transport and dilution capability of groundwater aquifers within the local area.

- A neutral effect on the biodiversity of the surrounding area including designated areas. The on-site activities are not expected to affect groundwater availability or quality.

- A neutral impact on pressures on water resources in the surrounding area, due to the non-intensive nature of on-site activities.

Proposed Mitigation

The proposed mitigation is largely embedded into the design and method of constructing the proposed development. These include:

- Appropriate well design would be used, including appropriate casing, engineering cement design and use of a closed loop drilling fluid (mud) system to allow gains and losses to be monitored. Testing of integrity of each string of casing through pressure testing;

- Water based muds would be used to drill through potentially usable aquifers. Use of low toxicity oil based drilling muds would be used for target horizons;

- Borehole design would be approved by the Environment Agency, OGA, HSE, and an accredited independent well examiner prior to drilling;

- Water for the drilling process would be contained within a closed system with any potential excess water from the drilling process being transported off site in suitable tankers;

- The geomembrane and “closed loop” drainage system would be maintained to ensure all liquids remained on the site for removal by a licensed waste contractor, and treatment prior to disposal if required;

- Frequent checking of integrity of site surface and drainage system;

- Cement batching/mixing for well cement would take place in a dedicated area;

- Rigs would be refuelled from dedicated tanks, which would be filled directly from fuel tankers that deliver to the site. This would be undertaken in the hardstanding area to ensure any spillage would drain to the impermeable cellar rather than the perimeter drainage pipe;

- Drilling fluids (muds) would be stored in a mud tank with a closed-loop system to prevent leakage;

- Prevention of groundwater pollution from spillages and the handling/management of drilling fluids and cuttings;

- Prevention of the escape of drilling fluids, gas and formation fluids into groundwater by good well design.

The proposal will also adhere to:

- UKOOG UK Onshore Shale Gas Well Guidelines for Well Design and Construction;
- Oil and Gas UK Well Life Cycle Integrity Guidelines;
- Oil and Gas UK Guidelines for Abandonment of Wells;
- Environment Agency Onshore Oil & Gas Sector Guidance;
- Guidance for Pollution Prevention (GPPs) for good practice, and;
- HSE Borehole Sites and Operations Regulations 1996.

The INEOS HSE representative will ensure operations proceed in accordance with management plans and planning conditions, for instance the site and surrounding area would be checked daily for visual signs of pollution (e.g. fuel oil, leakage from perimeter, noticeable silting).

6.7 Archaeology and Cultural Heritage

The Environmental Report has assessed the potential archaeology and cultural heritage impacts of the proposals. The key conclusions are as follows:

- The baseline assessment highlighted the presence of 15 designated and 26 non-designated heritage assets within the study area. These designated heritage assets are mostly medium to high value listed buildings located within Harthill and Thorpe Salvin. There are no designated standing buildings within 1 km of the site.
- The historic centre of Harthill lies approximately 1.5 km to the west of the site and the historic centre of Thorpe Salvin approximately 1.6 km to the northeast of the site.
- The visual impact assessment shows that the project is unlikely to be visible from the listed and non-designated standing heritage buildings within the historic centres of Harthill and Thorpe Salvin. Areas of mature woodland located between the site and the villages will provide visual screening in most instances. Should the project site be visible from these locations, this would be during Stage 2 drilling and coring when the 60 m drilling rig is on-site. The temporary nature of the drilling and overall development means the project is not considered to have a long term effect on the setting of these features.
- Consequently, it is considered that no harm to designated features will occur.
- Most of the non-designated assets within the study area relate to find spots. The non-designated standing heritage buildings are all located within the historic centres of the villages of Harthill and Thorpe Salvin and the impact to the setting of these buildings is considered to be negligible.
- A review of aerial images of the site shows the presence of linear features. A geophysical survey was undertaken which confirmed the presence and extent of these

features. Their nature and origin remains uncertain; they could be archaeological, redundant field boundaries and land drainage of several periods, or they may prove to be geological. As such, a programme of trial trenching is being planned and will be agreed with the County Archaeologist to investigate these geophysical anomalies as a pre-determination investigation.

Proposed Mitigation

Whilst the potential for any below-ground remains is low and no more than of local interest, any material found during construction will be recorded and a report will be sent to the County Archaeologist for inclusion on the Historic Environment Record. The effects of the development on the setting of above ground heritage assets are both limited and temporary in nature and therefore aren't considered to be significantly adverse. No mitigation is proposed on this basis.

6.8 Other Issues

6.8.1 Air Quality

Emissions to air will include vehicle and equipment exhaust fumes, dust and potentially hydrocarbon release (methane) during the drilling period.

Road traffic associated with the proposal would produce emissions to air during the temporary construction and drilling phases, similar to any construction site. The percentage change against existing traffic flows means the site does not trigger the assessment thresholds in the current guidance for planning (Planning for Air Quality, IAQM 2017).

On-site generators and the drilling rig (both diesel powered) would produce temporary, localised emissions to air, likely to include NOx, SOx, PM10 and 2.5, CO and VOCs. Generators would be sized appropriately for site energy requirements and would be efficient, with emissions reduced as far as possible. These would be similar to generators on construction sites. Emissions from operating the rig would also be reduced through choice of an efficient rig appropriate for the site, with minimal emissions. The majority of the required generators would be present on the site for less than 6 months, although a single generator will be required throughout the operating period. The 60 m rig will be on site for less around 3 months during the 5 month Stage 2 operations.

Dust from site preparation, construction and vehicle passage on access roads will be controlled with standard dust-control measures (as outlined in *the Proposal*) and is not considered likely to present a nuisance to site neighbours.

As the well is only proposed to be cored and subject to a pressure transient test, there is very limited potential for hydrocarbon gas (methane) to be released during the drilling process. Any emissions which do occur will be short-term and very small in volume and are not expected to have a material effect on local air quality.

The scale of the proposal is such that significant effects to air quality are not anticipated. The site is not within an Air Quality Management Area and so is not close to exceeding any air quality objective levels.

6.8.2 Contamination

The site is located on and surrounded by arable land. Examination of historical maps shows that there are no potentially contaminative historic land-uses on-site, although there is a historic landfill near to the site which will not be affected by the proposed development.

6.8.3 Human Health

Public Health and Public Concern is discussed in Section 8.2 of this statement. The proposal is for an exploratory core well only. Low risk activities are recognised by the Environment Agency through “Standard Rules” permits. These permits set out a number of operational controls which INEOS will need to comply with. The proposed activities comply with the operational and locational criteria necessary to qualify for a standard rule environmental permit. On this basis it is considered that the risk to human health is negligible.

6.8.3 Climate Change

The potential contribution of the proposal to national greenhouse gas emissions would be negligible. Climate change emissions associated with the proposal are expected to be limited primarily to those from vehicles and drilling equipment, which are considered to be small and not significant.

The exploration for Shale Gas as part of the UK’s response to climate change is discussed in Section 8.3 of this statement

7. Policy Analysis

There are a number of national and local policies which are relevant to this development. There are a series of "themes" in the policy controls which are in place. This analysis draws these "themes" together to avoid repetition.

National Planning Policy is provided in the National Planning Policy Framework ("NPPF") and Planning Practice Guide ("PPG").

National policy is founded on the need to achieve sustainable economic development. This has three dimensions, which require the planning system to perform three mutually dependent functions. These are an economic function; a social function, and; an environmental function[12].

NPPF is clear that, in line with the Planning Acts[13], planning decisions should be made in accordance with the Development Plan, unless other material considerations indicate otherwise.

NPPF sets a presumption in favour of sustainable economic development[14]. This encourages the approval of planning applications which accord with the Development Plan without delay. Where the plan is out of date or has no relevant policies, it requires permission to be granted unless the effects of doing so would significantly and demonstrably outweigh the benefits of the development.

NPPF and PPG set out a number of relevant policy themes, many of which also arise in Local Policy. These are:

- Building a strong, competitive economy[15]
- Supporting a prosperous rural economy[16]
- Promoting sustainable transport[17]
- Protecting Green Belt land[18]
- Meeting the challenge of climate change, flooding and coastal change[19]
- Conserving and enhancing the natural environment[20]
- Conserving and enhancing the historic environment[21]
- Facilitating the sustainable use of minerals[22]
- Hydrocarbon Specific Issues[23]

These themes are considered further below. However, it is important to note that national policy recognises the essential role that minerals play in supporting sustainable economic growth, as well as securing our quality of life[24]. It recognises the importance of ensuring that there is a

[12] NPPF Para 7
[13] S 70(2) of the Town and Country Planning Act 1990 and S38(6) of the Planning and Compulsory Purchase Act 2004
[14] Para 14
[15] NPPF Paras 18-22
[16] NPPF Para 28
[17] NPPF Paras 29-41
[18] NPPF Paras 79-92
[19] NPPF Paras 93-108
[20] NPPF Paras 109-125
[21] NPPF Paras 126-141
[22] NPPF Paras 142-149
[23] PPG Paragraph 112 Reference ID: 27-112-20140306
[24] NPPF Para 142

sufficient supply of materials and energy for the country, and notes that minerals can only be worked where they are found[25]. This is important policy context for the application proposals.

7.1 The Development Plan

In accordance with Section 70(2) of the Town and Country Planning Act 1990 and Section 38(6) of the Planning and Compulsory Purchase Act 2004 planning applications should be determined in accordance with the development plan unless material considerations indicate otherwise. Planning applications for mineral developments are dealt with by Rotherham Metropolitan Borough Council.

For the Proposed Development, the Development Plan comprises:

- Saved Policies from The Rotherham Unitary Development Plan 1999
- Rotherham Core Strategy 2013-2028

In addition, appropriate weight needs to be given to emerging plans, in this case:

- Publication Draft Sites and Policies Document 2015

The Draft Sites and Policies Document is currently undergoing examination. On this basis limited weight can be afforded to its policies.

7.2 The Principle of Hydrocarbon Extraction in the Countryside

Relevant Policies

NPPF: 142,144,147

PPG: Minerals Paragraphs 92, 98,101,103,104,115,119

Local Policies: MIN1, MIN3, MIN4; CS26

At a national level there are material considerations which add considerable support to the Proposed Development including guidance in the NPPF and PPG which gives great weight to the benefits of mineral extraction. National policy notes that minerals can only be worked where they are found. Para 98 of the Minerals PPG advises that typically, site construction, drilling and site clearance of exploration drilling onshore will take between 12 and 25 weeks but that for unconventional hydrocarbons, exploratory drilling may take considerably longer. Para 119 of the Minerals PPG advises that applications for the exploratory phase are likely to fall under paragraph 2 of Schedule 2 to the Town and Country Planning (EIA) Regulations 2011. Whilst all applications must be assessed on a case-by-case basis, the guidance states that it is unlikely that an EIA will be required for exploratory drilling operations which do not involve hydraulic fracturing. However, it is important to consider factors such as the nature, size and location of the proposed development.

Saved policies from the UDP and Core Strategy policies mirror this general approach. The UDP recognises the importance of minerals extraction to the local and national economy and notes that proposals will be judged on their merits, including national policy and guidance, and seeking to accommodate minerals development in areas where environmental effects are minimised.

[25] NPPF Para 142

The Core Strategy similarly notes that proposals for onshore oil and gas development will be judged on their merits and against all material considerations including national policy.

Policy Compliance

The site has been selected on the basis of a range of geological, environmental and amenity factors, as described in Section 3 of this report. This approach has been adopted to ensure that the right deposits are being targeted at the appraisal and production stages of the process, whilst minimising environmental effects while all stages of the process are underway.

This stage of activity will have limited economic benefits, although it is noted that without the exploration stage, none of the future benefits from minerals extraction in this area can be realised.

It is considered that there is no fundamental policy issue with hydrocarbon extraction in this area and therefore that the proposed development accords with these elements of local and national policy. The following sections of this Statement demonstrate that the impact of the Proposed Development on the environment is acceptable, and will not cause irreparable or unacceptable damage to interests of acknowledged environmental importance.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.3 Building a strong, competitive economy, and; supporting a prosperous rural economy

Relevant Policies

NPPF: 18, 19, 28, 142 and 144

Paragraph 142, at the very start of section 13 in the NPPF, advises that minerals are essential to support economic growth and quality of life and that it is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs.

The Rotherham Core Strategy has policies which encourage the transformation of the local economy, although these are all focussed on more traditional “B Class” employment uses and encouraging economic diversification. None are directly relevant to the economic effects of development as proposed in this application.

Policy Compliance

The economic effects of a core well are very limited. The number of people employed on the site during each stage will generally be around 5 to 14 staff, although this would increase to up to around 45 staff during the drilling stage (which lasts for 21 weeks). Total FTE equivalent job creation will be around 15 people. There will be some supply chain benefits for companies providing construction materials, transport services and local accommodation for the duration of the works. These effects, however, are negligible for the application development when considered alone.

The development, as applied for, will have negligible positive benefits for the local economy.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.5 Promoting sustainable transport

Relevant Policies

NPPF: 32

PPG: Transport plans, transport assessments and statements in decision-making

Local Policies: T4, T6, MIN5, CS14

Emerging Policies: SP9, SP31, SP51

The main relevant national transport policies require that safe and suitable access can be achieved[26]. Para 32 of the NPPF states that account should be taken of whether:

- sustainable transport modes have been considered, depending on the nature and location of the site;
- safe and suitable access to the site can be achieved for all people; and
- improvements can be undertaken within the transport network that can effectively limit the significant impacts of the development.

The Rotherham UDP has policies which require comprehensive traffic management schemes, including a range of factors, the most relevant being the need to optimise highway capacity, reducing accidents, and to achieve benefits to air quality, the pedestrian and residential environments. The UDP also seeks to reduce travel demand by locating higher trip generating uses close to public transport provision. The Core Strategy mirrors these, and seeks Transport Assessments for larger developments.

For minerals development, the UDP also requires consideration of traffic effects on residential amenity, road safety, property and the adequacy of access routes. Emerging policy also includes these factors, and adds the use of non-road based transport wherever this is physically and economically feasible.

Emerging policy notes that development will be supported where it can be shown that traffic circulation will not be adversely affected and the highway network is, or can be made, suitable for the traffic generated. Mitigation will also be required for any effects on the strategic highway network. Good practice guidance on transport assessment and travel plans will also need to be taken into account.

Policy Compliance

The site has been selected to ensure that it can be safely accessed by the vehicles which are needed to construct, drill, test, decommission and restore the development. The site is located off Common Road. The proposed vehicle access route to the site is to travel north- south from the site to the A619, some 3.5km to the south. This route passes several isolated dwellings and farms.

The location has been selected with vehicle routing in mind, ensuring that the route does not pass through small constrained villages and that the entire route has adequate width to ensure no conflict between site-bound traffic and other road users.

The Environmental Report submitted with this application outlines the transport assessment work undertaken. It concludes that that the proposals will not have a material impact on the

[26] NPPF Para 32, bullet 2

highway network that would be utilised as part of the route. However, a Traffic Management Plan will be implemented to manage vehicle movements to site and to minimise any transportation effects.

NPPF notes that development should only be refused where the impacts of development are “severe”. The transport assessment concludes that there will be no material impacts at any junctions and therefore it is concluded that there are no transport grounds to refuse this application.

The national policies are reflected in local policies although further consideration of effects on residential amenity, properties and road safety is required. Policy notes that developments will be supported where it can be shown that traffic circulation will not be adversely affected and the highway network is, or can be made, suitable for the traffic generated.

In this case, the Environmental Report and application drawings demonstrate that the site access and surrounding road network can safely and adequately accommodate the types of vehicles that will service the proposed development. The application is also accompanied by swept-path analysis which demonstrates that there is satisfactory provision within the site for access, manoeuvring and circulation.

In terms of amenity considerations, the number of residential properties in close proximity to the selected traffic route is very low. The number of vehicles accessing the site will be low for much of the lifetime of the development, although there will be more intense periods of limited duration. During these times there will be strict control over vehicle routing, driver behaviour, speeds and a complaints line will be set up to allow anyone experiencing difficulties with site-bound traffic to notify INEOS so that action can be taken. With these controls in place, it is considered that there is not likely to be a significant effect on residential amenity as a result of transport related effects.

The development will temporarily change the local traffic situation, although the routes are appropriate for the types and levels of traffic required. Some physical mitigation works are required for the duration of the operations. These will include a signage strategy to both direct vehicles associated with the development and warn other road users that HGV’s are operating in the area. A series of temporary passing places will be created within the existing highway verge to ensure that vehicles can safely pass each other. The development will not have a significant effect on transportation or highway safety or residential amenity interests arising from traffic related disturbance.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.6 Protecting Green Belt land

Relevant Policies

NPPF: Paras 80, 90

Local Policies: ENV1, CS4, SP2

Para 80 of the NPPF identifies the five purposes of the Green Belt and para 90 states that certain forms of development, including mineral extraction, are not inappropriate in the Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in the Green Belt.

UDP Policy notes that development will not be permitted except in very special circumstances, other than for uses which are appropriate to a rural area. The construction of new buildings in

the Green Belt is considered to be inappropriate unless it is for other uses of land which preserve openness and which do not conflict with the purposes of including land within the Green Belt.

Emerging policy reflects this general policy approach and notes that particular regard will be had to the following factors in considering effects on openness: size, scale, volume, height, massing, position, lighting and any proposed enclosures, screen banks and the extent to which regard has been ad to the relevant Landscape Character Area management strategy.

Policy Compliance

Based on the analysis undertaken in a suite of appeal and High Court decisions for Europa Oil & Gas at Holmwood, an exploratory core well is an inherent part of "minerals extraction" and therefore it is "appropriate development" in the Green Belt, provided that it preserves openness and it does not conflict with the purposes including land in the Green Belt.

The extent to which an exploratory core well site can preserve the openness of the Green Belt and not conflict with the purposes of including land in the Green Belt will depend upon an assessment of:

(a) the duration of the activity,

(b) whether the extent and nature of the proposed development is needed for that particular operation, and

(c) the extent to which the proposals are reversible.

In this case, the duration of activity will be short and entirely reversible. This application seeks temporary permission and includes restoration proposals. The extent of development as set out in *The Proposal* includes only equipment and areas which are truly necessary to carry out the operations described. The scale of the development is not over and above that which would normally be required for an operation of this nature.

On this basis, we consider that the development is appropriate in the Green Belt and that it preserves openness.

UDP Policy requires that the extent to which the development conflicts with the purposes of including land within the Green Belt is considered.

The site is in an area of Green Belt which is neither a strategically important gap between main settlements, nor is it suffering from historic erosion or risk of coalescence. There will be the temporary introduction of built development, but this is entirely reversible and temporary in nature.

There would be no enduring effect on the permanence or wider functioning of the Green Belt in this area.

It is considered that there would be no harm to the purposes for including this land in the Green Belt, not least as it is clear that the development can be considered to be both appropriate in a Green Belt, and that it will not affect openness.

Emerging policy also suggests that consideration of a range of factors is required. These are considered to be encapsulated within the tests set out by the courts in the Holmwood case as described above. Landscape character effects are considered further below.

The application is for minerals development which can only be undertaken where resources are located. The vast majority of the open countryside in Rotherham is Green Belt and only small

areas of PEDL 304 lie outside the District. These areas are also in Green Belt in the adjacent Authorities.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.7 Meeting the challenge of flooding and coastal change

Relevant Policies

NPPF: 120

PPG: Flood Risk and Coastal Change

Local Policies: UTL1.2, CS25.

Emerging policy SP35

National planning policy on climate change is focussed on the requirements of permanent (ie non-minerals) development and the need to secure renewable and low carbon energy sources.

The UDP and Core Strategy do not have relevant policies which specifically consider climate change, although the Core Strategy has a number of policies, for example governing securing renewable energy development and sustainable building techniques, which are justified as a result of climate change risks. Similarly, emerging policy has direct policy coverage relating to a range of matters, but no climate change specific policy.

National policy on flood risk relies on the policy assumption that development should be directed away from the areas which are at greatest risk of flooding. Where development is necessary in areas which flood, they should be made safe without increasing flood risk elsewhere.

UDP Policy UTL1.2 simply notes that where development will be at risk of flooding, or it would cause flooding elsewhere it will be resisted.

The Core Strategy mirrors the approach to flood risk set out in National policy.

Policy Compliance

INEOS consider that a future domestic shale gas supply would be a suitable lower carbon transition fuel, compared to other non-renewable alternatives. They also consider that gas as a fuel source can't be easily replaced for some domestic and industrial requirements, most notably as a feedstock for the petrochemical industry.

However, this application is for a core well which is purely for geological exploration purposes. It will have no benefits in terms of changing the UK's energy mix, and present negligible harm in terms of greenhouse gas emissions.

The site is not vulnerable to flood risk, coastal change, water supply or changes in biodiversity and landscape. It is a short term operation which will be restored within several years, unless it is subject to future applications for appraisal or production.

The site is not at risk of flooding as it lies in Flood Zone 1. A drainage strategy has been adopted which relies on a combination of (a) natural run off and soaking away at the fringe areas around the well pad and on the access track, to (b) a contained system which drains by gravity to a ditch

and sump within the sealed working area. The collected water can be either used in drilling (if it's not contaminated) or collected and tankered away for treatment.

This approach allows the surface water within the well pad to be contained so that any spills or contaminants are kept separate from the local water environment. This is a key element of embedded mitigation which ensures that surface activities at the well pad do not have any pathways to surface or ground water resources. Due to contamination risks, a SuDS solution is not appropriate.

This approach also ensures that there are no unrestrained flows of surface waters into water courses and as such the development is unlikely to cause any greater risk of flooding that the current agricultural use.

On this basis, the development is not likely to have any detrimental effects on flood risk, or the water environment. It is concluded that the proposed development accords with these elements of both national and local policy.

7.8 Conserving and enhancing the natural environment

National policy has a number of environmental aspects included under this general theme. They include landscape, geological conservation, soils, biodiversity, pollution of the air, water or noise environments, land instability and the remediation of degraded or contaminated land.

The Local Plan also has a series of similar policies which look to control impacts on these environmental aspects. Each is considered in more detail below.

7.8.1 Landscape

Relevant Policies

NPPF: 109, 114, 115

PPG: Landscape

Local Policies: ENV3, MIN5, CS21, SP35, SP51, ENV1.1 (Thorpe Salvin AHLV)

National policy looks to protect the character of landscapes, particularly those which are distinctive or subject to specific designations, such as AONB's or National Parks.

UDP Policy reflects this objective and recognises the importance of maintaining and enhancing the Landscapes in Rotherham. Minerals applications should assessed against their effects on landscapes, including Areas of High Landscape Value.

The site is also within an Area of High Landscape Value. These policies restrict development where it will result in significant, permanent adverse effects on the landscape. Strict control will be exercised over any development that does take place to ensure that the visual character of these areas is not affected. The Core Strategy offers similar protections for the areas of high landscape value.

The Core Strategy similarly looks to protect the character and qualities of the landscape. It encourages landscape management and enhancement and looks to protect important views and skylines.

Emerging policy seeks wide ranging measures to support, protect and enhance multi-functional green infrastructure. Amongst other measures, it encourages the use of appropriate mitigation measures, alternative site selection and consideration of alternative forms, orientations,

operations and layouts of development. For minerals proposals, developers will be required to follow an agreed scheme of working and restoration and effects on visual impacts and landscape character should be considered. Where it can be demonstrated that there are overriding benefits, development may be permitted subject to mitigation.

Policy Compliance

The site is in the open countryside. It is not in any nationally protected landscape designation. It is, however, is within a locally designated high value landscape.

The Environmental Report submitted with this application considers the landscape character effects of the development. The development is on arable farmland. There will be no loss of important landscape elements such as trees. Existing hedgerows will be retained although it will be necessary to remove some mature hedgerow to gain access to the site. This loss has been minimised to that which is strictly necessary to gain access and to secure appropriate visibility splays. This will ensure that safe access and egress can be provided for site vehicles whilst minimising the removal of mature hedges. The lost hedgerow will be replaced on a like for like basis and managed for a period of time to ensure that it reaches maturity as part of the restoration and aftercare scheme.

The development is temporary in nature and the most intensive working period will last only 21 weeks. Once the drilling rig and main site infrastructure is removed from site the development will have limited effects on landscape character. The scheme also includes restoration to as close to the original condition of the site as possible.

In respect of the development's effect on the area of high landscape value, there will be no significant or permanent adverse landscape effects arising from the development. The temporary nature of the development, as well as the limited period when more visually intrusive elements of working will be undertaken suggest that the development will not undermine the reasons for designating the area as having a high landscape value. The drilling stages of development will always be seen against the backdrop of the wind turbines to the south west, which are existing multiple manmade vertical intrusions in the landscape which will endure long beyond the operational period of this proposal.

The development will not create any permanent green space and will have no permanent effects on important views or skylines.

Appropriate mitigation measures have been included in the scheme, including siting of taller equipment on site and the use of earth bunds to offer screening.

The development will have a temporary adverse effect on the character of the landscape and on visual amenity for a small number of people living and travelling around the area of the site. However, this will be for a very limited period and the effects are not considered to be significantly adverse.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.2 Geological conservation

Relevant Policies

NPPF: 109,

Local Policies: ENV2, CS20, Emerging policy SP51

NPPF seeks to protect and enhance geological conservation interests.

The UDP seeks to ensure that effects on geological resources are fully taken into account. The Core Strategy looks to ensure that geodiversity resources are protected. Nationally important or other sites of recognised value will be protected, enhanced were possible and positively managed. It also looks to support the UK Geodiversity Action Plan.

Emerging policy simply encourages consideration of geodiversity resources.

Policy Compliance

The site is not located in a statutory or local designation for geological interest. The development is designed to secure a core for geological exploration purposes. The data secured from this drilling will be lodged with the British Geological Survey and made available for future reference on a confidential basis[27].

The development will not have any detrimental effect on geological conservation interests. Indeed, it will contribute to our understanding of the geology in this area through providing further data collected using all relevant modern data logging and assessment techniques.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.3 Soils

Relevant Policies

NPPF: 109

PPG: Brownfield land, soils and agricultural land

Local Policies: CS20

Emerging policy SP39, SP51

NPPF looks to protect the best agricultural soils, unless their loss can be demonstrated to be necessary.

PPG notes that the planning system should protect and enhance valued soils. It also notes that for large scale, plan making based decisions, where significant development of agricultural land is necessary, local planning authorities should use areas of poorer quality land in preference to that of a higher quality.

The Core Strategy also looks to protect soil resources and to manage the release of the best and most versatile agricultural land, taking into account the economic benefits of the development and releasing poorer quality land in preference to higher quality land.

Policy Compliance

The site is Grade 2 agricultural land and is therefore considered to be “best and most versatile” land. However, the development will not result in the loss of this land as appropriate soil management techniques will be utilised and the site will be restored. The site is also not a

[27] As required by BGS though the Mining Act 1926 and as noted in their standard notification forms for borehole drilling.

significant size and should not therefore have any meaningful impact on the overall availability of good quality land, such that it would have an effect on farming practices or outputs in the longer term.

The site set up and restoration proposals will ensure that the soil resource is preserved. Top and sub soils will be stripped and stored in bunds of a height and construction that comply with DEFRA guidelines and will not damage soil structure. Once the use of the site has ceased, the subsoils will be ripped, positively drained and top soils will be replaced so that agricultural uses can resume. The aims of the restoration scheme are to ensure that the quality of the agricultural land will be as close as possible to the original.

There will therefore be no loss of good quality agricultural soils as a result of the proposed development. It is not considered that the development will significantly affect the quality, nature and use of the future agricultural land.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.4 Biodiversity

Relevant Policies

NPPF: 109, 118, 119

PPG: Biodiversity and ecosystems

Local Policies: ENV2, CS20, SP51, SP55

National policy has considerable guidance on biodiversity and the protection of ecological interests. The general policy approach is to avoid significant impacts wherever possible, and where this is not possible to ensure that adequate mitigation is provided. Where necessary, compensation for loss may be appropriate.

Sites which are designated as being of ecological importance (eg SSSI, SPA, SAC, Ramsar Sites) should be protected. Guidance is clear that where there is an adverse effect on these sites, permission should not normally be granted. However, exceptions can be made where the benefits of the development clearly outweigh the impacts likely to occur and any wider effects on the network of important ecological sites.

The loss of irreplaceable habitats, including ancient woodland or veteran trees, should be avoided. Policy is also clear that if “appropriate assessment” under the Habitat Regulations is required, the presumption in favour of sustainable development will not apply.

Policy encourages opportunities to incorporate biodiversity in development proposals.

This general policy approach is mirrored in the adopted and emerging local policies. The Core Strategy makes specific reference to supporting the delivery of the Rotherham Biodiversity Action Plan (BAP) and the Yorkshire and Humber Biodiversity Strategy and Delivery Plan.

Policy Compliance

The protection of biodiversity and protected species is a very strong theme in both policy and national legislation. The application site is currently in an intensive agricultural use. The Environmental Report accompanying this application includes ecological assessment work. The report concludes that, provided mitigation measures are incorporated, there are no important habitats or protected species that will be affected by the development. Hedgerows lost as a

result of gaining site access can be replaced with species rich hedgerows, should this be necessary and beneficial to overall biodiversity. As the existing hedgerow in the visibility splay is currently gappy, rather than trimming the hedge to achieve visibility, it will be laid to fill gaps and encourage regeneration of the hedgerow.

The survey also concludes that the habitats are not likely to be suitable for use by protected species, although notes that some limitations on working should apply. These include not clearing any vegetation in the bird breeding season unless it has been checked and where necessary buffer zones around any breeding birds created, and the creation of a dark zone and ecological buffer around the east and south of the site so that the potential effects on any bats or mammals foraging along the hedgerows and nearby woodland are minimised.

The assessment includes consideration of species and habitats which are noted of being importance locally in the Rotherham BAP and Yorkshire & Humber Biodiversity Strategy. There will be no loss of habitats which are of local importance and the restoration scheme will ensure that the site is returned as close as possible to its previous condition.

The development is not considered to have any significant effect on biodiversity interests. It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.5 Pollution, Land Instability, Contamination, Pollution Control and Remediation, including the water environment.

Relevant Policies

NPPF: 120, 121, 122

PPG: Water supply, wastewater and water quality, Land Stability

Local Policy: MIN5, MIN6, CS24

Emerging Policy SP51, SP57, SP55

National policy seeks to prevent unacceptable risks from pollution (of land, water, and air environments) and land instability. It seeks to ensure the development is appropriate for its location and that cumulative effects on health, the natural environment or general amenity are taken into account.

Minerals Planning Authorities should focus on whether that development is an acceptable use of the land rather than the control of processes or emissions, which will be governed by pollution prevention regimes. Planning Authorities should assume that those regimes will operate effectively.

PPG sets out a list of issues which MPA's can leave to other regulatory regimes. These are discussed in more detail at Paragraph 7.9 below.

UDP policies have similar requirements to national policy and also require consideration of the effects of working and restoration on water resources, including pollution. It also requires an appropriate form of restoration to a suitable standard and timescale.

The Core Strategy notes that new developments should not create pollution or hazards which could harm the environment or communities. It notes that appropriate mitigation may be required to allow development to occur. The Core Strategy would not support development which harms watercourses, including its geomorphology, water quality and ecological value.

Emerging policy again has similar requirements and adds considerations in respect of the effects of restoration on future agricultural use of the land. Emerging local policy also notes that where development may mobilise contaminants, proposals should demonstrate that there is no significant harm, risk to human health. Applicants should clearly demonstrate that the site is suitable for its proposed use and that ground conditions issues have been identified and safely treated.

Emerging policy also notes that development that may cause pollution incidents should be subject to appropriate mitigation, with consideration being given to impacts on amenity in the local area, including public health risks.

Policy Compliance

The development will be governed by a wide range of regulatory processes. Before the development can commence INEOS will need to notify or secure the approval of bodies such as the Environment Agency, Health and Safety Executive, British Geological Survey and the Department for Business, Energy and Industrial Strategy (BEIS via the Oil and Gas Authority, formerly DECC). In addition to planning controls, around 10 separate authorisations or notifications are required before the development can be commenced. These processes manage both drilling methods and controls, as well as waste management, health and safety, pollution control and environmental permitting.

The Proposal which accompanies this application includes a number of working practices which illustrate how the site will be constructed and operated to ensure that there are no pollution incidents which could cause harm to any nearby receptors. It also includes restoration proposals which will ensure that the site is left in a clean and safe condition for agricultural uses.

The development will be constructed over an impermeable barrier which will line the operational area of the site. This will contain any fluids which are released on site and ensure that they cannot reach and surface or ground waters.

The site will operate an effective spill / fluid release strategy and will actively manage all fluids which have the potential to cause a pollution incident. All liquids will be kept in self bunded tanks or in a dedicated chemical storage area which is bunded.

The operational area of the site will be positively drained and surface waters which may include any oil or other spills will be collected and tankered off site to avoid discharge to the local water environment.

Ground water pollution will be avoided through the use of modern drilling techniques. The well will be constructed in two stages. The first stage will drill through both the aquifers and the mine workings to a depth of just under 500m This will be drilled using a smaller rig. Drilling muds in this shallow section will be water based and of a composition agreed with Environment Agency as being inert and appropriate for use when drilling through aquifers. The borehole will be cased with steel and cemented into place, the chemical composition of which will also be agreed with Environment Agency in advance. The drilling stages following this will all follow the same general protocol, using the full scale drilling rig and agreeing mud and cement mixes in advance. That main stage of drilling will take place below the sealed aquifer. Therefore risks of ground water pollution are reduced.

Details of all of the measures to control the risk of pollution to the water environment are set out in The Proposal. It is concluded that there is not likely to be an effect on the water environment.

The development will be subject to a wide range of controls to avoid pollution incidents during any stage of the on site activity. These are set out in *The Proposal* and the Environmental Report. Many of these working methods are embedded in the site set up and include measures

such as the full lining and containment of the operational area of the site, provisions to collect and dispose of any surface waters and drilling wastes and suitable bunding of all liquid and chemical storage areas. This will ensure that the operations are not likely to cause any pollution incidents or harm the environment or amenity by virtue of pollution related issues.

The application site is not currently contaminated as it has a history of agricultural use, rather than any use which may have caused pollution or land instability issues. Examination of mine abandonment plans and Coal Authority Risk Maps[28], mining reports and geospatial data suggests that this area of Rotherham is in a low risk area of coal mining influence.

Figure 7.1: Extract From Coal Authority Risk Mapping

However, it is understood that the area has previously been mined, although the works have already collapsed due to the mining methods employed. There is unlikely to be any influence on site stability or existing contamination which results from former mining activity.

The development is unlikely to mobilise any existing contaminants and will not cause the site to become contaminated after the use has ceased.

The drilling of a borehole will have no impact on any wider ground stability issues and will be appropriately cased and grouted during the drilling operation. At decommissioning stage cement plugs are set within the casing to seal the wellbore and the plugs are tested. The borehole location will be logged with BGS so that any other companies operating at depth or intending to drill or extract minerals in this area knows where the bore is located so that it can be taken into account.

The site will be restored to a high standard and will reinstate all sub and top soils, as well as creating appropriate land drainage to ensure that future agricultural practices are not adversely affected.

It is considered that the development accords with the requirements of these policies. Public health impacts are considered at Section 8.2.

[28] https://www.gov.uk/government/publications/coalfield-plans-rotherham-area

It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.8 Noise

Relevant Policies

NPPF: 123, 143, 144

PPG: Noise

Local Policy: MIN5, emerging policy SP51, SP55

National policy also seeks to control noise effects and their potential impacts on health and quality of life. It encourages mitigation measures to reduce noise effects[29].

NPPF also recognises that some noisy short-term activities which may otherwise be acceptable and unavoidable inn order to facilitate minerals extraction[30]. It is not considered that the development will have an unacceptable effect in this instance and in line with NPPF guidance[31], appropriate noise limits have been suggested.

UDP policy notes that the effects of minerals development on the noise environment should be considered. Any protective measures should be taken into account.

Emerging policy requires consideration of the effects on noise on amenity. It also notes that a noise assessment may be required to enable clear decision making.

Policy Compliance

The nearest properties which may be sensitive to noise effects are those on the edge of Harthill, some 0.7 km to the east. There is also a public footpath that runs to the immediate east of the site boundary. There is limited intervening vegetation and no significant intervening topography between the site and these properties and footpath users.

The proposed development has been carefully designed to incorporate mitigation that will limit the impacts of noise and vibration on these sensitive noise receptors. These features are described in full in the Environmental Report, but include: use of bunds and location of containers and cabins on-site selected to optimise screening of site activities; use of silencers or other noise attenuation equipment, and; night-time vehicle movements would not be permitted except in case of emergency.

The Environmental Report which accompanies this application includes a noise assessment which concludes that the activities on site are not expected to exceed the noise limits set out in planning guidance during either the day or night times at the nearest properties. It also notes that these effects will be temporary and are therefore unlikely to have a significant adverse effect on quality of life.

The NPPF recognises that some noisy short-term activities which may otherwise be unacceptable are unavoidable in order to facilitate minerals extraction[32]. It is not considered that the proposed development will have an unacceptable effect in this instance and in line with

[29] NPF Para 123
[30] NPF Para 143, bullet point 7
[31] Para 144, bullet point 4
[32] NPF Para 143, bullet point 7

NPPF guidance[33], appropriate noise limits have been suggested. In light of this the proposals will not conflict with national policy or the relevant policies in the MLP and the saved and emerging LP.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.9 Air Quality

Relevant Policies

NPPF: 123, 124

PPG: Air quality

Local Policies: MIN5

Emerging policy SP51

NPPF seeks to control emissions to air to ensure that EU limit values and national objectives for pollutants are not exceeded.

The UDP notes that dust effects should be considered, along with any protective measures which are proposed. Emerging policy also requires this. In addition emerging policy notes that impacts on national air quality objectives should be considered and notes that assessments of local air quality impacts, including locally determined air quality management areas and the Air Quality Action Plan should also be considered.

Policy Compliance

The site is not in an Air Quality Management Area and so is not at risk of exceeding the national objectives for common pollutants. The development will not generate a level of traffic which suggests that there will be a vehicle emission related air quality issue in this area.

The key phase of development when air quality impacts could occur is during construction. The Environmental Report and Proposals set out a range of industry best practice mitigation measures which will ensure that dust suppression measures are in place. These include selecting and maintaining equipment, as well as simple practices like sheeting lorries which deliver loose materials, damping down any exposed earth in dry and windy conditions, and seeding stored top soil bunds to bind soil.

The development is not therefore likely to have an effect on local air quality.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.8.10 Lighting

Relevant Policies

NPPF: 125

PPG: Light Pollution

[33] Para 144, bullet point 4

Emerging policy SP55

Policy seeks to limit the impact of light pollution on intrinsically dark landscapes and or for nature conservation purposes.

Emerging local policy notes that lighting can have adverse effects on sky-glow, glare or intrusion to properties.

Policy Compliance

The site will need to operate for 24 hours a day during drilling activities and temporary lighting will therefore be installed to ensure that the site can operate safely. This will be for a limited period during the lifetime of the proposed development. Lighting will be located to avoid direct glare outside the site and will be shielded to direct light to where it is needed.

The lighting will be shielded and directed to where it is required. Lighting levels will be minimised to the lowest level possible, there is no potential for direct glare impacts at these properties. The drilling rig will have lighting on its mast, but these are limited in both intensity and number. The lighting will be relatively low level and directed at the rig itself. It is designed for safety of working purposes rather than lighting a wider area. Whilst this will make the rig visible at night, there should be no significant effects such as direct glare to habitable room windows.

It is also important to note that the application is temporary in nature and the most intensive working periods will be limited in duration to 21 weeks. It is not considered that the lighting of the site will have a significant adverse effect.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.9 Conserving and enhancing the historic environment

Relevant Policies

NPPF: 135

Local Policy: ENV2, CS23

Emerging policy SP45, SP46

National Policy seeks positive management of the historic environment. Where there is likely to be an effect on a heritage asset its significance needs to be understood and a proportionate assessment of the effects of the development must be undertaken.

Where a development will result in effects on a non-designated heritage asset, policy notes that a balanced judgement must be made having regard to the scale of any loss.

The UDP seeks to protect and enhance the historic environment, whilst supporting appropriate development. The Core Strategy has a similar aim and notes that proposals will be supported which protect the heritage significance and setting of locally identified heritage assets.

Emerging policy further notes that the preservation of archaeological remains in situ is the preferred solution, but where this is not justified preservation by record would be acceptable. It requires supporting information of sufficient detail to establish the effects of the development on any affected assets and may require heritage statements if the development affects known or potential heritage assets.

Policy Compliance

The site does not have any listed buildings, scheduled ancient monuments and is not within a conservation area. There will be no direct effects on any surface based heritage assets.

There are a number of listed buildings in Thorpe Salvin and Harthill. However, these are all village related structures (houses, church stones, sundials, threshing barns, etc) which are located within the villages and which are likely to draw historic significance from their immediate settings, rather than a wider agricultural setting. There is no intervisibility between the main working area of the site and these structures, although there may be some visibility of the drilling rig when that is on site. However, there is unlikely to be any indirect effect on the structures or their setting for the reasons described above.

The Environmental Report includes a desk based archaeological assessment and a geophysical survey, which concludes that there should not be a significant effect on built heritage or designated assets. The geophysical survey, along with aerial photography analysis has shown a series of linear features across the site. It is not clear whether these are archaeological or geological in nature. Further archaeological investigations are being agreed with the County archaeologist and trial trenching will be undertaken to inform a detailed programme of mitigation.

There is potential for non-designated heritage assets to be discovered on the site, but on the basis of the desk based report and investigations available to date, these are unlikely to be significant and it is likely that preservation by record will be an appropriate solution to dealing with those remains. This work will be undertaken to ensure that recording is complete before any assets are removed.

It is concluded that the development is not likely to have any effects on the historic environment that can't be adequately mitigated.

It is concluded that the proposed development accords with these elements of both national and local policy.

7.10 Facilitating the sustainable use of minerals

Relevant Policies

NPPF: 144

PPG: Minerals, Planning for Hydrocarbon extraction

Local Policies: MIN1, MIN3, MIN4, CS26

Emerging policy SP51

National policy recognises that minerals are essential to support economic growth and that they can only be worked where they are found. It sets out a range of guidance relevant to minerals development, some of which duplicate the topic based environmental controls discussed above. In addition, it seeks reclamation of minerals sites at the earliest opportunity and seeks high quality restoration and aftercare of sites.

NPPF also makes specific reference to the effects of mineral extraction on human health.

The UDP also recognises the importance of minerals to the national and local economy. It notes that the Council will seek to accommodate all new minerals development in a manner and in locations which minimise impacts on the environment, water resources and local amenity. It

notes that proposals to work energy minerals will be assessed on their individual merits against all materials planning considerations, including national policy.

It also notes that the Council will support exploration for oil and gas, provided that local amenity is not unduly affected, full restoration is carried out after testing, no long term harm to the environment is caused, drilling activities are appropriately sited to reduce environmental impacts and make use of derelict or non-agricultural land where practicable. It also notes that safety is of paramount importance.

The Core Strategy similarly notes that provision will be made for energy mineral extraction and that applications for this activity will be assessed on their merits.

Emerging Policy requires that an agreed scheme of working and restoration is in place. It notes a wide range of factors against which such proposals will be considered, including local amenity effects, duration of working, landscape character, heritage, biodiversity and geodiversity resource impacts, the proposed form and appearance of the development, impact on good quality agricultural land including whether the land taken is restricted to that required, site restoration, effects on farm structure, traffic effects including adequacy of access and the potential for non-road transport to be used.

Policy Compliance

The development proposes exploration of a limited resource within the PEDL which covers this area. This activity can only be undertaken in this general location.

The restoration objectives of the development are considered in more detail in *The Proposal*. The objective is to restore the site to as close to its original condition as possible.

The assessment work undertaken for this application indicates that there will not be any noise, air or water pollution incidents, as these have been either designed out through embedded mitigation or specific mitigation measures have been proposed as part of the application package in response to site specific issues.

Wastes arising from the site will be appropriately managed on site and disposed of by licenced waste carriers and operators. The drilling muds, cements and all other chemicals which may enter the environment during the drilling process will be agreed in advance with Environment Agency. This will ensure that the risk of a pollution incident that may affect human health is minimal.

Whilst this application is solely for a core well, it is useful to note that Public Health England have reported on the potential health effects of shale gas extraction[34] and concluded that potential risks will be low provided that the operations are properly run and regulated.

There are a range of potential effects considered in the policy analysis above. It is concluded that this development will not result in any effects which would undermine human health, the protection of the environment, or residential amenity. The development will operate in line with all applicable safety protocols.

It is considered that this development may assist in securing the sustainable use of minerals. It is concluded that the proposed development accords with these elements of both national and local policy.

[34] "Review of the Potential Public Health Impacts of Exposures to Chemical and Radioactive Pollutants as a result of the Shale Gas Extraction Process", Public Health England, June 2014

7.11 Hydrocarbon Specific Issues

PPG notes that MPAs should not need to carry out their own assessment of a number of issues associated with hydrocarbon extraction. However, it is necessary to be satisfied that the issues can be adequately addressed by seeking consultation inputs[35]. Those which are relevant to a core well proposal are considered below.

- Seismic Risk

  This is regulated by BEIS (formerly DECC). The application does not propose hydraulic fracturing and therefore there will be no seismic risks resulting from the development.

- Well Design and Construction

  This is regulated by HSE. The proposed well follows current industry best practice and has been designed with considerable embedded mitigation to ensure that the development does not create pathways from pollution sources to sensitive receptors. The well has been designed to be appropriate for the underlying geology based on desk based, seismic and other borehole data in the area.

- Well Integrity during operation

  This is also regulated by HSE. The development will be subject to on-going monitoring during construction, operation and decommissioning by INEOS site staff. The well will also be monitored by HSE and appointed independent experts to ensure that it remains safe during operation. Any incidents that may affect well integrity will be promptly reported and activities will immediately cease while the issue is rectified.

- Operation of surface equipment at the well pad

  This is regulated by Environment Agency and HSE. The Proposal includes a number of measures which will be implemented on site to control any planning related matters including pollution prevention and noise control measures. The operation of the surface equipment will be monitored regularly and all equipment will be subject to regular maintenance by INEOS staff and checked by personnel from the regulatory bodies.

- Extractive Waste, as defined by the Mining Waste Directive

  This is regulated by Environment Agency. An Environmental Permit application is being prepared to be submitted to Environment Agency in due course. This will include a commitment to comply fully and exclusively with Environment Agency`s published waste management plan (WMP 3) which details the processes to be used to manage different waste streams at the site. The Proposal accompanying this application sets out methods that will be employed to manage the waste streams associated with the development.

- Flaring or venting of gas

  Flaring and venting is subject to control by BEIS (formerly DECC). The aim of the application well is to secure a core of rock and to undertake basic geological testing. There is no intention to flow test the well and it is not anticipated that any flaring will take place. Any gas released by the action of drilling into the shale layers, or after performing the pressure transient test, will be incidental and negligible in the scale of the wider proposal.

[35] Minerals PPG Para 112, Reference ID: 27-112-20140306

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- Off-site disposal of drainage water

  Environment Agency regulates the disposal of final waste drainage water from the site. All liquid wastes will be collected in their own waste stream in appropriate contained facilities. These will be handled, transported and disposed of at a facility licensed to receive and dispose of such wastes.

- Well decommissioning or abandonment

  THE HSE will review the well design to ensure that it is appropriate to ensure the fluids can't escape from the well. It is anticipated that there will also be an appropriate planning condition applied that requires the site to be properly restored.

Emerging policy SP53 includes a number of factors which are relevant solely to hydrocarbon exploration and appraisal[36]. This policy notes that exploration will be permitted where they are supported by an overall scheme for the exploration of an oil or gas field, including any other fields in close proximity as far as is reasonably practicable and before production begins. This must include:

- an indication of the extent of the resources and the extent of the area of search within the resource;
- demonstrate that the integrity of the geological structure is suitable;
- site infrastructure and associated facilities in the least sensitive location from which the target resources can be accessed, so as to minimise the environmental and ecological impact of development;
- mitigate any adverse impacts to an acceptable level, with safeguards to protect environmental and amenity interests put in place as necessary;
- operations should be for an agreed, temporary period; and
- sites and associated facilities should be restored in line with a scheme to be agreed by the Council at the earliest practicable opportunity if resources are not found in economically viable volumes, or they are developed within a time frame agreed.

This policy reflects a number of the factors already considered above. The key additional requirement is for a consideration of how the wider gas field will be explored. This application represents an early stage of exploration, where it is intended to gather geological data across different geological types within the PEDL area. This will allow consideration of the nature of the geology and whether there is potential to produce shale gas from the targeted strata. It is currently unclear what the resource is and its geographical extent. This application is one of several across INEOS PEDL areas in the East Midlands and is targeting initial geological results only. If the results are promising there may be further applications for exploration and potentially appraisal wells. However, at this stage the intention is simply to understand the various strata across the East Midlands area.

7.12 Policy Conclusions

The development has been considered against the relevant national and local policies which apply to this scheme. Subject to adequately securing the mitigation measures included within and proposed by this application, the proposed development is found to accord with the relevant policy context.

[36] Draft Policy SP54 concerns only hydrocarbon production, so is not relevant to this application.

There is a duty on INEOS[37] to maximise the production of petroleum from this area and national policy recognises the essential role that energy minerals play in supporting sustainable economic growth.

This application is a critical part of the exploration process which will help to establish, alongside other similar applications, whether the UK has a viable shale gas industry which can support its manufacturing and energy sectors and help the UK transition to a lower carbon future.

The policy analysis has not found any areas of conflict with national or local policy which can't be appropriately mitigated to ensure that no harm arises to the interests the policy seeks to protect. As such it is concluded that the development accords with the provisions of NPPF and the guidance in the PPG.

It is also concluded that there is no conflict with the Local Plan.

As such, it is considered that the development attracts the presumption in favour of sustainable development, and the presumption in favour of making decision in accordance with the Development Plan, provided that there are no material considerations which outweigh those presumptions.

Relevant material considerations are considered in the next section of this report.

[37] Under their PEDL License for this area

8. Other material considerations

8.1 The Regulatory Regimes

Derbyshire County Council is one of the key regulators in the hydrocarbon extraction process. Each regulator has to be satisfied that the development will operate effectively in the context of their specific regulatory regime. The key regulators and their responsibilities in this regard are as described earlier in this statement (paragraph 1.2).

The Planning Practice Guidance (PPG) makes clear that MPAs should assume that these regimes will operate effectively and that whilst issues such as groundwater, well design, well integrity during operations and mining wastes may be put before MPAs, they should not need to carry out their own assessment and can rely on the assessment of other regulatory bodies[38].

In respect of hazards associated with potential exposure to air and water pollutants, it should be presumed that the regulatory bodies identified above will operate effectively to control such emissions[39].

8.2 Public Health and Public Concern

Paragraph 144 of the NPPF requires decision-makers to ensure that there are no unacceptable adverse impacts upon human health and that they take into account the cumulative effect of impacts from individual sites. The Health and Well-Being PPG requires these matters to be considered in the planning decision-making process.

Potential public health impacts are covered in each of the relevant technical reports found in the Environmental Report where reference is made to:

- Highway safety
- Noise and vibration
- Potable groundwater supply
- Surface water quality and flood risk
- Land contamination.

These are summarised below.

8.2.2 Highway Safety

The site would be subject to a Route Management Strategy which would set out details of how INEOS would manage vehicles and drivers, particularly in relation to the speed of vehicles and routeing. Increases in traffic volume as a result of the proposed development would not be sufficient to materially alter road safety risk.

8.2.3 Noise and Vibration

The noise assessment demonstrates that both daytime and night time noise levels would be below the relevant criteria. This, together with the temporary nature of the development, means that no impacts on public health as a result of noise would occur. Adverse impacts from vibration from drilling are expected to be negligible.

[38] Minerals PPG Paragraph: 112 Reference ID: 27-112-20140306
[39] Minerals PPG Paragraph: 112 Reference ID: 27-112-20140306

8.2.4 Potable Groundwater Supply

The environmental design and management of the proposed development will mean that there will be no significant effects upon groundwater and groundwater receptors and therefore no significant effects on human health.

8.2.5 Surface Water

Standard embedded mitigation measures will reduce the risk of any impacts during the different phases of development.

8.2.6 Flooding

Flooding can be detrimental to human health in terms of physical safety, risk of damage to property and risk of polluted flood waters. The site lies in Flood Zone 1. The site is not at risk from flooding from tidal sources and the risk of flooding from other sources – groundwater and sewers – is assessed as very low. Overall, there will be no significant effects on human health as a result of effects or as a result of flood risk.

8.2.7 Contamination

INEOS has considered human health in relation to contamination. The risk to human health from on-site sources of contamination is considered to be low.

8.3 Climate Change

Paragraph 7 of the NPPF highlights the need for the planning system to perform an environmental role, including minimising waste and pollution and mitigating and adapting to climate change including moving to a low carbon economy. Paragraph 93 of the NPPF adds that planning plays a key role in helping to shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change.

The Written Ministerial Statement, Shale Gas and Oil Policy, dated 16 September 2015, ("WMS") states that there is a national need to explore the UK's shale gas and oil resources. Exploring and developing the country's shale gas resources can potentially bring substantial benefits and help meet the objectives for lower carbon emissions. The WMS states that the Government remains fully committed to the development and deployment of renewable technologies for heat and electricity generation but gas is required to support the Government's climate change target by providing flexibility and reducing reliance upon high-carbon coal.

The Government therefore supports the exploration for shale gas as part of the UK's response to climate change. The recent decision by the Secretary of State for Communities and Local Government in respect of Cuadrilla's proposals for shale gas exploration at Preston New Road in Lancashire[40] makes clear that the way the Government chooses to respond and adopt its various energy policies in light of the Paris Agreement is a matter it will need to consider and address through policy development. The WMS represents the Government's position in relation to the need for shale gas exploration and the need for gas to support its climate change target.

The potential contribution of the proposed development to national greenhouse gas emissions would be negligible. The proposed construction of an exploratory well at the site would not have any significant impact upon the national planning policy objectives relating to climate change. The proposed development is therefore consistent with the NPPF.

[40] Ref APP/Q2371/W/15/3134386 dated 6 October 2016

There is relatively little that an exploratory well can do to minimise its impact upon the causes of climate change. INEOS has demonstrated that the preferred access route for vehicles is the most appropriate route to the A-road network. This helps minimise vehicle emissions. The site is located in a low flood risk area, according to the Environment Agency mapping. The actual risk is not considered to be unacceptable and would not result in any material increase in flood risk elsewhere. The site would be restored back to its existing use and, as such, does not represent a contribution to addressing future climate change adaptation.

The report 'The compatibility of UK onshore petroleum with meeting the UK's carbon budgets', published in July 2016 by the Committee on Climate Change looked at emissions arising from the extraction and production stages of development. It found that exploration emissions are generally small, although little information is available on emissions associated with exploration. The Government's response was to agree that appropriate emission mitigation techniques should be employed where practical during the exploration phase.

Climate change emissions associated with the proposed development are expected to be limited primarily to those from vehicles and drilling equipment which are considered to be generally small and are not considered to be significant.

8.4 Restoration and After Care

The application provides for the well to be plugged and decommissioned in accordance with good practice and in accordance with OGA's normal procedures. Two permanent tested barriers (cement) will be set within the steel casing to seal the wellbore. The casing would then be cut approximately 2m below surface and capped with a steel plate. All on-site structures including any welfare and support buildings, the well cellar and sump-lining would be removed. Any residual waste or materials would be removed from the site along with the site lining.

The land would be re-graded and deep scarified in accordance with best agricultural practice. Stored subsoil and top soil would be loose spread over the re-graded ground and subsoil to relieve compaction. The site would be re-contoured and restored to agricultural use.

The proposed reinstatement programme is set out in *The Proposal*.

Paragraph 144 of the NPPF states that MPAs should 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. Bonds or other financial guarantees to underpin planning conditions should only be sought in exceptional circumstances. INEOS has applied for a five year planning permission and it is anticipated that restoration conditions would be used to ensure restoration upon completion of the development and at the latest after five years. The OGA undertakes checks on the ability of companies to exploit oil and gas before issuing PEDLs. Bearing this in mind and the financial standing of the applicant, there are no exceptional circumstances to warrant seeking a financial guarantee.

8.5 Hydraulic Fracturing

INEOS confirms that the planning application does not propose any hydraulic fracturing or fracking. Hydraulic fracturing forms no part of this application and therefore this proposal should be assessed on its own merits.

8.6 Monitoring

INEOS has proposed a number of conditions which are considered appropriate in controlling the grant of planning permission (Appendix 4). Some of these conditions will require a number of management plans covering traffic, noise and archaeology to be submitted and approved before development can commence. Part of the purpose of these conditions is to ensure that appropriate monitoring and response measures are in place in the rare event that specified thresholds or methods of working are breached. Should planning permission be granted, INEOS and its consultants will work closely with the MPA's monitoring and enforcement team to ensure that the site is operating in accordance with the planning permission.

8.7 Environmental Safety

Site specific Emergency Response Procedures would be put in place in consultation with the emergency services. Drilling and any subsequent testing operations would be conducted in accordance with good oilfield practice and all relevant controlling bodies and British Standards. In the event that an emergency situation occurs, the well would be instantaneously "closed in" by means of the blow-out preventer. The adoption of normal emergency procedures applicable to oilfield operations would ensure compliance with the UK onshore environmental safety control regime.

8.8 Health and Safety

Borehole operations would be undertaken as required by the Borehole Sites & Regulations 1995, the Management of Health & Safety at Work Regulations 1992, the Construction (Design & Management) Regulations 2007, the Offshore Installations & Wells (Design & Construction etc) Regulations 1996 and INEOS's Safety, Health & Environment (SHE) performance system. All construction, drilling, possible testing and restoration activities would be carried out in accordance with the UK's health & safety controlling bodies.

8.9 Economic Benefits and Disbenefits

Paragraph 120 of the Minerals PPG advises that individual applications for the exploratory phase should be considered on their own merits. They should not be assessed by taking account of hypothetical future activities for which consent has not yet been sought. Whilst the Written Ministerial Statement[41] makes reference to the substantial benefits that exploring and developing shale gas can potentially bring, the potential wider economic benefits of shale gas production at this exploration stage carry limited weight.

Although there may be some degree of economic disbenefit to local residents and local businesses in close proximity to the site, the impacts will be localised and short in duration. Pollution control and potential health impacts can be addressed satisfactorily through planning conditions and other regulatory regimes.

8.10 Conclusions

This section of the statement has considered the presence and likely operation of the various regulatory regimes which govern onshore oil and gas operations. It has considered potential effects on public health and public concern about the likely effects of this application, including on climate change. It has also considered a range of monitoring and safety factors which need to be taken into account, including the fact that this application does not include hydraulic fracturing. It recognises that the application itself will deliver very limited economic benefits and

[41] SHALE GAS AND OIL POLICY: Written statement - HCWS202 16 September 2016

notes that there are likely to be some small scale and short lived disbenefits for people and businesses operating in the immediate vicinity of the site.

It is concluded that there are no material considerations which suggests that the application ought to be refused contrary to its accordance with the provisions of the Development Plan.

9. Conclusion

This application seeks permission for a vertical core well for geological exploration purposes. INEOS has undertaken a thorough assessment of this potential well site. Minerals can only be drilled where they are found and therefore, the fundamental requirement for identifying any suitable site to construct a wellsite and to drill a vertical core well is the presence of organic-rich shales of Carboniferous age. When existing data has identified potential hydrocarbon-bearing strata, INEOS has undertaken negotiations with willing landowners on potential sites which avoid environmental constraints, satisfy the operational requirements for constructing and securing a wellsite and drilling a vertical core well, and which are capable of mitigation measures to avoid potential significant environmental impacts upon the local community. INEOS is confident that the planning application has demonstrated the chosen site will:

- Limit the adverse effects upon the character and appearance of the surrounding rural landscape and the visual amenity of local residents and visitors;
- Maintain low levels of noise, bearing in mind the rural nature of the site;
- Make appropriate arrangements for the management of waste fluids;
- Ensure that there are no unacceptable adverse impacts on human health and safety, particularly in regard to groundwater, pollution controls and light
- Limit impacts on the community, recreation and amenity value of the area to an acceptable level; and
- Satisfy highway safety requirements with regard to all road users.

Government policy fully supports the principle of exploring for and recovery of the nation's hydrocarbon reserves wherever possible, providing that environmental issues are identified and appropriate mitigation measures are established. It is for the industry to demonstrate that adverse environmental effects have been either removed altogether or reduced to a level acceptable to the local community and relevant statutory bodies and agencies.

This Statement has demonstrated how the proposals have taken into account and accord with national and local planning policies. National planning policy has shown there to be a need for the development of energy infrastructure including the extraction of our native fossil fuels to ensure security of supply, support local and national economies and address issues relating to the scarcity of supply.

In addition to this Statement, a number of environmental studies have been carried out which support the application and conclude that there would be no detrimental impact on the local environment. The design has evolved to take into account the information and feedback received during the consultation process and mitigation measures have been incorporated into the application where necessary.

This Planning Statement and the accompanying documents submitted as part of or with the application demonstrate that noise, pollution, waste disposal, safety, access, traffic visual impact and ecology will not cause an unacceptable impact on the surrounding area or community.

The analysis in this report has demonstrated that:

- The development accords with the relevant policies of the Development Plan;
- The development accords with the principles of National Policy and Guidance, being a material consideration to be afforded significant weight; and
- There are no other material considerations which indicate that the development should not be approved.

It is therefore concluded that the application should be approved, subject to the conditions set out at Appendix 4.

Appendix 1
Screening Request

INEOS Shale

Environmental Impact Assessment Screening Report

Application to Drill a Vertical Core Well
Land adjacent to Common Road, near Harthill

PEDL 304

March 2017

Contents

1. Introduction

This report has been prepared in support of a request to Rotherham Metropolitan Borough Council (**"RMBC"**) to adopt a screening opinion to determine whether INEOS Upstream Limited's ("**INEOS**") application for a temporary planning permission to drill a vertical core well to explore for shale gas ("**Proposed Development**") on land adjacent to Common Road, located approximately 0.7 km to the east of the settlement of Harthill, Rotherham ("**site**") constitutes Environmental Impact Assessment (EIA) development. RMBC is the Mineral Planning Authority ("**MPA**") for the site.

This report reflects the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011[1] as amended (**"EIA Regulations"**) and in accordance with Regulation 5 of the EIA Regulations, this report contains:

- A plan sufficient to identify the land;
- A brief description of the nature and purpose of the development and of its possible effects on the environment; and
- Other information the applicant wishes to provide.

1.1 Requirement for EIA

In order to determine whether the Proposed Development is 'EIA development', regard must be had to the EIA Regulations and supporting Planning Practice Guidance (**"PPG"**)[2].

EIA development falls into two Schedules of the EIA Regulations. EIA is mandatory for developments listed within Schedule 1. Schedule 2 developments require EIA if they would be *"likely to have significant effects on the environment by virtue of factors such as its nature, size or location*".

In deciding whether a Schedule 2 development is EIA development, Regulation 4(6) states:

> *"Where a local planning authority … has to decide under these Regulations whether Schedule 2 development is EIA development the authority … shall take into account in making that decision such of the selection criteria set out in Schedule 3 as are relevant to the development."*

In order to allow the MPA to determine the need for EIA, this report provides a description of the site and Proposed Development, a review of the EIA screening criteria based on the EIA Regulations and the PPG, a completed EIA Screening Checklist, a site location plan in Appendix 1, and a designation plan in Appendix 2.

[1] SI 2011/1824 as amended by the Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2015 (No. 660)
[2] DCLG, 2015, online access: http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment/

2. Site and Proposed Development

2.1 Site Context

2.1.1 Site Description

It is anticipated that the core well site would be under 1.5 hectares (the access track to the nearest adopted road would be in addition to this). The site location plan presented in Appendix 1 illustrates the land holding currently being considered within which the core well site would be located. The proposed site access from the public highway is also illustrated in the plan.

2.1.2 Proposed Development

The Proposed Development will comprise five phases:

Stage 1: Site Development and Establishment – approximately 3 months
Stage 2: Drilling, Coring and Testing – approximately 5 months
Stage 3: Establishment as Listening Well and Suspension – approximately 1 week with the suspended well in place until restoration
Stage 4: Undertaking Listening Well Operations – up to 3 weeks as required
Stage 5: Abandonment and Restoration – approximately 1.5 months

The overall duration of the Proposed Development would be a maximum of five years which accords with the length of INEOS' initial Petroleum Exploration and Development Licence (**"PEDL"**) term, as awarded by the Oil and Gas Authority. After five years the site will be restored to its existing condition.

Stage 1 – Site Development and Establishment

Activities during Stage 1 would include:

- **Mobilisation**: Any necessary pre-commencement surveys would be undertaken, including geotechnical surveys, site investigation surveys, road condition surveys and environmental surveys. The construction plant, including generators, site offices, welfare cabins and stores would be brought to site and site personnel would be inducted. The construction compound would be fenced for security and to delineate the proposals.

- **Access tracks**: The junction to the adopted road would be created/ improved ensuring that visibility splays provide safe access and egress from the site and any necessary passing places are installed. The access track would be lined with a geotextile membrane and covered with aggregate to prevent damage to the underlying soil during site construction and subsequent site works. An area for parking on the site would also be developed to ensure all necessary vehicles were within the site boundary.

- **Site Clearance**: The site would cover approximately 120 m x 95 m. Vegetation would be carefully removed from the site and hedges trimmed subject to any ecological considerations relating to timing and method of working. The topsoil would be removed (approximately top 300 mm) and any subsoil necessary to create a level site surface. Screening bunds would be created within the perimeter of the site (approximately 2 m high) ensuring appropriate storage of this

soil for restoration of the site and to act as visual and noise screening. The site hardstanding area (drill pad) would be constructed within the central site area.

- **Site Development and Lining**: A liner would be installed across the site and up the foot of the earth bunds. The geotextile and high density polyethylene (HDPE) liners would be laid over this area by licensed contractors to ensure an impermeable site lining, preventing any potential spills or surface water from percolating through the site floor into the underlying soil. These liners would be anchored in place, and the integrity of the liner tested. Any subsequent perforations of the liner (for example drilling of boreholes) would be heat sealed to the surrounding material (borehole casing). The liner would be covered by sub-base and aggregate to at least 450 mm below the finished site surface.

- **Development of drainage:** A perimeter water storage pipe (900 mm or similar) would be laid within a ditch at the foot of the topsoil bunds, feeding to a sump. All surface runoff from the site would therefore be retained on the site and removed by a licensed waste contractor. Drainage from the central rig bund would feed into a separate bunded tank for removal and treatment.

- **Development of site accommodation:** Cabins would be placed on the perimeter of the site, over the top of the perimeter water storage pipe trench. These would be stacked up to 2 cabins high to provide further screening as appropriate.

- **Installation of monitoring boreholes**: Groundwater monitoring boreholes would be installed towards the edge of the site, in locations and to depths to be agreed with the Environment Agency. These would be installed under permitted development rights and do not form part of this planning application.

- **Construction of Well Cellar**: A well cellar would be excavated to form a containment area from which the well would be drilled. This is constructed from a reinforced concrete ring approximately 2.5 m diameter and 3 m deep. The impermeable membrane would be incorporated into the cellar construction to maintain the integrity of the site. A conductor would be set in the top section of the well bore and cemented in place using a conductor installation rig (<10 m high) drilling with a mixture of air and water. Drill cuttings from the conductor installation would be removed from site.

- **Demobilisation**: The soil bunds would be covered with a grass seeded geotextile blanket for stability and to minimise the visual impact of the bunds, and security measures and lighting would be established around the site. Permanent lighting would be angled to light the site floor, entrance and cabins only and would be shielded and low intensity to reduce light spill. Construction equipment would then be demobilised in preparation for mobilising the main drilling rig and equipment.

Activities in Stage 1 would take place over approximately 3 months, working 0700-1900 Monday to Friday and 0700 – 1300 on Saturday, with no working on Sunday or Bank/Public Holidays unless in an emergency or agreed otherwise with the MPA.

Stage 2 – Drilling Coring and Testing

Activities during Stage 2 would include:

- **Mobilisation:** The drill rig and associated equipment including drill pipe, drill water and mud pumps would be brought to site. Temporary mobile lighting would be installed (<9 m mobile towers) to provide additional lighting to the drill floor as needed.

- **Drilling, Coring and Testing:** The well would be drilled to approximately 2,800 m using a drill rig of maximum 60 m rig height. The rig and ancillary equipment including pumps would be selected to be appropriate for the site and proposed well and to ensure that environmental impacts associated with drilling (in particular, noise levels generated) would be acceptable at the site. Cores of the target formations and sidewall cores would be removed using standard wireline coring equipment and the well would be logged during drilling. The cores would be sent from the site for tests in a laboratory to identify the geological characteristics of the core and its gas-producing properties. There will be no flow testing of the well (i.e. no gas will be flowed to surface for metering). A pressure transient test[3] (PTT) will be undertaken following the drilling, the 5 month duration for both activities assumes this activity follows immediately after the core well drilling is completed. There is potential there could be a short period after the drilling rig has been removed from site prior to the PTT starting. The purpose of the PTT is to establish the reservoir properties such as whether the target zone is over pressured (which is encouraging for shale gas extraction) or under pressured (which is less encouraging for shale gas extraction). The main rig would be removed and a workover rig of a maximum 32 m height will be brought onto site, with ancillary equipment including a cement unit. The cased well would be perforated and a packer[4] lowered into the well from the workover rig. A maximum of 10m^3 potassium chloride (salt)[5] (KCl) solution (2-4 %) would be squeezed into the formation (approximately 25cm) at the target zone at pressure. This would take a maximum of two hours. The PTT test area would be closed off using valves and pressure within the isolated area monitored for a period of up to two weeks. At the end of two weeks, the plug would be removed. A small quantity of the KCl solution within the wellbore could return to surface, and any that does return would be stored for removal by a licensed waste contractor. This process could be repeated for up to two additional target zones (making up a total testing period of up to 2 months).

- **Demobilisation:** The workover rig and ancillary equipment would be removed from site in preparation for Stage 3, and waste from the drilling and coring process (for example drill cuttings and waste drill muds) would be removed from site by a licensed contractor for treatment and disposal or reuse.

Standard well safety equipment would be present on the site during drilling, including a blow-out preventer, vent for emergency venting of gas encountered and methane monitoring. An emergency plan would be in place as well as standard pollution prevention measures including bunding, spill kits and training of staff. Operations on the site would follow Standard Rules as agreed with the Environment Agency.

[3] This test is also referred to in industry as a Diagnostic Formation Injection Test (DFIT), Leak off test, formation propagation test, formation injectability test and pressure test.

[4] A packer is a device that can be run into a wellbore with a smaller initial outside diameter that then expands externally to seal the wellbore

[5] KCl is a “sodium free” salt also used in food, fertilisers and medical applications.

All drill muds would be chosen to be appropriate for the anticipated geology and would be compliant with Environment Agency's published Waste Management Plan WMP3 and permitted by the Environment Agency in advance of use.

Activities in Stage 2 would take place over approximately 5 months. Drilling would take place over 24 hours to maintain the stability of the well and minimise the drilling period. Mobilisation and demobilisation, and routine deliveries would only take place 0700-1900 Monday to Friday and 0700 – 1300 on Saturday, with no working on Sunday or Bank/Public Holidays unless in an emergency or agreed otherwise with the MPA. During PTT, works will only take place during 0700-1900 Monday to Friday and 0700 – 1300 on Saturday with no working on Sunday or Bank/Public Holidays unless in an emergency or agreed otherwise with the MPA.

Stage 3 – Establishment as Listening Well and Suspension

During Stage 2, running and cementing the reservoir casing to surface is completed using the drilling rig (this would take 2-3 days). In order to suspend the well, in advance of listening well activities, a flange and well monitoring pressure gauge would be fitted to the well and it would be sealed using a wellhead Christmas tree, or wireline blow out preventer. A steel protector cage (approximately 2 m x 2 m x 2 m) would be fitted over the wellhead. The remaining site cabins would be removed from site.

Once the suspended well is in place, routine visits to the site would be made to maintain and check the site. These checks would include:

- Integrity of pipework and site surface:
- Integrity of fencing and security arrangements;
- Site drainage and containment, including tanks; and
- Wellhead structure and pressure monitoring.

The site would be unmanned once the well is suspended, but site security including CCTV would remain. If for any reason maintenance of the well is required during the suspension period the workover rig (max 32m) may be brought on site if necessary.. Such work over activities would not normally exceed a month period and would be agreed with the Mineral Planning Authority in advance.

Activities to suspend the well (once the rig is removed from site) and maintenance visits would take place 0700-1900 Monday to Friday and 0700 – 1300 on Saturday, with no working on Sunday or Bank/Public Holidays, unless in an emergency or agreed otherwise with the MPA.

Stage 4 – Undertaking Listening Well Operations

Activities during Stage 4 would only take place to undertake baseline monitoring or when another well is hydraulically fractured, subject to such a consent for that separate activity being granted within the period of planning consent for this well. Activities would include:

- Mobilisation of wireline truck, 30 tonne mobile crane (approximate 35 m maximum height), mast, elevated work platform and temporary welfare facilities.
- Placement of a string of geophones (small seismic receivers) run on wireline inside the reservoir casing for the duration of the listening operations
- Demobilisation

Stage 4 operations would last for a maximum of 3 weeks and would result in no perceptible noise or vibration at the nearest receptors. There would be no introduction of

any chemicals into the well, or requirement to re-work the well using a rig. Operations would take place 0700-1900 Monday to Friday with no working on Saturday, Sunday or Bank/Public Holidays, unless in an emergency or agreed otherwise with the MPA.

Stage 5 - Abandonment and Restoration

Activities during Stage 5 would include:

- **Plugging and Abandoning the Well**: Decommissioning of the well would be undertaken in accordance with Oil and Gas UK Guidelines on Well Abandonment and according to an abandonment plan to be agreed with the Environment Agency, Health and Safety Executive (HSE) and an independent Well Examiner. The wellhead would be removed and casing/ cement cut to 3 m below ground level to allow restoration of the site to agriculture. The 32 m (max) workover rig would be required during well abandonment for a short period during the 1 month abandonment and restoration stage.

- **Removal of Residual Site Equipment and Site Surfacing**: The site would be fenced with temporary Heras fencing to allow the permanent fencing and security fencing to be removed. The concrete pad and cellar would be broken for removal by a licensed waste contractor, and aggregate, drainage pipework and other infrastructure would be removed from the surface and reused where permitted. Any potentially contaminated equipment would be removed from the site prior to removal of the impermeable geotextile/ HDPE lining. All site equipment and infrastructure would be reused or recycled where possible, or alternatively removed from site by licensed waste contractors as appropriate.

- **Restoration of Ground:** The soils stored in bunds would be used to level and restore the site surface. Field drainage would be re-developed if required. The site would be reseeded and prepared for aftercare as agricultural land. Access tracks and road amendments (junction amendments or passing place improvements) would also be restored as agreed with the landowner and Highways Authority, or retained for continued use, subject to any necessary further planning consent.

- **Aftercare:** An aftercare plan would be put in place as a condition of planning consent, to ensure appropriate aftercare of the site as agricultural land.

Activities in Stage 5 would last approximately 1.5 months and take place 0700-1900 Monday to Friday and 0700-1300 on Saturday, with no working on Sunday or Bank/Public Holidays unless in an emergency or agreed otherwise with the MPA. Aftercare would take place within the landowner's existing management schedule.

3. Screening Assessment

3.1 Introduction

The following should be considered in determining whether the Proposed Development constitutes EIA development:

- If the Proposed Development is of a type listed in Schedule 1;
- If not, whether:
  - it is listed in Schedule 2; and
  - any part of it is located within a sensitive area; or
  - it meets any of the relevant thresholds and criteria set out in Schedule 2; and / or
  - it would be likely to have significant effects on the environment.

These points are explored further in this section with reference to the EIA Regulations and supporting PPG.

3.2 Schedule 1 Projects

EIA is mandatory for projects listed in Schedule 1 of the EIA Regulations. Schedule 1 developments are large scale projects for which significant effects would be expected and comprise developments such as new airports and power stations.

In respect of the Proposed Development, Schedule 1, Paragraph 14 would only apply where "*Extraction of natural gas … for commercial purposes where the amount extracted exceeds 500,000 cubic metres per day in the case of gas …"*

The Proposed Development would not involve gas extraction and is therefore not of a type listed in Schedule 1.

3.3 Schedule 2 Projects

The development proposed is of a type listed in Schedule 2 development which depends on the location of the development (i.e. if it is within a sensitive area) and/or whether it meets any of the relevant thresholds or criteria in Column 2.
Sensitive Areas are defined in the EIA Regulations as:

- Sites of Special Scientific Interest (SSSI) and European Sites;
- National Parks, the Broads, and Areas of Outstanding Natural Beauty; and
- World Heritage Sites and Scheduled Monuments.

In certain cases, local designations which are not included in the definition of sensitive areas, but which are nonetheless environmentally sensitive, may also be relevant in determining whether an assessment is required. Furthermore, in considering the sensitivity of a particular location, regard should also be had to whether any national or internationally agreed environmental standards (e.g. air quality) are already being approached or exceeded.

The Proposed Development falls under Column 1 of Category 2, 'Extractive Industry', of Schedule 2 of the EIA Regulations of which sub-paragraphs 2(d) 'deep drillings' or 2(e) 'surface industrial installations for the extraction of … natural gas' are relevant.

The Proposed Development site is not located in a sensitive area and therefore the thresholds set out next to the relevant sub-paragraph under Column 1, Category 2, Schedule 2 of the EIA Regulations should be applied.

The threshold for a 'deep drilling' is likely to be an area exceeding 1 ha whilst the threshold for a 'surface industrial installation' is an area exceeding 0.5 ha. The Proposed Development covers an area of more than 1 ha, including the access track and so exceeds both thresholds. However, it is below the indicative criteria and threshold of this type of development as set out in the PPG (see Section 3.6).

Therefore, when considering whether the Proposed Development is EIA development, the MPA must consider the selection criteria set out at Schedule 3 of the EIA Regulations.

3.4 Schedule 3

Schedule 3 of the EIA Regulations set out selection criteria which relate to specific matters, including: the characteristics of the development; the location of the development; and the characteristics of the potential impact. These factors should be taken into account as part of the screening process and are set out below:

3.4.1 Characteristics

- The size of the development;
- The cumulation with other development;
- The use of natural resources;
- The production of waste;
- Pollution and nuisances; and
- The risk of accidents, with specific regard to substances or technologies used.

3.4.2 Location

- The existing land use;
- The relative abundance, quality and regenerative capacity of natural resources in the area; and
- The absorption capacity of the natural environment.

3.4.3 Potential Impact

- The extent of the impact (geographical area and size of the affected population);
- The transfrontier nature of the impact;
- The magnitude and complexity of the impact;
- The probability of the impact; and
- The duration, frequency and reversibility of the impact.

3.5 Consideration of Cumulative Effects

The EIA Regulations require consideration of a proposed development cumulatively with other development. Guidance contained in the PPG regarding EIA Screening includes the topic '*When should Cumulative Effects be Assessed*?'[6] This states that:

> *"each application (or request for a screening opinion) should be considered on its own merits. There are occasions where other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development. The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development."*

With regard to this proposal, no potentially cumulative schemes have been identified. INEOS proposes to seek planning consent for other similar vertical core well sites within its PEDL areas in the East Midlands. Applications for each site would be assessed on their own merits, against the relevant development plan and other material considerations. INEOS has a current vertical core well exploration site (in excess of 10km) within Derbyshire Mineral Planning Authority's area that is being progressed to a planning application. This will not result in cumulative effects with this proposed site. This is due to the distance from the current site, meaning, for example, receptors would not be affected by noise from two different sites, and the same local road network would not be impacted by vehicles accessing two different sites. Screening for future sites would be required to take the same considerations into account, having regard for the future baseline in the area.

3.6 Planning Practice Guidance

Paragraphs 057 and 058 of PPG provide guidance to help determine whether significant effects are likely. In general, the more environmentally sensitive the location, the lower the threshold will be at which significant effects are likely. Table 1 sets out indicative criteria and thresholds identified in the PPG along with some of the issues that are most likely to need to be considered in determining whether a development is likely to be EIA development.

[6] Paragraph: 024 Reference ID: 4-024-20140306

Table 1: Planning Practice Guidance Indicative Screening Criteria

Development type	Indicative criteria and threshold	Key issues to consider
(d) Deep drilling, in particular: (i) geothermal drilling; (ii) drilling for the storage of nuclear waste material; (iii) drilling for water supplies; with the exception of drilling for investigating the stability of the soil.	Drilling operations involving development of a surface site of more than five hectares (ha).	Regard should be had to the likely wider impacts on surrounding hydrology and ecology.
(e) Surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale.	Development of a site of 10 ha or more or where production is expected to be more than 100,000 tonnes of petroleum per year.	Scale of development, emissions to air, discharges to water, the risk of accident and the arrangements for transporting the fuel.

3.7 Review of Screening Criteria

Table 2 sets out a review of all of the above criteria and requirements and specifically addresses the Proposed Development at the site.

Table 2: Screening Assessment for Proposed Development at PEDL304 Land adjacent to Common Road, near Harthill

SCREENING CRITERIA	PROPOSED DEVELOPMENT
1. CHARACTERISTICS OF THE DEVELOPMENT	
(a) Size of the development	
Will the development be out of scale with the existing environment?	The Proposed Development is temporary and covers a site of approximately 1 - 2ha. The site is located on intensively managed agricultural land. Throughout the 5 year period there will be short durations where the drilling and work over rigs and cranes (worst case being the <60 m mast height drilling rig on site for approximately 3 months). With the exception of these temporary periods, no feature of the proposals would be unusual or prominent within an agricultural landscape.
Will it lead to further consequential development or works?	No. The Proposed Development would be a discrete proposal and includes all necessary works, including access. The proposal will include provisions for restoration back to the current use.
(b) Accumulation with other development	
Are there potential cumulative impacts with other existing development or development not yet begun but for which planning permission exists?	No potentially cumulative schemes have been identified.
Should the application for this development be regarded as an integral part of a more substantial project? If so, can related developments which are subject to separate applications proceed independently?	No. The Proposed Development would be a discrete proposal and could proceed independently. Other similar proposals for vertical core wells are and will be brought forward for planning applications across the East Midlands. However, these are all independent, discrete projects and would be assessed on their own merits.
(c) Use of natural resources	
Will construction or operation of the development use natural resources such as land, water, material or energy, especially any resources which are non-renewable or in short supply?	Landtake would be approximately 1 to 2 ha of agricultural land. This would be restored to agricultural use and current agricultural land quality at the end of the proposed activities. Minor volumes of water would be required for site construction (e.g. laying foundations) and sanitary purposes. The drilling and PTT activities would use approximately 330 cubic metres (m^3) of water. Water would be brought to the site as required by road tankers. The construction of the site would require approximately 9,000 tonnes of aggregate to be brought to site by road. This would be removed upon restoration and reused where permitted. On-site energy needs would be met through mobile diesel generators.
(d) Production of waste	
Will the development produce wastes during construction or operation or decommissioning?	Wastes from the proposals would include waste water and materials associated with drilling. Drilling mud and rock cuttings would be collected in tanks which would be located on the concrete pad and transported from the site by road for disposal at an authorised waste disposal facility. All waste water, including surface water, would be contained on-site and removed by tanker. Clean surface water will be collected separately from waste water and if it is appropriate for use within the site operations this will be done. All extractive wastes produced at the site will be managed under the Environment Agency's

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	published Waste Management Plan WMP3. Given that this development is for a core well without any well stimulation the production of naturally occurring radioactive material (NORM) is not expected.
(e) Pollution and nuisances	
Will the development release any pollutants or any hazardous, toxic or noxious substances to air?	On-site generators and the drilling rig (both diesel powered) would produce temporary, localised emissions to air, likely to include NOx, SOx, PM10 and 2.5, CO and VOCs. Generators would be sized appropriately for site energy requirements and would be efficient, with emissions reduced as far as possible. These would be similar to generators on construction sites. Emissions from the rig would also be reduced through choice of an efficient rig appropriate for the site, with minimal emissions. Generators would be present on the site for approximately 6 months at any one time. The drilling rig will be on site for less than 3 months would be the longest duration a rig is on site. Road traffic associated with the Proposed Development would also produce emissions to air during the temporary construction and drilling phases, similar to any construction site. There would be no operational flaring or venting during the proposed activities. The scale of the proposed activities is such that significant effects to air quality are not anticipated. There are no Air Quality Management Areas in the vicinity of the site.
Is there a potential risk from leachates or escape of wastes of other products/by-products that may constitute a contaminant in the environment?	Wastes from the Proposed Development would include waste water and materials associated with the drilling and pressure transient test. Surface water would be retained within the site surface water drainage network and disposed of off-site by a licensed waste contractor. Drilling and PTT waste would be stored in bunded tanks on site and disposed of by licensed waste contractors. Drilling mud and rock cuttings would be collected in tanks located on the concrete pad and transported from the site by road for disposal at an authorised waste disposal facility. It is anticipated that operations would be permitted under Standard Rules Permit (SR2015 No1) for a mining waste operation (the management of extractive wastes) specifically with regard to ground, groundwater and surface water protection. All extractive wastes produced at the site will be managed under the Environment Agency's published Waste Management Plan WMP3. Given that this development is for a core well without any well stimulation the production of naturally occurring radioactive material (NORM) is not expected.
Will the development cause noise and vibration or release of light, heat, energy or electromagnetic radiation?	Noise during the construction and drilling phases would be temporary. An Environmental Report including a noise appraisal will be completed as part of the planning application. This will include detailed noise modelling using SoundPLAN software. The noise assessment will demonstrate accordance with the following assessment criteria: • During the site development and establishment stage the site will achieve a 65dB LAeq criteria for construction noise (as a category A project under British Standard 5228: 2009 +A1:2014 "code of practice for noise and vibration control on construction and open sites"). This will be achieved through the application of best practice noise control during construction.

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	• During the 24 hour drilling and coring operations, the site will accord with the daytime, evening and night time noise thresholds set out in Planning Practice Guidance (PPG) on Noise from Mineral Extraction. The night time noise of the project, which is considered likely to be the lowest threshold to be met, will not exceed 42dB(A) LAeq,1h (free field). The daytime and evening baseline plus 10dB(A) threshold will be targeted and the project will not exceed the regulatory limit of 55dB(A) LAeq, 1h (free field). Should the modelling identify effects above the criteria set out in the PPG, additional mitigation will be identified and incorporated into the design of the proposals submitted for planning. Options available for mitigation include the following: • maximising the site layout to reduce noise impacts including the orientation and height of cabins and bunds; • orientating noise equipment away from receptors; • specification of low noise equipment (e.g. generators); • enclosing equipment to minimise noise emissions at source (e.g. enclosing drilling mud pumps); and • additional screening around the site boundary INEOS recognise and expect that the planning application submitted will show how the proposals can achieve the PPG criteria, taking in to account embedded mitigation. INEOS will be targeting the lowest noise emissions that achieve compliance whether it is daytime, evening or night time. Based on industry precedent and current understanding of the site, INEOS is confident that the development will meet the regulatory thresholds and therefore have no significant noise impacts. Groundborne vibration is expected to be imperceptible at distances of greater than 20 m from the drill rig. The closest residential properties are over 690 m from the proposed site and access track. Ground-borne vibration at these receptors would be considerably lower and certainly not perceptible. Lighting would be required in the site and on the rig. All lighting would be carefully directionally controlled to limit environmental effects. No significant effects are anticipated. Lighting would be designed carefully in accordance with relevant British Standards and Institute of Lighting Professionals (ILP) (2011) Guidance Notes for the Reduction of Obtrusive Light.
Will the development lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	There are no anticipated significant effects. The wellsite and any new access track will be lined using a geomembrane. This will prevent potential groundwater pollution from spillages and the handling of drilling fluids and cuttings. The site will be constructed using a central rig bund drainage system which will be segregated from the remainder of the site to prevent potential contamination of the surrounding surfaces in the event of a spillage. Following the drilling operations, the aggregate and concrete would be fully removed from the site before the impermeable liner is removed.
(f) Risk of accidents, having regard in particular to substances or technologies used	
Will there be a risk of accidents during construction or	A risk of accidents exists however standard safety measures would be implemented. The health

SCREENING CRITERIA	PROPOSED DEVELOPMENT
operation of the development which would have effects on people or the environment?	and safety risks of the proposals would be managed as required by the Borehole Sites & Regulations 1995, the Management of Health & Safety at Work Regulations 1992, the Construction (Design & Management) Regulations 2007, the Offshore Installations & Wells (Design & Construction etc.) Regulations 1996 and the Applicant's HSE Management System.
Will the development involve use, storage, transport, handling or production of substances or materials which could be harmful to people or the environment (flora, fauna, water supplies)?	All chemicals, fuels and waste products from the proposals would be stored on site in suitable containers in accordance with regulations and best practice. All chemicals for use in the well would be compliant with the conditions of the Environment Agency's published Waste Management Plan WMP3 and permitted by the Environment Agency for this Proposed Development. Fuels for the on-site generators and rig would be stored in dedicated areas in bunded tanks, and fuelling would be undertaken by competent staff in areas with appropriate bunding in case of drips or spills. Spill kits would be in place. Waste would be disposed of in appropriately licenced waste facilities. Significant effects are not anticipated.
Other characteristics	
Potential physical changes (topography, land use, changes in water bodies etc.) from construction, operation or decommissioning of the development?	No significant physical changes are anticipated. The Proposed Development includes a programme of restoration and aftercare to return the site to its pre-development condition.
2. LOCATION OF THE DEVELOPMENT	
(a) Existing land use	
Are there existing land uses on or around the location which could be affected by the development, e.g. residential, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying?	The site is adjacent to an area of woodland. Agricultural land, woodland and residential properties and villages are located in the wider areas surrounding the site. Harthill Footpath No 23 runs to the immediate east of the site, and Harthill Footpath No 8 runs close to the site, to the north. From public domain documents and maps available from the Coal Authority, coal mining activity is known to have taken place in the subsurface of the site. Mine abandonment plans have been obtained from the Coal Authority to chart the extent of known and probable mining in the vicinity of the proposed well site and to ensure safe interaction with coal seams and abandoned mine workings. The Coal Authority regulates and ensures safe interaction with coal resource and abandoned coal workings. Prior to drilling the well, INEOS is required to liaise with the Coal Authority (amongst other regulators) and all operations will be carried out under a Deep Energy Access Agreement issued by the Authority.
Is the development located in a previously undeveloped area where there will be loss of greenfield land?	There would be no permanent loss of greenfield land associated with the development. The Proposed Development is temporary and includes a programme of restoration and aftercare.

SCREENING CRITERIA	PROPOSED DEVELOPMENT
(b) Relative abundance, quality and regenerative capacity of natural resources in the area	
Are there any areas on or around the location which contain important, high quality or scarce resources which could be affected by the development? • groundwater resources • surface waters • forestry • agriculture • fisheries • tourism • minerals	The site is not located within a groundwater Source Protection Zone. The nearest surface watercourses (two surface water drainage ditches) are located over 480 m to the southwest and to the south of the site. There is also a groundwater well located over 460 m to the west of the site. There are no statutory ecological designations within or adjacent to the site. Loscar Common Plantations, adjacent to the east and south of the site, and Loscar Wood, 500 m to the east, are areas of 'known interest outside protected sites'. The nearest statutory designations to the site are two SSSI: Ginny Spring Whitwell Wood and Crabtree Wood, located approximately 1.8 km southeast and 2.2 km southwest of the site respectively. Two further SSSI are located over 3.5 km to the northeast of the site: Anston Stones Wood (also a Local Nature Reserve) and Lindrick Golf Course. The surrounding area includes woodland and agriculture although the Proposed Development would not affect these activities.
(c) Absorption capacity of the natural environment	
Are there any areas on or around the location which are protected under international or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the development?	There are no statutory ecological designations within or adjacent to the site. Loscar Common Plantations, adjacent to the east and south of the site, and Loscar Wood, 500 m to the east, are areas of 'known interest outside protected sites'. The nearest statutory designations to the site are two SSSI, Ginny Spring Whitwell Wood and Crabtree Wood, located approximately 1.8 km southeast and 2.2 km southwest of the site respectively. Two further SSSI are located over 3.5 km to the northeast of the site: Anston Stones Wood (also a Local Nature Reserve) and Lindrick Golf Course. The site is within the Impact Risk Zones (IRZ's) for these same two SSSI, Ginny Spring Whitwell Wood and Crabtree Wood. In accordance with the Natural England Guidance Document (SSSI Impact Risk Zones User Guidance, March 2016) a review of the project against the 'reasons for concern' for Oil and Gas exploration projects has been undertaken. It is considered that the proposed development parameters as described within this document do not present a risk of significant impacts in relation to the defined 'reasons for concern'.. The nearest historic or cultural heritage features are Grade II listed buildings located over 1 km west of the site along Union Street in Harthill. The closest of these is Walker's Butchers/Threshing Barn. A number of Grade II listed buildings are also located over 1.5 km to the northeast of the site in the village of Thorpe Salvin (including 7 and 9 Worksop Road and the Church of St Peter). The Harthill Conservation Area is approximately 1 km to the west of the site and the Thorpe Salvin Conservation Area is approximately 1.5 km to the northeast of the site. No Scheduled Monuments are located within 1 km of the site; the closest is Thorpe Salvin Hall, located over 1.6 km to the northeast, which is also Grade II listed. The Proposed Development has been designed with regard for these nearby sensitivities. The location of the site has been chosen to allow screening of receptors by vegetation and landform, with distance also minimising impacts to the setting of cultural heritage receptors. Ecological receptors would be protected by the pollution prevention measures built into the site, as well as the

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	temporary nature of the Proposed Development. There would be no requirement for felling of trees or hedges to create the site, so there would be no direct loss of any features which may be used by populations within the designated areas. There may need to be some hedgerow removal in order to gain site access. This will be managed to avoid impacts on breeding birds. The drilling rig would be up to 60 m high, with the workover rig and crane being up to 32m and 35 m high respectively. However, these would only be in place for a temporary period and would be screened by the surrounding landform. Therefore there is not anticipated to be a significant impact on setting of ecological, landscape or cultural heritage features.
Are there any other areas on or around the location which are important or sensitive for reasons of: • wetlands; • coastal zones; • mountains and forest areas; • nature reserves and parks; • Special Protection Areas and Special Areas of Conservation; • Areas in which environmental quality standards laid down in EU legislation have already been exceeded; • Densely populated areas; • Landscapes of historical, cultural or archaeological significance.	See 2 (c) *Absorption capacity of the natural environment* above.
Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected?	There are no ecological designations on or directly adjacent to the site. The site is intensively managed for agricultural purposes and any features of biodiversity interest are likely to be located at field edges. Loscar Common Plantations to the east and south of the site are 'areas of known interest outside protected sites'. The site location has been offset from these features and detailed design of the site layout will seek to minimise light spill into the woodland. An Environmental Report, containing an ecological assessment will be submitted with the planning application.
Are there any inland, coastal, marine or underground waters on or around the location which could be affected?	The site is not located within a groundwater Source Protection Zone. The nearest surface watercourses (two surface water drainage ditches) are located over 480 m to the southwest and to the south of the site. There is also a groundwater well located over 460 m to the west of the site.
Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources?	The site is not located within a groundwater Source Protection Zone.
Are there any areas or features of high landscape or scenic value on or around the location which could be affected?	The site falls within an Area of High Landscape Value. However, no significant effects on views are anticipated. The drilling rig could be up to 60 m high and the work over rig and crane would be up to 32 m and 35 m respectively. However this would only be in place for short temporary periods. Some screening will be provided by bunds (and cabins during drilling) at the site boundary. An Environmental Report including a landscape and visual appraisal will be completed as part of the planning application.

SCREENING CRITERIA	PROPOSED DEVELOPMENT
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected?	An existing public footpath (Harthill 23) is situated to the east of the site, alongside the neighbouring woodland area. This footpath continues in to the north of the site (joining Harthill 8), leading west to Harthill, and to the east/southeast of the site towards Packman Lane. Impacts on the users of the Public Right of Way (PROW) (i.e. their amenity) would be reduced by the bunds at the site boundary and managed through standard procedures and possibly a diversion (subject to appropriate permits). The closest road to the site is Common Road which would be used to access the site. Vehicle movements to and from the site would include deliveries of water, cement, drilling materials and other supplies, and removal of fluids generated and waste for disposal. These transport movements would be made during the working day with all but essential deliveries being made during daylight hours. Only in exceptional circumstances which were operational or health and safety led, would deliveries be made at night. A Traffic Management Plan (TMP) will be prepared that will route vehicles along the most appropriate local roads so as to avoid more sensitive receptors wherever possible. Staff would be transported to site by a minibus to minimise private car use to site. During construction (Stage 1) for approximately half of the stage there would be fewer than 10 HGV (vehicles >7.5 tonnes) movements per day, equating to 5 HGVs entering and leaving the site. On up to 40 days there would be more than 10 HGV movements, including a short period of time (approximately 3 weeks) with between 50 and 60 movements per day (5 per hour over a 12 hour day) when aggregate is brought to surface the site. During drilling, coring and PTT (Stage 2), or if a workover is required, again there would be fewer than 10 daily HGV movements for approximately half of the period, with periods of between 10 and 42 HGV movements daily (2-4 per hour over a 12 hour day) to allow for mobilisation and demobilisation of drilling and testing equipment or the workover rig. Over the course of the drilling, coring and pressure transient test there could be up to 38 movements of vehicles >32 tonnes as rigs are mobilised and demobilised. There would be no more than 6 of these movements daily. Stages 3 to 5 would have less associated traffic movements.
Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected?	As above. The relatively low levels of traffic generated, short term nature of the most intensive activities and existence of a TMP, which is likely to include measures such as escort vehicles and traffic management personnel to facilitate the unimpeded movement of vehicles to the site. The TMP would reduce the risk to nearby routes using known and understood traffic management techniques.
Is the development in a location where it is likely to be highly visible to many people?	Significant effects on views are not anticipated. The drilling rig would be the most visible element during the proposed development at up to 60 m high. However this, like the smaller work over rig (32 m) and 30 t crane (35 m), would only be in place for a temporary period. The bunds around the site will limit views of the site. An Environmental Report including a landscape and visual appraisal will be completed as part of the planning application.

SCREENING CRITERIA	PROPOSED DEVELOPMENT
Are there any areas or features of historic or cultural importance on or around the location which could be affected?	The nearest historic or cultural heritage features are a number of Grade II listed buildings over 1 km west of the site (see above). The Harthill Conservation Area is approximately 1 km to the west of the site and the Thorpe Salvin Conservation Area is approximately 1.5 km to the northeast of the site. Although direct effects would not occur there is still the potential for the setting of such assets to be affected (albeit temporarily) with implications for the significance of the asset. There are not expected to be significant effects on the setting of these features. The drilling rig would be up to 60 m high; however this would only be in place for a temporary period. The short lived nature of the impact, distance and limited intervisibility with key heritage assets means significant effects are not considered likely. An Environmental Report, including a cultural heritage appraisal and landscape and visual appraisal, will be completed as part of the planning application.
Are there any areas on or around the location which are densely populated or built up, which could be affected?	The site is not located within an urban or densely populated area.
Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected?	There are no Air Quality Management Areas on or adjacent to the site.
Is the location of the development susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the development to present environmental problems?	According to the Environment Agency website, the site does not lie within a flood plain. Appropriate consideration of flooding and drainage will be completed as part of the planning application. The site is not considered susceptible to any other hazards.
3. CHARACTERISTICS OF THE POTENTIAL IMPACT	
(a) Extent of the impact	
Will the effect extend over a large area?	No. This is confined to the site area (under 1.5 ha) and the land immediately adjoining.
Will many people be affected?	No. The nearest residential properties are over 690 m from the site. The site is approximately 0.7 km from the nearest settlement of Harthill.
(b) Transboundary nature of the impact	
Will there be any potential for transboundary impact? (n.b. Development which has a significant effect on the environment in another Member State is likely to be very rare. It is for the Secretary of State to check Environmental Statements to decide whether there is likely to be such an effect in each case).	No.
(c) Magnitude and complexity of the impact	
Will there be a large change in environmental conditions?	No.
Will the effect be unusual in the area or particularly complex?	No.
Will many receptors other than people (fauna and flora,	This is considered to be unlikely as the site is relatively isolated and is currently intensively

SCREENING CRITERIA	PROPOSED DEVELOPMENT
businesses, facilities) be affected?	managed for agricultural purposes. An Environmental Report containing assessments of potential impacts on noise, traffic and transport, ecology, landscape and visual, surface water and flooding, hydrogeology and archaeology and cultural heritage will be submitted with the planning application.
Will valuable or scarce features or resources be affected?	No.
Is there a risk that environmental standards will be breached?	The proposals would be managed in accordance with the Borehole Sites & Regulations 1995, the Management of Health & Safety at Work Regulations 1992, the Construction (Design & Management) Regulations 2007, the Offshore Installations & Wells (Design & Construction etc.) Regulations 1996, and other relevant legislation. Environment Agency guidance for onshore oil and gas development (August 2016) will also be followed in relation to environmental permitting. The proposed core well will be undertaken in accordance with Standard Rules (SR 2015 No 1) for management of extractive waste, not including a waste facility, generated from onshore oil and gas prospecting activities including drilling, coring, PTT, acid wash and decommissioning for the production of oil or gas (using oil and water based drilling mud).
Is there a risk that protected sites, areas, and features will be affected?	This is considered to be unlikely for the proposed development and site location. An Environmental Report containing assessments of potential impacts on noise, traffic and transport, ecology, landscape and visual, surface water and flooding, hydrogeology and archaeology and cultural heritage will be submitted with the planning application.
(d) Probability of the impact	
Is there a high probability of the effect occurring?	The effects of the Proposed Development can be clearly established and the probability of any effects determined with reasonable confidence. In addition, there are established and embedded mitigation and management techniques which will be used during the core well activities to reduce the probability of effects occurring. As with all development, It is likely that some environmental effects will occur, though the nature, duration and scale will be limited as described herein.
Is there a low probability of a potentially highly significant effect?	As above.
(e) Duration, frequency and reversibility of the impact	
Will the effect continue for a long time?	Consent for the Proposed Development is sought for five years. However construction (Stage 1) would last a maximum of 3 months and drilling (Stage 2) works, with the potential environmental impact would last a maximum of five months. For the majority of the five year term, the well would be suspended (Stage 3) with only maintenance checks carried out.
Will the effect be permanent rather than temporary?	Both construction and drilling operations would be temporary and end following the cessation of Stage 2.
Will the impact be continuous rather than intermittent?	Intermittent. Construction and drilling activities would be undertaken over periods of up to 3 and 5months respectively. It is intended that drilling will follow shortly after site construction; however this depends on rig availability. There could also be intermittent periods where a work over rig is required on site (e.g. for maintenance or during site abandonment). These would be for less than 1 month,
If intermittent, will it be frequent rather than rare?	Rare.
Will the impact be irreversible?	No.
Will it be difficult to avoid or reduce or repair or compensate for the effect?	No.

4. Conclusion

This screening assessment has considered whether the Proposed Development is likely to give rise to significant effects on the environment.

The Proposed Development falls under Schedule 2 of the EIA Regulations as the site exceeds the legislative area thresholds. However, it does not exceed indicative thresholds and criteria within the PPG and is not located in a sensitive area as defined by the EIA Regulations.

Table 2 sets out the baseline environmental conditions in the area on and adjacent to the site. The potential exists for effects on ground and surface water, air quality, views and noise however the site is located in an agricultural area with few adjacent sensitive receptors and therefore the potential for significant effects is considered to be unlikely. Standard proven mitigation measures will be employed as used on other similar type of development.

Accordingly, the screening assessment has identified that significant effects on the environment are not considered likely either alone or in combination with other development and therefore the Proposed Development should not be considered to constitute EIA development as defined by the EIA Regulations.

As outlined in this report, the future planning application would include an Environmental Report addressing the aspects of water environment, ecology, noise, landscape and visual effects, and cultural heritage. Given the scale of the Proposed Development this is considered appropriate to allow the MPA to consider the material matters pertaining to the future application.

Appendix 1
Site Location Plan

Site Location

N

0 75 150 300 Meters

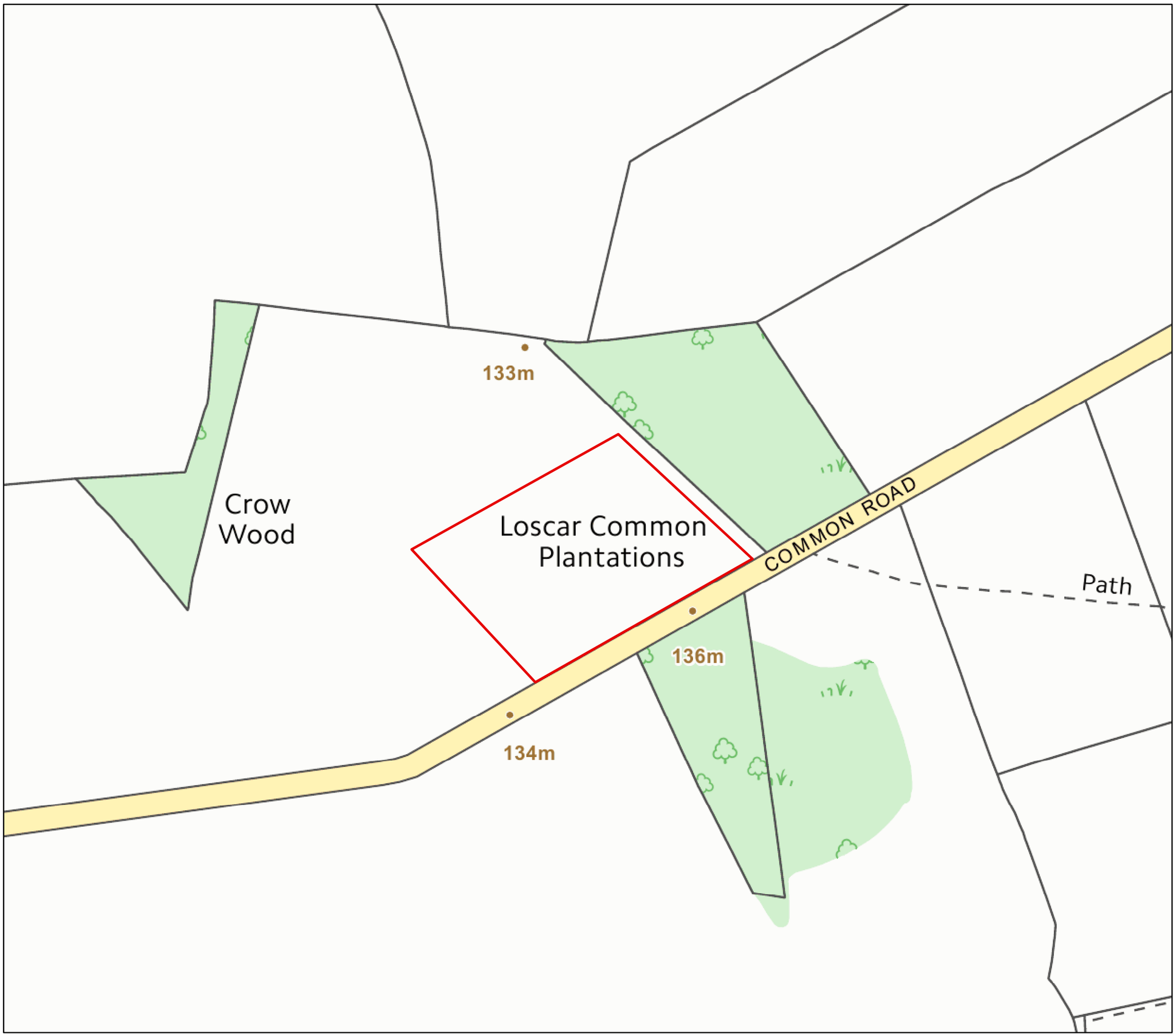
INEOS Shale

INEOS Shale
38 Hans Crescent, Knightsbridge
London, SW1X 0LZ
www.ineosshale.com

Project:	PEDL 304/2 - East Midlands
Title:	Site Location Plan
Date: 09/01/2017	Scale: 1:10,000 CRS: BNG
Drawn By: NF	Checked By: JB Rev:
Plan No:	P304-035

381000
380000
450000
451000
452000

U:\ArcGIS\GIS_Data\England\Midlands\00_Licences\PEDL304\PDFs\P304_035 - Site Location Plan (Site 2)_10k.pdf



Site Location

N

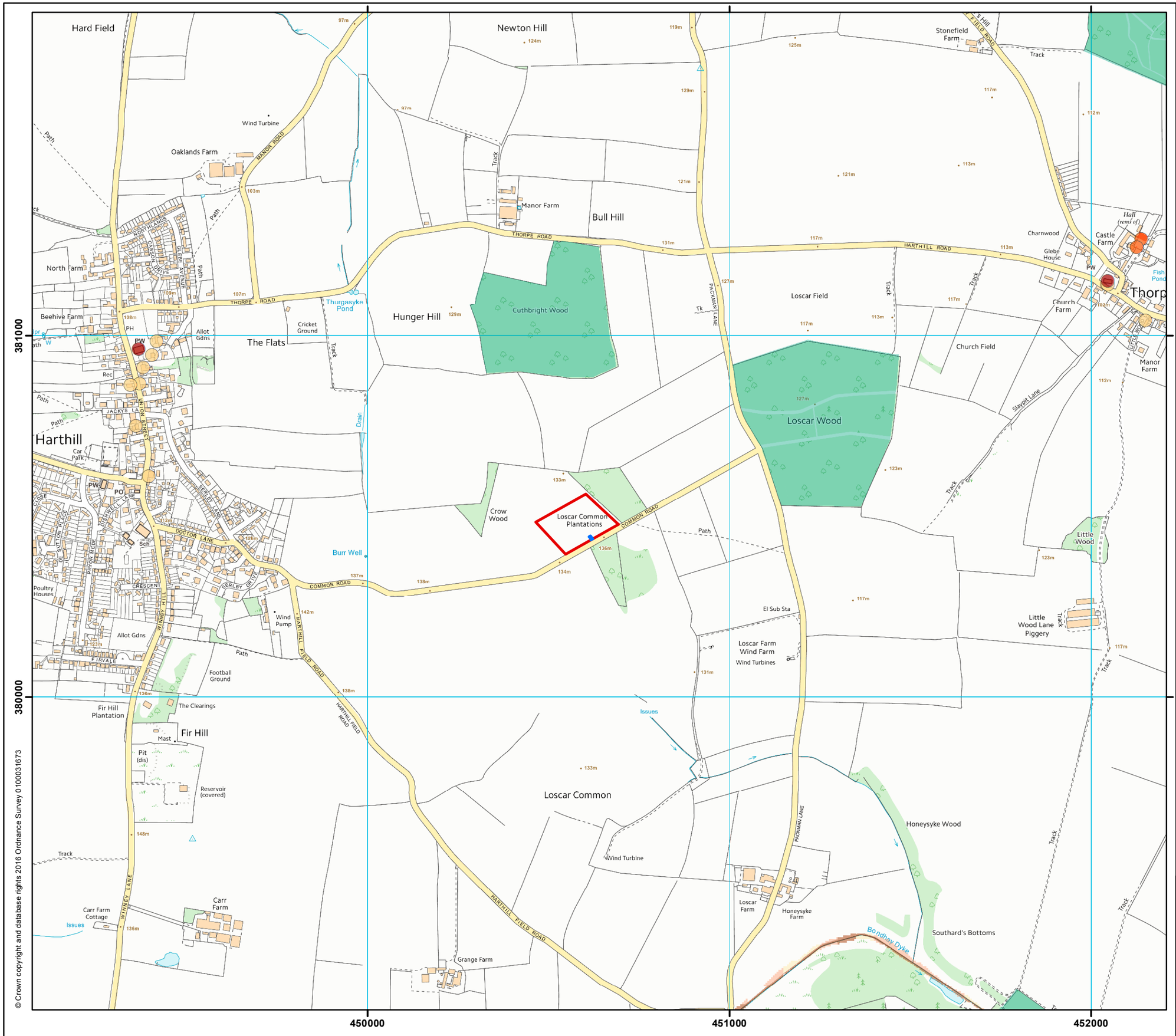
0 20 40 80 Meters

INEOS Shale
38 Hans Crescent, Knightsbridge
London, SW1X 0LZ
www.ineosshale.com

Project:	PEDL 304/2 - East Midlands
Title:	Site Location Plan
Date: 09/01/2017 Scale: 1:2,500	CRS: BNG
Drawn By: NF Checked By: JB	Rev:
Plan No:	P304-036

U:\ArcGIS\GIS_Data\England\Midlands\00_Licences\PEDL304\PDFs\P304_036 - Site Location Plan (Site 2)_10k.pdf

Appendix 2
Designation Plan



- Indicative Access Route
- Site Location
- Listed Buildings I Grade
- Listed Buildings II* Grade
- Listed Buildings II Grade
- National Nature Reserves
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Special Protection Areas

Source Protection Zone

- Zone I - Inner Protection Zone
- Zone II - Outer Protection Zone
- Zone of Special Interest

Risk of Flooding from Rivers and Sea

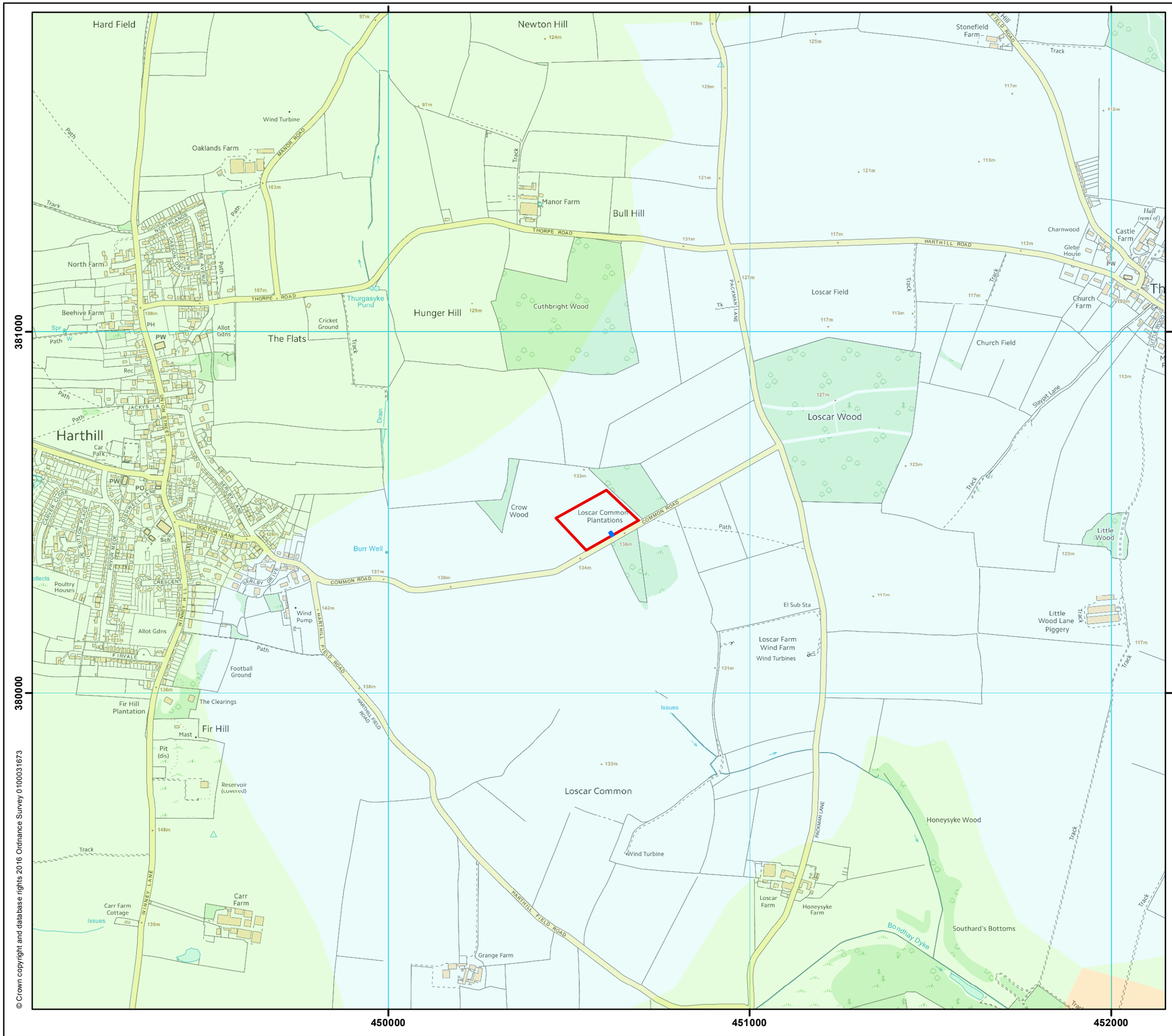
- High
- Medium
- Low
- Flood Risk Areas
- Important Bird Areas
- Scheduled Monuments
- Country Parks
- Air Quality Management Areas
- Local Nature Reserves
- National Parks
- Ramsar
- Ancient Woodland
- Areas of Outstanding Natural Beauty
- World Heritage Sites

N

0 75 150 300 Metres

INEOS Shale
38 Hans Crescent, Knightsbridge
London, SW1X 0LZ
www.ineosshale.com

Project:	PEDL 304/02 - East Midlands
Title:	Designation Plan 1
Date: 27/02/2017	Scale: 1:10,000 @A3 CRS: BNG
Drawn By: JB	Checked By: NF Rev:
Plan No:	P304-037



- Indicative Access Route
- Site Location

Agricultural Land Classification

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Non Agricultural
- Urban

N

0 75 150 300 Metres

INEOS Shale
38 Hans Crescent, Knightsbridge
London, SW1X 0LZ
www.ineosshale.com

Project:	PEDL 304/02 - East Midlands
Title:	Designation Plan 2
Date: 27/02/2017	Scale: 1:10,000 CRS: BNG
Drawn By: JB	Checked By: NF Rev:
Plan No:	P304-038

Appendix 2
Screening Opinion

TOWN AND COUNTRY PLANNING ACT 1990
THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (ENGLAND AND WALES) REGULATIONS 2011 - Screening Opinion

Address: Land adjacent to Common Road, near Harthill, Rotherham

Proposal: Application for the use of land to drill a vertical core well to explore for shale gas, with associated equipment, all subject to conditions precluding more than a single drill and conditions precluding that land use for a period of more than 5 years and, within that 5 year period, to conditions precluding a total period of activity of more than 1 year.

The proposed development has been assessed against Schedule 2 to the 2011 Regulations and the criteria set out in column 2 of the table in that Schedule. However the Mineral Planning Authority, having taken into account the criteria set out in Schedule 3 to the 2011 Regulations, is of the opinion that the development would not be likely to have significant effects on the environment by virtue of factors such as its nature, size or location. Further details of the Screening Opinion are attached.

Accordingly the Mineral Planning Authority has adopted the opinion that the development referred to above for which planning permission is sought is not EIA development as defined in the 2011 Regulations.

Signed: Chris Wilkins

ppDirector of Planning, Regeneration and Transportation Service

Date: 18th May 2017

Request for a screening opinion, Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 2011

Introduction

Under the provisions of Part 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, as amended (the EIA Regulations) Turley, as planning agent for INEOS, has by a request submitted to Rotherham Council received 8th March 2017 required the Council, as the relevant planning authority, to provide a screening opinion as to whether the proposed development described in the request (summarised below) would constitute 'EIA development'. The meanings of 'EIA development', 'screening opinion', and related terms are defined in the EIA Regulations.

The Site

The site proposed for the development is in a rural location occupying part of an agricultural field and is within the administrative area of Rotherham Council. It is located north of Common Road, approximately midway between the villages of Harthill and Thorpe Salvin. Immediately to the west is Crow Wood and to the east is the Loscar Common Plantations with Loscar Wood further east. Loscar Wood is identified as an area of Replanted Ancient Woodland. To the south across Common Road is the 'Loscar Farm' commercial turbine site which has 3 large turbines (96m to blade tip).

The site is within the Loscar Common Local Wildlife Site and within an Area of High Landscape Value and the Green Belt, as identified on the adopted Unitary Development Plan (1999), and part of the East Rotherham Limestone Plateau Landscape Character Area. It is within an area of agricultural land identified as being of Grade 2 value. The closest residential properties are approximately 700m away on the eastern edge of Harthill.

Harthill Public Footpath No. 23 runs close to the eastern boundary of the site and this joins Harthill Public Footpath No. 8 that runs close to the northern boundary, which. There is a network of rural roads in the wider area.

The site is within a Landfill Gas Consultation Zone, relating to Loscar Quarry to the south east of the site which contains inert material.

It is also within the Netherthorpe Airport Safeguarding Zone, relating to the nearby private airport.

The planning history of the site details that the area was included within an application for underground coal mining granted in 1971 (reference KP1971/3029) and by an application for the working of a 2 foot (sough) seam by underground methods, granted in 1982 (RB1982/0657). However, the site does not lie within a Coal Mining Risk Area.

The Proposal

The proposal relates to a temporary development involving the drilling of a vertical

core well to explore for shale gas with a single point of access Common Road. The proposal details that he site would be restored back to an agricultural use following any development.

The detail of the proposed development provided by INEOS sets out that it would comprise five phases:

Phase 1 - Site Development and Establishment – approximately 3 months.
Phase 2 - Drilling and Coring – approximately 5 months.
Phase 3 - Establishment as a Listening Well and Suspension – approximately 1 week with the suspended well in place until restoration.
Phase 4 - Undertaking Listening Well Operations – up to 3 weeks as required.
Phase 5 - Abandonment and Restoration – approximately 1.5 months.

Phase 1 – Site Development and Establishment.
This would take approximately 3 months and would involve:

- Mobilisation– this would involve any necessary pre-commencement surveys, including geotechnical surveys, site investigation surveys, road construction surveys and environmental surveys. Any construction equipment would also be brought to site during mobilisation.
- Access Tracks – formal access construction including visibility splays and geotextile membrane to be covered with aggregate and on-site parking provision.
- Site Clearance – the site would cover 120m by 95m (1.14 hectares). Vegetation clearance and hedge trimming, topsoil/subsoil removal would occur.
- Site Development and Lining – impermeable site liner trench and subsequent appropriate infilling at foot of topsoil bund to be installed immediately around the drill site. The bund would be approximately 2m high on the perimeter of the site created from topsoil from within the site. The bund would assist with visual and noise screening.
- Development of Drainage – perimeter water storage pipe installation to be fed into from across site to catch any potential surface water runoff. This would then be transported off site.
- Development of Site Accommodation – cabins stacked (up to two high) on top of each other would be placed at the perimeter of the site.
- Installation of Monitoring Boreholes – groundwater monitoring boreholes installed, in liaison with the Environment Agency (EA), under permitted development rights.
- Construction of Well Cellar – a well cellar (2.5m diameter and 3m deep) would be excavated, from which the well would be drilled. A conductor installation rig up to 10m in height would be set in the top section of the well bore. The conductor rig would be a smaller drilling rig designed to drill to shallower depths. This would also allow for greater flexibility of drilling and reducing the amount of time the main rig is in place.
- Demobilisation – grass seeded geotextile membrane introduced to soil bunds and security measures and lighting installed around site. Demobilisation of construction equipment in preparation for mobilising main drilling rig and equipment.

Working hours for Phase 1 are stated as being 0700-1900 Monday to Friday and 0700 – 1300 on Saturdays with no working on Sunday or Bank/Public holidays unless in an emergency or agreed otherwise with the Mineral Planning Authority (MPA).

Phase 2 – Drilling and Coring would take up to 5 months and would involve;

- Mobilisation of drill rig and associated equipment including temporary mobile lighting (up to 9m in height).
- Drilling and Coring- well drilled to a depth of approximately 2,800m with a drill rig up to 60m in height. The well would be logged during drilling and cores would be sent off site for laboratory analysis. No flow testing would be undertaken.
- Demobilisation – drill rig and ancillary equipment would be removed from site including waste from drilling and coring process (drill cuttings and waste drill muds).

Working hours for Phase 2, with the exception of drilling, are stated as being 0700-1900 Monday to Friday and 0700 – 1300 on Saturdays with no working on Sunday or Bank/Public holidays unless in an emergency or agreed otherwise with the Mineral Planning Authority. Drilling would be undertaken 24 hours a day.

Phase 3 - Establishment of Listening Well and Suspension would involve;

- Running and cementing the reservoir casing to surface using the drill rig (2-3 days).
- Fitting of flange and well monitoring gauge.
- Fitting of 2m cube steel protector cage over wellhead.
- Removal of remaining cabins from site.

Following well suspension, routine visits to the site would be undertaken to check the integrity of pipework, site surface, fencing and security arrangements, site drainage and containment, well head structure and pressure monitoring.

Activities during Phase 3 to suspend the well (once the rig is removed from site) and maintenance visits would take place 0700-1900 Monday to Friday and 0700 – 1300 on Saturdays with no working on Sunday or Bank/Public holidays unless in an emergency or agreed otherwise with the MPA.

Phase 4 – Undertaking Listening Well Operations

Activities during Stage 4 would only take place to undertake baseline monitoring or when another well is hydraulically fractured, subject to such a consent for that separate activity being granted within the period of planning consent for this well. Activities during Phase 4 would include:

- Mobilisation of wireline truck 35m mobile crane, mast, elevated work platform and temporary welfare facilities;
- Placement of a string of geophones on the wireline inside the reservoir casing for the duration of the listening operations; and

- Demobilisation.

If undertaken, Phase 4 operations would have a duration of up to three weeks. The screening report states that this phase would involve no introduction of chemicals into the well or a requirement to re-work the well using a drill rig. Hours of operation during this phase would be 0700 to 1900 hours Mondays to Fridays with no working at weekends, bank or other public holidays unless in emergency situations.

Phase 5 – Abandonment and Restoration would involve:

- Plugging and Abandoning the Well – removal of wellhead and casing/cement to below 3m to allow restoration to agriculture.
- Removal of Residual Site Equipment and Site Surfacing – removal of security/permanent fencing, concrete pad and cellar, aggregate, drainage, any potentially contaminated equipment, prior to removal of impermeable geotextile /HDPE lining.
- Restoration of Ground – reuse of soils stored in perimeter bunds to restore site surface. Redevelopment of field drainage, reseeding of site and prepared for aftercare as agricultural land. The access track would then be restored, unless the landowner applies separately to retain the improved access which would be subject to any necessary further consent.
- Aftercare – in accordance with aftercare plan to be agreed.

The screening request also makes clear that the overall development would have a duration of five years (with each of the above phases being of limited duration band with periods when no activity would be taking place at the site) following which the site would be restored back to agriculture.

The EIA Regulations and Screening Opinion

Background
The EIA Regulations provide that the relevant planning authority shall adopt a screening opinion (as to whether or not a proposal is 'EIA development') if a person who is minded to carry out development requests it to do so. It is not necessary for an application for planning permission to have been made in respect of the development before such a request is made. An application or submission for EIA development cannot be determined unless an Environmental Statement has been submitted by the applicant.

Under the EIA Regulations, 'EIA development' is development which is either –

(a) Schedule 1 Development, i.e. development, other than exempt development, of a description mentioned in Schedule 1 of the EIA Regulations; or
(b) Schedule 2 Development, i.e. development, other than exempt development, of a description mentioned in Column 1 of the table in Schedule 2 where (a) any part of that development is carried out in a sensitive area; or (b) any applicable threshold or criterion in the corresponding part of Column 2 of that table is respectively exceeded or met in relation to that development] and likely to have

significant effects on the environment by virtue of factors such as its nature, size or location.

Consideration

The proposed development is not considered to be in any description category which is covered by Schedule 1. In particular, it does not involve extraction of gas and is therefore not considered to be within the description of development mentioned in Schedule 1 at paragraph 14 ("Extraction of gas…for commercial purposes where the amount extracted exceeds 500,000 cubic metres per day in the case of gas…").

The proposed development corresponds to a description mentioned in Column 1 of the Schedule 2 table: It appears to fall under "Extractive Industry" in Column 1, since it concerns, "deep drillings" (at 2(d)). It might also be regarded as falling under "surface industrial installations for the extraction of …natural gas (at 2(e))". The proposed development site is not located in a "sensitive area", as identified in Article 2 'Interpretation' of the Regulations and therefore the indicative thresholds in Column 1, Category 2, Schedule 2 of the EIA Regulations are relevant.

The threshold for "deep drilling" is an area exceeding 1 hectare (ha) whilst that for a "surface industrial installation" is an area exceeding 0.5ha. The proposed development covers an area of approximately 1.14 hectares and therefore exceeds both these thresholds.

The proposal is therefore found to be Schedule 2 development which is required to be screened having regard to selection criteria in Schedule 3 of the EIA Regulations.

Accordingly due consideration has been given by the Council to the issue of any likelihood of significant effects on the environment being caused by the development, having regard to the selection criteria for Schedule 2 development in Schedule 3 of the EIA Regulations. The proposal would be EIA development if, in the opinion of the Mineral Planning Authority, it were likely to have 'significant effects on the environment by virtue of factors such as its nature, size or location'. The selection criteria relate to:

- Characteristics of the development.
- Location of the development.
- Characteristics of the potential impacts.

The National Planning Practice Guidance (NPPG) also provides guidance on establishing whether a proposed development requires an EIA, including indicative criteria and relevant thresholds and key issues to consider, which are intended to help determine whether significant effects are likely. However, when considering the thresholds, it is important to also consider the location of the proposed development.

The NPPG indicative criteria and threshold for development falling within category 2(d) of Schedule 2 indicates that significant effects are more likely for: "Drilling operations involving development of a surface site of more than five hectares." It adds that "Exploratory deep drilling on its own is unlikely to require EIA". In respect

of key issues to consider, the NPPG adds that: “Regard should be had to the likely wider impacts on surrounding hydrology and ecology.”

For development falling within category 2(e) of Schedule 2 significant effects are more likely for: “Development of a site of 10 ha or more or where production is expected to be more than 100,000 tonnes of petroleum per year” and in respect of key issues to consider, the NPPG states: “The scale of development, emissions to air, discharges to water, the risk of accident and the arrangements for transporting the fuel are key issues to be considered.”

Characteristics of the development

This proposal is for a temporary planning permission on a new site to drill a vertical exploration core well to explore for shale gas. As has been described above in detail, the development would require material to be brought to the site by HGV and heavy plant and machinery would be used on site to develop the land to produce the perimeter bund and create the operational platforms. The development includes the erection of a 60m tall drill rig.

- In accordance with the EIA Regulations (Regulation 5(6)) the Mineral Planning Authority in deciding on the adoption of the opinion set out below as to whether Schedule 2 development is EIA Development has taken into account the selection criteria set out in Schedule 3 as are relevant to the development.

Temporary nature of development
Whilst numerous references are made regarding the proposed “temporary planning permission” this would, in law, have the effect of being treated as a permanent planning permission. At the same time the screening request has assumed a limited period of life for a permission. Accordingly the Mineral Planning Authority has assessed the proposal as requesting the Mineral Planning Authority to itself impose a planning condition on the proposal to limit the period of the planning permission. The Mineral Planning Authority has, therefore, considered the request report on that basis. Further, because the proposal is shown to be in 5 stages whose total period of operation is no more than a single year, the Mineral Planning Authority has also considered the Request report, and, on the basis of no activity between each of the 5 stages and that a further planning condition would be imposed to secure such inactivity.

Size of the development – The application site covers an area of approximately 1.1 Ha. The size of the development exceeds the relevant threshold for this type of development in Schedule 2 of the EIA Regulations but is below the indicative criteria and thresholds (5 hectares for “deep drillings”) contained in the guidance in the NPPG.

The site is located in open countryside. Views into the site would be partially screened by a 2m high planted earth bund around the perimeter, although this bund in itself may create an incongruous feature in the wider landscape. Inside the earth bund would be located industrial cabins/containers stacked two high, which would be visible over the earth bund. Based on the information provided in the screening

request, it is understood that such structures would be on site for the duration of the overall development (i.e. a maximum five years).

At up to 60 m in height, the scale of the proposed drill rig would not be of a natural scale within the area and would be visually prominent. However, this is proposed to be for a limited period, of up to 5 months, which includes mobilisation, drilling and coring and demobilisation of the drill rig.

Overall the size of the proposed development is not considered to be significant in its effects in the context of the EIA Regulations.

Cumulation with other developments – This is dealt with in more detail below. The proposed development should be considered in terms of cumulation with other existing authorised development in the vicinity. At the time of writing, the LPA is not aware of any other developments of this type in the immediate area. Whilst the location of other exploration rigs has not been provided, the applicant has stated that they would be located a significant distance from the site under consideration here, and not within 10km, of other rigs.

It is noted that the site is located in a rural position which enables long distance views across the wider landscape. Such views provide a high level of inter-visibility. It is noted that a number of similarly tall structures in the form of wind turbines/wind farms would be visible from the immediate area of the proposed development, however, in considering the limited timescale (5 months) that the drill rig would be present at the site, such potential cumulative impacts are not likely to be significant.

The use of natural resources – The proposed development would use large plant, machinery and HGVs in site development and operationally. Such plant and machinery would use fuel that would otherwise not be used if the development did not proceed. On site energy needs would be met by mobile diesel generators. Construction of the site would involve the importation by road of approximately 9,000 tonnes of aggregate which is to be removed on restoration and reused where permitted.

Overall it is not considered that the use of natural resources for the proposed development would be significant in the context of the EIA Regulations.

The production of waste –The proposed development would produce operational waste in the form of drilling mud, rock cuttings and waste water from groundwater. Waste would be generated mainly at stage 1 (constructive waste), stage 2 (extractive waste) and stage 5 (decommissioning and restoration). The applicant has stated that the waste would be contained in tanks stored on a concrete pad prior to its removal from site by licensed waste carriers. This would also be the case with any naturally occurring radioactive material (NORM) which would be managed under permit through the Environment Agency.

Overall, it is not considered that the production of waste arising from the proposal is likely to be significant in the context of the EIA Regulations.

Pollution and nuisances – This type of development can be a source of noise, dust

and air pollution from the day to day site operations, potentially impacting on ecology and hydrology and may cause an adverse visual impact into the local setting and wider landscape. The storage of waste materials as well as oils/fuels etc at the site, in order to run on site generators, could potentially lead to pollution of surface water and soils although these impacts could be controlled through suitable containment and good working practice. HGV and other traffic movements can impact on the local amenity through emissions to air, noise and vibration. Localised pollution and nuisance could arise from vehicle movements, day to day site operations such as noise and dust, visual intrusion, ecology and hydrology. The potential pollution and nuisance impacts for this particular development are considered further in the characteristics of the potential impact section of this report below.

Risk of accidents, having regard in particular to substances or technologies used – There is a potential risk from the increase in traffic associated with the development. However, it is not considered the risk of accidents is likely to be significant in the context of the EIA Regulations.

The proposed development has the potential to lead to accidents associated with the construction and maintenance of the well as well as the storage of fuels associated with the operation of on-site generators/equipment etc. Section 50 of the Infrastructure Act 2015 sets out the responsibilities of other environmental regulators, including the Health and Safety Executive (HSE) and the Environment Agency (EA), who would have direct responsibilities in respect of the proposed development. Such responsibilities would fall outside the remit of the Mineral Planning Authority in the consideration of any planning application.

The HSE would regulate aspects of all phases of extraction and in particular would be responsible for ensuring the appropriate design and construction of the well casing for any borehole and well integrity during operation.

The EA would be responsible for the protection of water resources (including groundwater aquifers), ensuring appropriate treatment and disposal of mining waste, emissions to air, and suitable treatment and management of any naturally occurring radioactive materials.

Location of the development
The site is located in open countryside close to the villages of Harthill and Thorpe Salvin. A description of the location of the site is provided above.

The site does not lie within flood risk area as indicated by the EA Flood Risk Mapping data, nor is it in a known Surface Water Flood Risk Area. The site lies within a Landfill Gas Consultation Zone. The site also lies within the western side of the Netherthorpe Airfield buffer zone.

There are no known environmentally sensitive sites and features in the vicinity that are likely to be significantly affected by the development or existing and historic mining features that cannot be addressed as part of the consideration of a formal planning application.

The site is not situated in a high risk area of flooding and there are no public rights

of way that cross the site. The site does not lie within an area of important landscape designations and there are no national or international ecological or historic designations covering or immediately adjacent to the site.

Characteristics of the potential impacts
Schedule 3 of the EIA Regulations requires consideration to be given to the potential significant effects of the development having particular regard to:

a) the extent of the impact (geographical area and size of the affected population);
b) the transfrontier nature of the impact;
c) the magnitude and complexity of the impact;
d) the probability of the impact; and
e) the duration, frequency and reversibility of the impact.

Visual and Landscape Impacts
The development would be located in open countryside in an area that lies within an Area of High Landscape Value. Soil and sub-soil stripping and 'screen mounds', as well as the introduction of site accommodation cabins, would introduce incongruous features into the rural scene and industrial activity into what is otherwise a rural setting. However, in considering the duration of the development and the size of the structures/landforms, such impacts would not be so significant as to warrant the production of an Environmental Statement.

During the drilling and coring phase, a drill rig up to 60m in height would be present on site and would potentially be visible over a wide area, day and night, because of ancillary lighting towers (themselves up to 9m in height). Whilst such impacts are noted, the presence of the drill rig on site for such a limited timescale (a maximum of 5 months), would ensure that any such impacts would not be significant.

The access proposals impact on the character of the landscape and local distinctiveness of rural lanes as a result of the proposed visibility improvements and road widening works, including passing place(s). Whilst such works would inevitably result in impacts, they would be localised in nature and would not be likely to lead to significant landscape and visual impacts.

The nearest visually sensitive properties are on in the eastern side of Harthill Village. There would also be views of the site from informal footpaths and the PROW which are located also to the east/north. There would be inter-visibility between the drill rig and other tall structures such as wind turbines which can be seen in the distance. The presence of woodland blocks and hedgerow trees would potentially assist in screening views of the site itself from the surrounding area, and to a lesser extent the drill rig, though as noted above this would only be on site for a maximum 5 months.

Whilst the Council is of the view that the landscape and visual impacts of this development would need to be considered in more detail through the production of a Landscape and Visual Impact Assessment (LVIA), at this stage and based on the

information supplied in the screening request and consultation responses received, it is not considered to be significant in the context of the EIA Regulations.

Ecology

No part of the proposed development site is covered by any statutory or non-statutory nature conservation designations, nor are any such sites found in the immediate vicinity of the application site.

Similarly, aerial photographs suggest that the proposed site is currently under agricultural arable use, and is likely to therefore be of negligible innate ecological interest.

Whilst ecological impacts cannot be entirely ruled out, it is not considered that any such impacts would be so significant as to warrant the development being considered EIA development.

Noise, dust and air quality

This type of development would potentially be a source of noise pollution and generate dust which can impact on air quality. Site operations, HGV movements, vehicles tipping and loading, the operation of plant and machinery during soil stripping and handling operations, and the use of the drill rig would all generate noise. The operations have the potential to impact on air quality and create dust which would need to be managed accordingly. It is considered that these potential effects would require consideration with any forthcoming planning application.

The applicant considers that the operational noise generated by the development is capable of being managed and mitigated in accordance with the thresholds contained in NPPG for both day and night operations, by which significant impacts are shown to be avoided, though no technical report has been submitted.

It is acknowledged that there would be noise generated by the development and that the drilling would take place over a 5 month temporary period and not for the 5 year temporary period being the timeframe for the planning application. The Mineral Planning Authority understands that any noise impacts will be assessed within the submission of a Noise Report and this will be considered during the determination of the planning application.

Regarding air quality, the construction phase and the operation of the drilling rig have the potential for a localised impact on air quality however the effects would not be likely to be considered significant given the temporary nature of the proposed works. Therefore at this stage for screening purposes, given the further noise information submitted and the temporary 5 month drilling period within the overall development, it is considered that the impact of noise, dust and air quality are not likely to be significant in the context of the EIA Regulations.

Traffic impacts

The proposal involves the movement of HGVs into and out of the site. Access to the site is proposed via a single point off Common Road. Vehicle movements to and from the site would include deliveries of water for use on site for washing and toilet facilities, cement, drilling materials, materials to form the bund, aggregates to

form the hardstanding areas, and other supplies to the site, and removal of fluids generated from within the groundwater and bedrock along with any waste for disposal. These are expected to take place during the day except for in exceptional circumstances for health and safety reasons.

A Traffic Management Plan (TMP) is proposed to accompany any future planning application.

It is stated that during construction (Stage 1) there would be fewer than 10 HGVs movements per day for the majority of the time. On up to 40 days there would be more than 10 movements per day and for three weeks there would be between 50-60 movements per day (5 per hour over a 12 hour period) when aggregate is brought to the site.

During drilling (Stage 2) there would be fewer than 10 daily HGV movements for most of the period, with periods at the beginning and end of drilling stage of between 20 and 42 HGV movements daily (2-4 per hour over a 12 hour day). In addition there would be up to 16 movements greater than 32 tonnes at the start and end of the stage as the rig is mobilised and demobilised.

Stages 3 to 5 would have less associated traffic.

Overall the environmental impact of traffic on highway safety and capacity is not likely to be significant in the context of the EIA Regulations.

Vibration/land stability/subsidence

As referred to above, the site does not lie within a Coal Mining Risk Area and there are no nearby recorded mine entries.

The use of the drill rig, heavy plant, machinery and HGV movements is a potential source of localised vibration. The applicant has stated that ground borne vibration is expected to be imperceptible at distances greater than 20m from the drill rig. Overall, it is considered unlikely that there would be a significant effect on the environment in terms of vibration, land stability or subsidence.

Hydrology and flood risk

The site area is greater than 1 ha and any planning application would need to be supported by a Flood Risk Assessment. The site is located in flood zone 1, a low flood risk area, and there are no watercourses or drainage features in close proximity to the site.

Given the nature of the proposals, it is not considered likely that the exploration well development would have a significant environmental impact on hydrology, flood risk or historic mining features.

Historic Environment and Archaeology

A number of listed buildings are also located in Harthill and Thorpe Salvin. Whilst the presence of these designated heritage assets in the vicinity of the site is noted, in considering the scale, nature and duration of the proposed development, it is not considered that any likely impacts to their setting would be so significant as to

warrant the production of an ES. A heritage statement should be submitted with any planning application.

It is not considered that the development is likely to have any significant historic or archaeological impacts or that it would have a significant impact on the identified heritage assets. The South Yorkshire Archaeology Service have indicated that they would expect a geophysical survey to be submitted in support of any future application.

In considering all of the above, it is considered that the potential impacts would remain localised to the proposed development site and the surrounding area.

Cumulative Effects

Consideration needs to be given to any cumulative effects of the potential environmental impacts associated with the development at the site.

The applicant states that no 'cumulative schemes' have been identified with existing development or development not yet began which benefits from planning permission.

The existing large commercial turbines to the south of the site should be considered in conjunction with the proposed 60m rig, though it is noted that the rig would only be on site for a short period of time (up to 5 months) such that any cumulative impact would be short-lived. It is not considered that there are any ongoing developments or any developments not begun which benefits from planning permission which might have a significant cumulative environmental effect in association with the proposed development.

Consideration has also been given to whether or not this development proposal would be a singular project, or part of a larger development project which should also be considered in the screening process and this is addressed below

Associated or linked development

The applicant has expressed the view that this exploratory vertical well development should not be regarded as an integral part of a more substantial project since it is a discrete proposal that could proceed independently.

The applicant has further stated that the purpose of the proposed vertical exploratory core well is to understand the geology in this specific locality. The evidential understanding derived from this well would contribute, alongside seismic data gathering and other prospective exploratory well sites, to a greater understanding of the overall 'basin' and its potential to support commercially-viable shale gas extraction. The applicant considers that this well would provide data for this localised area and as such is not considered to comprise part of a larger project in terms of the EIA Regulations.

It has been considered that the proposed development represents preparatory works for a more substantial development and as such should not be considered in isolation. If considered as an integral part of a wider single development project then EIA might be required in respect of the whole project. However in this case, having regard to the exploratory purpose of the proposed vertical well, it would be

possible for the well development to proceed without any extractive developments following from it. Therefore this does not appear to be a case of a proposal which for the purpose of screening is to be regarded as an integral part of an inevitably more substantial development. Indeed, the information submitted as part of the Screening Request indicates that: “Plugging and Abandoning the Well – removal of wellhead and casing/cement to below 3m to allow restoration to agriculture.” would be part of the proposal.

It is considered that there must be clear evidence to support the inevitable substantial development referred to more than simply the potential of this development being screened leading onto a more substantial later development. In this case it is considered that whilst there is potential to lead to a more substantial future development it is not inevitably the case since the data obtained from the exploratory well may not support a more substantial later development. For this reason it is considered that the development is capable of being classed as a stand-alone development and should be screened in isolation in this case.

Conclusion
Having taken account of the selection criteria for screening Schedule 2 developments in the EIA Regulations, the guidance in the NPPG and having considered the potential impacts referred to above; the impacts from the proposed development are found not to be likely to be so significant, either individually or collectively, such as to require EIA. The conclusion which is therefore reached on behalf of the Council is that the proposed development would not be likely to have significant effect on the environment, in terms of the EIA Regulations.

This does not negate the requirement to submit supporting information with any subsequent application to allow the assessment of all material planning considerations.

Appendix 3
Outline of Abandonment (Decommissioning) and Restoration Operations (Stage 5)

Duration – Approximately 2 months

- Plugging and abandoning well – approx. 2 weeks
- Removal of site equipment – approx. 2 weeks
- Restoration – approx. 3 weeks
- Aftercare – up to 5 years

Hours of Working

- Monday- Friday - 0700-1900
- Saturday - 0700-1300
- Sunday or bank/ public holiday - No working unless agreed by MPA or in an emergency

Staff Numbers

- Staff on site during Stage 5 – 14 during P&A (plus security), approx. 5 for restoration.

There would be three key aspects in Stage 5:

- Plugging and decommissioning the well;
- Removal of residual wellsite equipment and surfacing; and
- Restoration of ground (and aftercare)

Equipment and plant on site and vehicle movements during the decommissioning and restoration stage are listed in Section 3. Plant required at each aspect of Stage 5 would differ, although would all be brought onto the site at the beginning of Stage 5.

Plugging and Decommissioning the Well

Decommissioning of the well would be undertaken in accordance with Oil and Gas UK Guidelines on Well Abandonment and according to an abandonment plan to be agreed with the Environment Agency, Health and Safety Executive (HSE) and an independent Well Examiner. The abandonment process would also follow Oil and Gas Authority (OGA), Coal Authority and HSE requirements, and in accordance with good industry practice of the time.

Plugging, abandonment and restoration plant would be mobilised onto site, including any cabins necessary for screening sensitive receptors from noise. The suspended well would be abandoned by setting two permanent tested barriers (cement) within the steel casing to seal the wellbore. The wellhead would be removed and casing and cement cut to 2 m below ground level in accordance with regulatory and permit requirements, to allow restoration of the site to agriculture.

The 32 m (max) rig would be required during well abandonment for a short period.

Removal of Residual Site Equipment and Site Surfacing

The site would be fenced with temporary Heras fencing to allow the permanent fencing and security fencing to be removed. The concrete pad and cellar would be broken for removal by a licensed waste contractor, and aggregate, drainage pipework and other infrastructure would be removed from the surface (following ensuring it was emptied of residual water, which would be removed by a licensed contractor as usual) and reused where permitted. Any potentially contaminated equipment would be removed from the site prior to removal of the impermeable geotextile/ HDPE lining.

All site equipment and infrastructure would be reused or recycled where possible, or alternatively removed from site by licensed waste contractors as appropriate.

Depending on the requirements of the Environment Agency, there may be a requirement to maintain groundwater monitoring boreholes and continue monitoring. If not, these would also be decommissioned.

Restoration

All restoration would be undertaken in appropriate weather conditions. The soils stored in bunds would be used to level and restore the site surface, with any necessary physical or nutrient treatment applied as appropriate. Field drainage would be re-developed if required. The site would be reseeded and prepared for aftercare as agricultural land.

Access tracks and road amendments (junction amendments or passing place improvements) would also be restored as agreed with the landowner and Highways Authority, or retained for continued use, subject to any necessary further planning consent. Any fences or gates removed to facilitate the development would be replaced.

Aftercare

An aftercare plan would be put in place as a condition of planning consent, to ensure appropriate aftercare of the site as agricultural land. Aftercare would take place within the landowner's existing management schedule.

A monitoring plan as agreed with the Environment Agency would be followed as a condition of the Environmental Permit for the site. This would include post-plugging and abandonment monitoring, and the permit could not be surrendered to the Environment Agency unless they were content that no long-term environmental issues remained.

Appendix 4
Model Planning Conditions

Model Planning Conditions

This appendix sets out the suggested wording of some of the planning conditions that would need to be attached to any permission should it be granted. Others are likely to be required.

Commencement

The development herby permitted shall be begun within 3 years from the date of this permission.

The MPA shall be notified in writing at least 7 days prior to the commencement of the construction of the site.

Permission

The development hereby permitted shall be carried out in accordance with the submitted application and documents, including the Proposals Document and the mitigation contained therein, as received by the MPA on [Date to be inserted].

Duration of Operations

This permission shall be for a temporary period only expiring five years following the date of commencement, as notified under Condition [number to be inserted].

On or before the expiration of the temporary period, as detailed in Condition [number to be inserted], all construction, drilling or evaluation works authorised by this permission shall cease. Thereafter, the site shall be cleared of all plant, buildings, machinery and equipment. The site shall be restored to its original use as shown in drawing reference P304-S2-PA-09 B.

Noise

Prior to the commencement of development, a construction and drilling noise management plan (NMP) shall be submitted for written approval to the MPA. The NMP shall set out all known potential sources of noise and techniques to be used to mitigate noise which shall demonstrate compliance with conditions [numbers to be inserted]. The NMP shall include methods to deal with noise complaints from the generic public and the monitoring that will be undertaken during noisy activities. The approved NMP shall be implemented in full for the duration of the works and demobilisation.

Drilling Rig

Prior to the commencement of drilling operations on site, the name, make, model and technical noise specification for the drilling rig(s) to be brought to site shall be submitted for approval to the MPA. The approved rigs shall not be substituted without the prior written approval of the MPA and all approved noise mitigation measures shall be implemented in full throughout the duration of drilling.

Working Hours

Site preparation, earthworks, site construction and HGV deliveries shall only take place during the hours of 07.00 hours and 19.00 hours Monday to Friday and Saturday 07.00

hours and 13.00 hours, unless there is an operational need which has been agreed in writing in advance with the Minerals Planning Authority.

Assembly and demobilisation of the drilling rigs at the wellsite shall only take place during the hours of 07.00 hours and 19.00 hours Monday to Saturday.

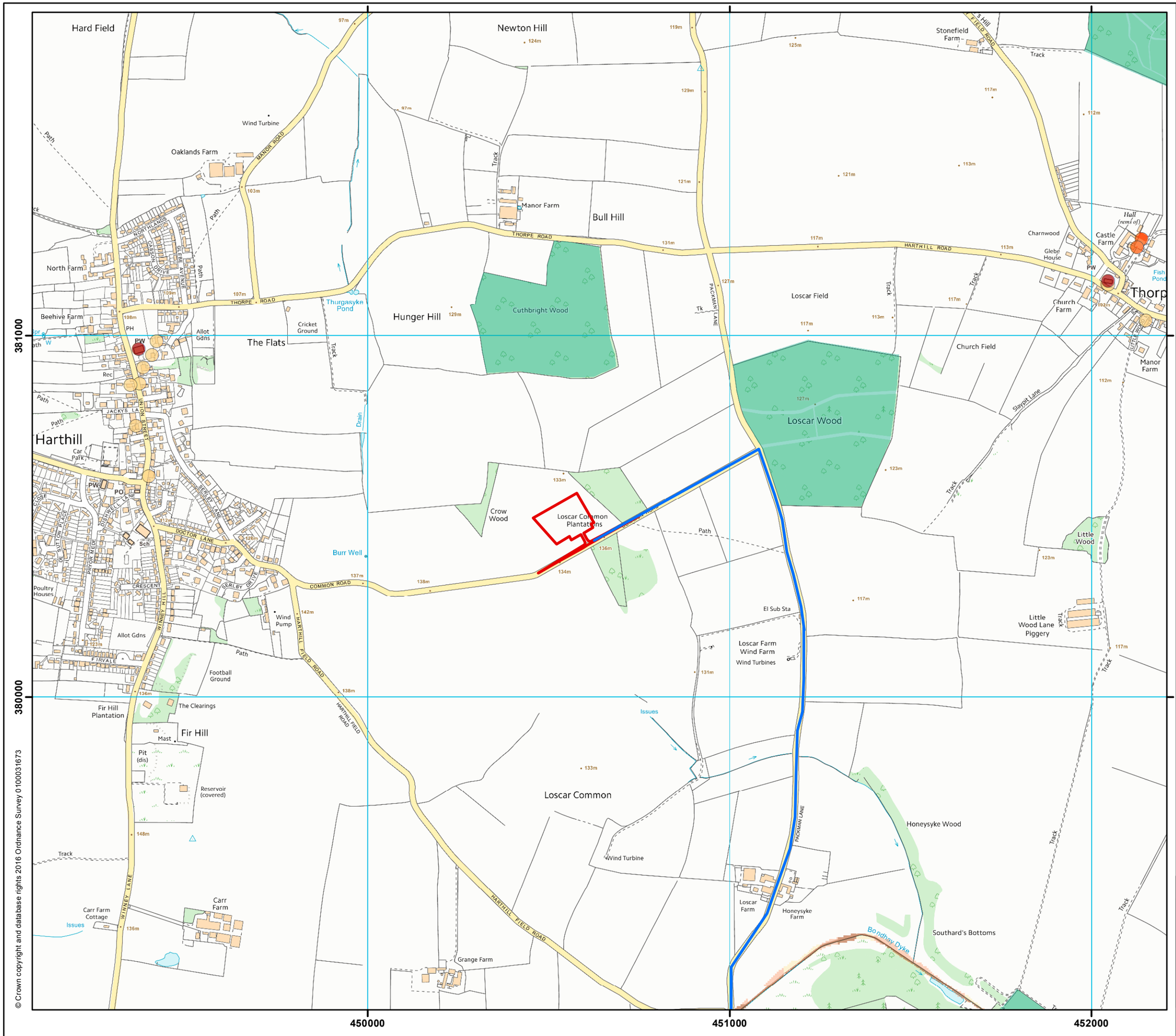
Route Management Strategy

No stage of the authorised development shall commence until a detailed traffic management plan which is substantially in accordance with the draft traffic management plan dated May 2017 has been submitted to and approved in writing by the relevant planning authority in consultation with the relevant highway authority. The detailed traffic management plan must set out written details of (a) vehicle routing; (b) management of the site access point; (c) the management of vehicles when using the public highway, including any staging areas and escort vehicles if required; (d) the number and likely scheduling of any abnormal load movements; (e) any required temporary warning signs; (f) any arrangements for temporary traffic management proposals along the access route, and (g) any proposed measures to control driver behaviour. The approved detailed traffic management plan must be implemented as approved

Archaeology

No development shall take place until the implementation of a programme of archaeological work, in accordance with a written scheme of investigation, has been submitted to and approved in writing by the Local Planning Authority

Appendix 5
Designations Maps



- Indicative Access Route
- Site Location
- Listed Buildings I Grade
- Listed Buildings II* Grade
- Listed Buildings II Grade
- National Nature Reserves
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Special Protection Areas

Source Protection Zone

- Zone I - Inner Protection Zone
- Zone II - Outer Protection Zone
- Zone of Special Interest

Risk of Flooding from Rivers and Sea

- High
- Medium
- Low
- Flood Risk Areas
- Important Bird Areas
- Scheduled Monuments
- Country Parks
- Air Quality Management Areas
- Local Nature Reserves
- National Parks
- Ramsar
- Ancient Woodland
- Areas of Outstanding Natural Beauty
- World Heritage Sites

N

0 75 150 225 300 Metres

INEOS Shale

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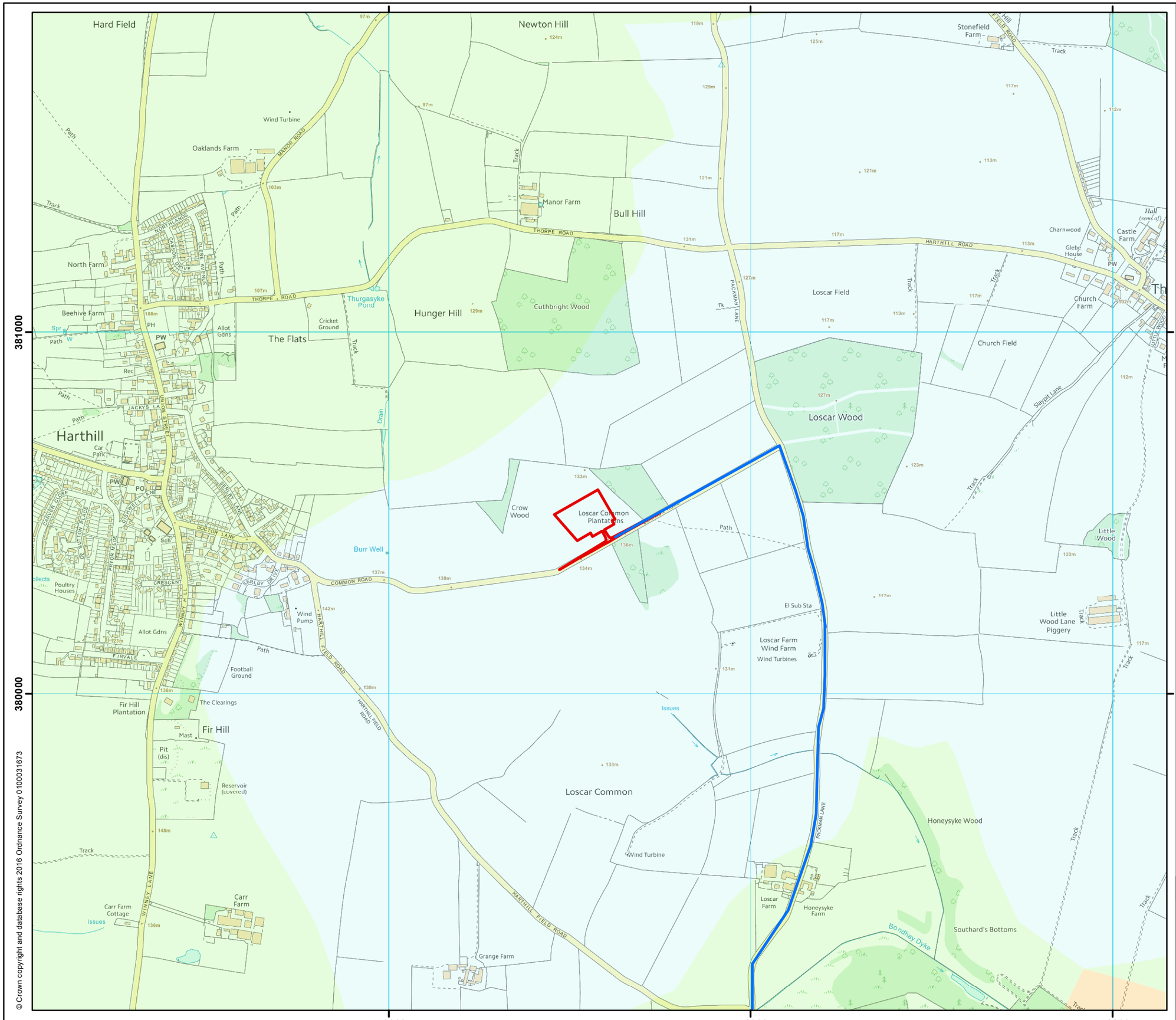
Project:	PEDL 304/02 - East Midlands
Title:	Designation Plan 1
Date: 18/05/2017	Scale: 1:10,000 @A3 CRS: BNG
Drawn By: JB	Checked By: NF Rev:
Plan No:	P304-069



- Indicative Access Route
- Site Location

Agricultural Land Classification

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Non Agricultural
- Urban

N

0 100 200 300 400 Metres

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Project:	PEDL 304/02 - East Midlands
Title:	Designation Plan 2
Date: 18/05/2017	Scale: 1:10,000 CRS: BNG
Drawn By: JB	Checked By: NF Rev:
Plan No:	P304-070