Nottinghamshire County Council

Report to Planning and Licensing Committee

21 March 2017

Agenda Item:

REPORT OF CORPORATE DIRECTOR – PLACE

BASSETLAW DISTRICT REF. NO.: 1/16/00773/CDM

PROPOSAL: **THE EXPLORATORY WELL WOULD BE A VERTICAL MULTI-CORE WELL TO TARGET THE BOWLAND SHALE AND MILLSTONE GRIT GEOLOGICAL FORMATIONS TO ASSIST WITH THE ASSESSMENT OF THE SHALE GAS BASIN IN THE AREA. IN ADDITION, THREE SETS (WITH EACH SET CONTAINING UP TO 3 BOREHOLES) OF MONITORING BOREHOLES WOULD BE INSTALLED TO SAMPLE AND MONITOR GROUNDWATER AND GROUND GAS DURING THE DRILLING OF THE EXPLORATION WELL. THE PROPOSED DEVELOPMENT WOULD INVOLVE PERMISSION FOR THE SECURITY CABINS ALREADY ON THE SITE, TOGETHER WITH THE CONSTRUCTION WORK ASSOCIATED WITH THE DEVELOPMENT OF THE WELL SITE, THE DRILLING (USING A DRILL RIG OF A MAXIMUM HEIGHT OF 60M) AND EVALUATION OF THE WELL AND MONITORING BOREHOLES AND THEN THE DECOMMISSIONING AND RESTORATION OF THE SITE BACK TO AGRICULTURAL USE. THE DEVELOPMENT WOULD BE FOR A PROPOSED THREE YEAR PERIOD.**

LOCATION: **LAND OFF A634, BETWEEN BLYTH AND BARNBY MOOR, NEAR RETFORD**

APPLICANT: **DART ENERGY (EAST ENGLAND) LIMITED**

Purpose of Report

1. To consider a planning application for an exploratory well to target the Bowland Shale and Millstone Grit geological formations to assist with the assessment of the shale gas basin in the area. The proposed development is on land off the A634 between Blyth and Barnby Moor, near Retford. The key issues relate to visual and landscape impact, noise, ecology, traffic, air quality, contamination and heritage. The recommendation is to grant planning permission subject to conditions and the signing of a legal agreement.

2. No hydraulic fracturing is proposed as part of this planning application.

The Site and Surroundings

3. The proposed exploratory wellsite is located in north Nottinghamshire, within the district of Bassetlaw and in Torworth Parish. The site is approximately 1.5km north-west of the centre of Barnby Moor, 1.5km south-west of the centre of Torworth, 2.4km south-west of the centre of Ranskill and 3km south-east of the centre of Blyth (see Plan 1).

4. The site is accessed off the A634 which is orientated north-west to south-east, connecting to the A638 in Barnby Moor and the B6045 (High Street) in Blyth. The B6045 connects to the A1(M) both to the north and south of Blyth.

5. The wider area is rural in character, comprising open agricultural fields with a generally flat topography. The application site is agricultural land and is located within the south-eastern corner of a field. To the north and west of the application site is the remainder of the field in which the site is located. Immediately to the south is a field boundary and hedgerow, beyond which is further agricultural land. Immediately to the east is a field boundary hedgerow beyond which is the A634, and then further agricultural land. The site sits at an elevation of 25-30m AOD.

6. The planning application boundary comprises a roughly rectangular area, with a small spur to the east encompassing the access to the A634. The application site measures approximately 2.2ha in size (see Plan 2).

7. There are currently two cabins located on site with associated generators and fencing. These are located on the eastern side of the application site, adjacent to the field boundary hedgerow and the A634.

8. The proposed development is located within Flood Zone 1, which means the site has a less than 1 in 1,000 (0.1%) annual probability of flooding.

9. The nearest residential properties to the application site are Beech Farm (630m to the south-west), Jubilee Farm (670m to the north-west), Billy Button Cottage (690m to the north-east), College Farm (900m to the east) and Grange Farm (1.2km to the south-east). The properties are shown on Plan 3.

10. The nearest listed building is located approximately 1.5km to the south-west in Barnby Moor. There is a conservation area in Blyth which contains a number of listed buildings.

11. The nearest rights of way are the Torworth Byway Open to All Traffic (BOAT) which is located approximately 450m to the north and the Barnby Moor Bridleway 1 located approximately 625m to the south (see Plan 3).

12. Mattersey Hill Marsh Site of Special Scientific Interest (SSSI) is located approximately 2.7km north-east of the site and is noted as a fine example of neutral marsh communities on old gravel workings (see Plan 4).

13. The nearest Local Wildlife Site (LWS) is the Tinker Lane, Barnby Moor (LWS) which comprises trackside verges with a notable botanical community. It extends around the north, west and south of the application site. At its closest it

is approximately 250m north of the application site. Also of note are the Daneshill Lake Local Nature Reserve (LNR) and the Daneshill Lakes and Woodland LWS, which largely cover the same area, and located approximately 1.6km to the north-east of the application site. The Daneshill Lakes LWS is a very rich mosaic of woodland, marsh and aquatic habitats on old sand and gravel workings and is of note for both its plant and animal communities (see Plan 4).

14. There are no European designated sites (such as Special Areas of Conservation or Special Protection Areas) within 10km of the application site.

15. The A1(M) runs in a north-south orientation and is located approximately 1.1km to the west of the application site (see Plan 1).

Proposed Development

Background

16. The Secretary of State for Energy and Climate Change previously issued Petroleum Exploration and Development Licences (PEDL) for a defined geographical area and specified period of time, although responsibility for this now lies with the Oil and Gas Authority (OGA) as an executive agency sponsored by the newly formed Department for Business, Energy and Industrial Strategy (DBEIS). The licences give exclusive rights for the licensee to 'search, bore for and get' petroleum. However, the licences do not in their own right confer on the licensee any consent, permission or authorisation to carry out development activity.

17. The application site is located within PEDL 200 which covers parts of Nottinghamshire and extends into Rotherham Metropolitan Borough (see Plan 5). A consortium of companies hold the licence including Dart Energy (East England) Limited as the lead licence holders, Engie E&P UK Limited, Ineos Upstream Limited and IGas PLC.

18. The planning application is partially retrospective in that it is seeking planning permission for two security cabins which are already in place. This is acknowledged in the applicant's description of development which includes "*the proposed development would involve permission for the security cabins already on site*". These cabins have been in place since mid-October 2015.

19. One cabin measures 7.5m by 3.5m and is 3m in height, the other cabin measures 7.5m by 2.7m and is 3m in height. Both cabins are coloured dark green. There is also some associated equipment including a generator, fencing and security cameras.

20. A number of complaints have been received by both Nottinghamshire County Council and Bassetlaw District Council (BDC) relating to the security cabins: specifically, that they are unauthorised development, not benefiting from planning permission. Given the absence of any minerals development at the time, these complaints were addressed by BDC. BDC came to the view that a clear breach of planning control had occurred and gave the developers the

opportunity to submit a retrospective planning application to try to regularise the breach. BDC gave the applicant a deadline of 10th May 2016 to submit the application after which time they would decide on the expediency of authorising the use of formal enforcement action to remedy the breach.

21. This application, for an exploratory well site which includes a retrospective element for the security cabins, was received by the County Council on 12th May 2016. No further action was taken by BDC.

22. Following the submission of the exploratory well site application the security cabins were now associated with a minerals application and the consideration of unauthorised operations became the responsibility of the County Council. The County Council has received complaints subsequent to the submission of the planning application.

23. The County Council's Monitoring and Enforcement officers reviewed the development and came to the view that it would not be expedient to initiate enforcement action at that time having considered the impacts and harm, and that a planning application had been submitted seeking to regularise the development.

24. It was noted at the time by the County Council's Monitoring and Enforcement officers that if the application is granted the development would be authorised and the matter closed. If the application is refused the matter would be revisited and appropriate action initiated at that time to remedy the breach of planning control.

Proposed Development

25. The proposed development is the construction of an exploratory hydrocarbon well site. The well would be a vertical well to a maximum depth of 3,300 metres to target the Bowland Shale and Millstone Grit geological formations, where multiple core samples would be taken. The proposal includes three sets of monitoring boreholes (each containing up to three boreholes) to be installed to sample and monitor groundwater and ground gas before and during drilling of the exploration well. Retrospective planning permission is also sought for the security cabins that are already on site.

26. The proposed development would have four phases: construction; drilling; evaluation; and decommissioning and restoration. Planning permission is sought for a temporary period of three years.

27. The purpose of the exploratory well is to log and take core samples from the borehole, which once analysed will confirm whether flow testing (which could involve well stimulation through hydraulic fracturing) of the well would be worthwhile. Such flow testing and well stimulation would be subject to a separate, further planning application.

28. The planning application is accompanied by an Environmental Impact Assessment (EIA).

Phase 1 - Construction

29. The wellsite construction process involves drilling of groundwater monitoring boreholes; the formation of a site access; erection of gates, fencing and CCTV; stripping of soils and the formation of bunds; creation of a wellsite platform; installation of a bunded storage area; and staff welfare accommodation and on-site vehicle parking.

30. Before the construction of the wellsite the proposed monitoring boreholes would be drilled to a depth of up to 50m. The drilling equipment used to construct these boreholes would be mounted on a heavy duty commercial 4x4 truck. Monitoring borehole Set 1 would be located to the north-east of the application site, adjacent to the site access. Monitoring borehole Set 2 would be located on the eastern edge of the application site, adjacent to the field boundary. Monitoring borehole Set 3 would be located on the south-western edge of application site. The monitoring borehole locations are shown on Plan 6.

31. Stripping and storage of topsoil would take place. The topsoil would be stored in a soil bund along the eastern boundary of the application site, adjacent to the A634 field boundary. The soil bund would measure approximately 105m in length, between 15m and 27m in width (toe to toe) and 3m in height. The soil bund would be grassed and maintained for the life of the development (Plan 6).

32. The site falls from approximately 31m AOD to the south of the application site to 27m at the north. Cut and fill would be required to create a level well pad. There would be 1.0m cut to the south of well pad and 1.0m fill to the north. There would be 0.5m cut to the west of the well pad and 0.4m fill to the east.

33. On the stripped and cut/filled land there would be the construction of a rectangular well pad measuring approximately 100m by 90m. The well pad would involve laying down a geotextile membrane; a Bentomat liner (a clay based liner); a further geotextile membrane; aggregate; a geogrid; and further aggregate (Plan 7).

34. There would be a central level area (61m by 48m) within the well pad, beyond which there would be a fall to the edges of the pad where there would be a perimeter French drain to capture all surface water runoff. The drain would comprise a perforated pipe within clean stone surrounds located in a geotextile lined ditch. The pipe would drain to a 45,000 litre below ground attenuation tank located immediately outside the northern boundary of the well pad. The capacity of the tank would be maintained by regular emptying by vacuum tanker with the water taken off site to waste water treatment plant for treatment/disposal (Plan 8).

35. Surrounding the well pad there would be a stone containment bund raised approximately 0.5m from the well pad surface, to prevent any surface water from flowing off site. The containment bund would include a Bentomat lining and a 1 in 2 slope (Plan 7).

36. Located centrally within the well pad there would be the construction of a two wellhead cellars. The two cellars would be sunk into the ground to a depth of approximately 3.5m and lined with concrete. The size of cellars would depend

upon the drill rig selected but would measure between 2.9m – 4m in width and 10m – 12m in length (Plan 9). The second cellar is a contingency measure should it be required as a back-up (e.g. a stuck drill pipe which cannot be removed). However, it should be noted that only one well is applied for and would be drilled.

37. Located immediately to the north of the well pad would be a site cabin and parking area compound. There would be six cabins and a total of 16 car parking spaces within the compound. There would also be a circulatory access system, with a road entering the site from the A634 to the east, looping around the north and then passing though the compound, before re-joining itself (Plan 6).

38. The site would be secured using a twin fencing system. There would a 2.0m high Heras outer fence and a 2.5m high hoarding inner fence. There would be an 'air lock' style system at the site entrance using 3.0m high welded mesh fencing, where vehicles pass through the first set of gates and a second set is not opened until the first set of gates is closed and secure. In addition, there would be additional 2.0m high inner hording to separate the circulatory access road from the rest of the well pad, offices and parking. All fencing would be coloured dark green. There would be an emergency exit through the inner and outer fences to the south (Plan 10).

Phase 2 - Drilling

39. The second phase of the operation would be the drilling of the proposed well. This would involve the drilling of a single vertical well to a maximum depth of 3,300 metres. This phase also involves installation and removal of the drilling rig. The geology that the applicant anticipates is set out in the table below.

Table 1: Anticipated geology

Anticipated geological formations to be drilled	**Notes**	**Estimated depth – Total Vertical Depth Subsea - TVDSS (in metres)**
Sherwood sandstone		22-140 (+/- 5)
Zechstein group		140-288 (+/- 20)
Westphalian Coal Measure		288-1,360 (+/- 20-50)
Millstone grit	Secondary target	1,360-1,690 (+/- 150)
Bowland shale	Primary target	1,690-1,760 (+/- 250)
Carboniferous limestone		1,790 onwards (+/- 300)

40. The drilling operation would involve the mobilisation of a drilling rig and associated equipment at the site, including the following:

a) Drilling rig and ancillary equipment;

- Blowout preventer (a specialised valve used to seal, control and monitor oil and gas wells to prevent blowout);

- Silicon Controlled Rectifier (SCR) – a drilling rig which uses diesel generators to supply power to separate electric motors to power rig components;

- Compressor House;

- Varco – a control house for managing current to the top-drive;
- 500 storage – storage tanks;

b) Containerised diesel power generators;

c) Pumps and storage tanks for diesel, water, drilling mud and cuttings;

d) Drill casing storage area and pipe rack;

e) Ancillary equipment and materials;

f) Staff welfare facilities, offices, workshop, stores and parking; and

g) Lighting for the well site and the drill rig.

41. The proposed drilling phase layout is shown on Plan 11. Plan 12 shows the drill rig elevation. Indicative lighting is shown on Plan 13.

42. The design of the well would provide barriers (steel and cement) between the well and groundwater. The well design and drilling programme would be submitted to an independent well examiner for review.

43. Two types of drilling mud would be used during drilling, namely Water Based Mud (WBM) and Low Toxicity Oil Based Mud (LTOBM). WBM would be used for drilling through the Sherwood Sandstone formation which is classified as a principal aquifer, and to below the Zechstein Group/Magnesian Limestone. For deeper sections of the well where additional lubrication and clay inhibition is required the LTOBM would be used.

44. The well is designed to obtain logs and cores. This is to enable an understanding of the geological sequence beneath the site. Logs are used for the physical measurement of subsurface properties by lowering specialist tools down the wellbore. Cores are the collection of rock samples from the wellbore. These would then be analysed at the surface to understand the properties of the rock.

45. One component of the logging programme is Vertical Seismic Profiling (VSP). The applicant states that this would be carried out under permitted development rights and would involve the use of one vibrator vehicle which would operate for a short period of time (a few hours or less operating in periods lasting a few seconds each) to obtain more information about the geological profile of the area.

46. The applicant also proposes to carry out a Pressure Determination Test (PDT) at the end of the drilling period to test the strength of the rock formation and determine the in-situ pressure. This involves the running of a perforation device down the well to make approximately 10 holes in the well casing in the area of interest. Fresh water injection, totalling approximately 3 cubic metres, would be performed at a low rate for a short duration (typically 1 – 2 hours) to create a ‘pressure pulse’. Down-hole memory gauges would be used to record pressure. These memory gauges would be left in place for 20 days to record pressure

data and then retrieved and analysed. The perforations would then be isolated and/or plugged. The casing string would be fully cemented above and below the perforations. The only communication between the well and the formation is via the perforation and therefore well integrity is not compromised.

47. The applicant has clarified that the PDT would not result in a gas release over and above that which would occur normally during the course of drilling. The purpose of the PDT is not to stimulate gas flow, but to test the strength of the rock and observe the downhole formation pressure.

48. The applicant outlines that it is not commercially possible to state exactly which drill rig would be used. This is because the drill rig that would be used is subject to planning permission being granted and the rigs that are available at that time. The drill rigs that are under consideration are:

    a) Bolden 92 (BDF Rig 92);

    b) Deutag Bentec T 208;

    c) Bentec T-49;

    d) PR Marriot Drillmec HH220 (Rig 50).

49. For assessment purposes the Landscape and Visual, Lighting and Cultural Heritage assessments consider the worst case scenario, which in this case is the tallest rig (the Bolden 92) at 60 metres in height. Plans 11, 12 and 13 are based on the Bolden 92. With regard to noise, the assessment considers a number of potential drill rigs and the assessments of impacts and mitigation for this development is based on the rig with the highest noise levels, the Bentec T-49.

50. No horizontal drilling is proposed as part of this planning application.

Phase 3 - Evaluation

51. Following the drilling programme the well would be suspended and maintained in accordance with industry best available technique. All above ground equipment would be removed from the site apart from the wellhead, site offices and security fencing (Plan 14).

52. The evaluation period may last for up to 2 years. The collection of data from the monitoring boreholes would continue throughout this period.

Phase 4 – Decommissioning and Restoration

53. In the event that the results of the exploration work indicates that further development of the site is not viable the site would be decommissioned and restored.

54. The exploratory well would be plugged and capped (using steel plugs and cement) and the wellhead would be removed in accordance with industry best available techniques including the Oil and Gas UK Guidelines for the abandonment of wells Issue 5, 2015.

55. With regard to the monitoring boreholes, the headworks and the uppermost 0.5m of casing would be removed from each borehole and the boreholes plugged and capped in accordance with EA guidelines.

56. All construction materials (aggregates, reinforced concrete, geotextile membranes), services below the geotextile membranes and remaining on-site infrastructure (site offices, security and fencing/gates) would be removed from the site to be reused, recycled or disposed of at a suitably permitted waste disposal facility. The stockpiled topsoil would be replaced to an even depth and tied into adjacent ground levels, and the site would be restored back to its previous agricultural use (Plan 15).

57. Following restoration the land would be subject to a five year aftercare period to ensure the site would be returned to full agricultural productivity.

Lighting

58. Lighting at the site would be required during the drilling period. Plan 13 shows the indicative lighting layout. Lighting at the site would include:

a) Horizontal fluorescent strip lights mounted on the drill rig;

b) Victor Titan lights mounted on the drilling rig;

c) Freestanding 3m high fluorescent lighting units facing into the site to illuminate the drilling area;

d) 5m high pole lighting at the site access;

e) Low level bollard lighting on the internal site roads;

f) Security lighting mounted on the site cabins; and

g) A low intensity light on top of the drill rig as per Civil Aviation Authority guidance.

Materials and Waste Management

59. All materials required for the construction and operation of the site would be imported by road and this has been allowed for within the daily traffic movements.

60. Topsoil stripped and stored onsite would be used in the restoration of the site.

61. Spoil arising from the construction of the well cellar and attenuation tank would be stored on site. Drill cuttings produced during the drilling phase would be temporarily stored in containers within the sealed section of the wellsite before being removed from the site weekly to a suitably permitted waste disposal/treatment facility. Drill cuttings are estimated to be approximately 1,200 cubic metres, subject to final well design and to be governed by the mining waste permit for the site.

62. Any waste water/fluids from the drilling process would be stored as required within the wellsite area and would be removed periodically by tanker to a suitably permitted waste water treatment works.

63. All sewage/waste would be collected in a tank and taken off site to a licensed waste disposal/treatment facility. Skips would be provided for the segregation, collection and containment of non-hazardous solid waste (e.g. packaging).

Access and traffic generation

64. The HGV traffic generated by the application site would use the principal road network, remaining on the B6045, the 'A' classified roads and motorways.

65. HGVs leaving the site would travel north-west along the A634 into Blyth. HGVs would then either head north along the B6045 to join the A1(M) to the north of Blyth, or head south along High Street/Spital Road to join the A1 to the south of Blyth. HGVs accessing the site would follow the same route. The HGV route is shown on Plan 16.

66. The average number of daily traffic movements (one vehicle performing a return journey generates two movements) during the construction, drilling, evaluation and restoration phases are shown in the table below:

Table 2 - Average number of daily traffic movements

	Wellsite Construction (Phase 1)	**Rig mobilisation/ demobilisation (Phase 2)**	**Drilling (Phase 2)**	**Evaluation (Phase 3)**	**Restoration (Phase 4)**
HGVs	36	26	12	0.2 (1 per week)	36
Light Vehicles	20	20	40	10	20

67. There would be a requirement for some 'abnormal loads'. An abnormal load is defined as a vehicle meeting one or more of the following criteria:

- A weight of more than 44,000 kilograms;
- An axle load of more than 10,000 kilograms for a single non-driving axle and 11,500 kilograms for a single driving axle;
- A width of more than 2.9m;
- A rigid length of more than 18.65m.

68. Based on the above, delivery of the Bolden Drilling Rig 92 would require a total of 16 abnormal load movements during delivery of the drill rig, and a further 16 abnormal load movements during its removal.

Operating Hours

69. The proposed operational hours for each of the phases is set out in the table below.

Table 3 - Operational Hours

	Construction (Phase 1)	Drilling (Phase 2)	Evaluation (Phase 3)	Restoration (Phase 4)
Monday to Friday	07:00 – 19:00	24/7	No hours provided – however it is stated that there would be no night time activities.	07:00 – 19:00
Saturdays	07:00 – 13:00	24/7		07:00 – 13:00
Sundays	No working	24/7		No working
Bank Holidays	No working	24/7		No working

70. The applicant proposes to restrict HGV movements during school days. This would prevent HGV traffic generated by the site travelling through Blyth between the hours of 08:00 – 09:00 and 15:15 – 16:15 when there is school transport activity.

Staff

71. The number of staff employed at the site is set out in the table below. During the drilling operations staff would operate in shifts to maintain a 24 hour drilling programme.

Table 4 - Staff Numbers

	Construction (Phase 1)	Drilling (Phase 2)	Evaluation (Phase 3)	Restoration (Phase 4)
Staff	20-25	25-30	No figures provided	No figures provided

Duration

72. Planning permission is sought for a temporary period of three years from the commencement of site construction. The table below sets out the anticipated timescales for the Phase 2 drilling operations:

Table 5 - Estimated activity duration

Activity	**Duration**
Site construction (5.5 day weeks)	
Monitoring boreholes	4 weeks
Preliminary works	1 week
Material delivery	7 weeks
Removal of groundwork vehicles	1 day
Drilling (7 day weeks)	
Mobilisation	1 week
Drilling	14 weeks
De-mobilisation	2 weeks
De-mobilisation fence	4 days
Evaluation (5.5 day weeks)	
Monitoring and Security	2 years
Remediation (5.5 day weeks)	
Preliminary works	1 week
Materials removal	7 weeks
Removal of groundwork vehicles	1 day

Consultations

73. **Bassetlaw District Council** – *Objection, on the following grounds:*

    a) *The potential contamination risk has not been fully explored;*

    b) *Impact of HGVs in nearby villages and no designated routeing or details of how traffic will be managed and insufficient traffic modelling;*

    c) *Lack of any 3D seismic testing being undertaken given the number of historic coal mines in the locality and earth tremors and sink holes being present in nearby villages.*

    d) *Lack of full consultation with local cycling clubs and local residents.*

74. *It is also highlighted that the developer has breached planning control by erecting cabins and equipment without planning permissions, which gave Members little confidence that the developer would meet conditions if permission was granted.*

75. *The above is Bassetlaw District Council's consultation response, following the consideration of a report which was prepared for the Bassetlaw Planning Committee. The Officer's report recommended no objection.*

76. **Bassetlaw Environmental Health Department** – *The Environmental Health team have no comments to make in relation to air quality; extraction/ventilation; lighting; pollution prevention and control; contaminated land; food hygiene; and health and safety.*

77. *With regard to noise, the Environmental Health Team has studied the applicant's noise report. It is recommended that the drilling operation is conditioned such that the noise sensitive properties identified within the report are not subjected to any increase in noise levels above the measured background levels both during the day and night time periods.*

78. *Following the submission of addition information the Environmental Health team have no further comments to make.*

79. **Babworth Parish Council** – *Objection.*

80. *The Parish Council object on the basis that high pressure testing could set off movement and the collapse of old mine workings. Concern is raised about the presence of underground coal mines from Harworth Colliery and which could collapse and result in subsidence. Attention is drawn to a sinkhole which occurred in Ranskill. Babworth Parish Council consider that there is not enough information on what is going on underground and that permission should be refused until a scientific survey is carried out about the risk of subsidence.*

81. **Blyth Parish Council** – *Objection.*

82. *The new access to the A634 at the proposed site would have a detrimental impact on traffic affecting both the A634 and the A1. The development would significantly increase the volume of traffic, including HGVs passing through*

Blyth. Additional traffic in Blyth would pass the primary school and enter the centre of the village having to negotiate the small traffic junctions and mini-roundabouts on the high street. This is a conservation area with several listed buildings including one of England's oldest Norman Churches from 1088 AD. It is also highlighted that road traffic accidents on the A1 and the surrounding network result in traffic being diverted on to the A634 which results in congestion through Blyth. Attention is drawn to large scale industrial development to the north of Blyth's boundary. Blyth Parish Council request that a detailed modelling exercise on present and future traffic volumes is carried out before any approval is considered.

83. *The applicant proposes mini hydraulic-fractures referred to as pressure tests. Attention is drawn to underground workings in the vicinity and any potential for test explosions or fracturing carries a very high risk to people and property with the potential for large areas to be affected. It is stated that serious seismic disturbance is likely from any form of underground drilling or fracturing. It is recommended that the applicant should not undertake any mini-frack until they have conducted a 3D seismic survey of the whole area. Subsidence in the wider area is highlighted.*

84. *Concern is raised about the financial viability of the applicant. The viability of the parent company (IGas) should be subject to careful scrutiny given their poor share performance over the last 18 months and current city rumours. It is requested that guarantees and/or a bond is put in place before approval is considered.*

85. *Blyth Parish Council are concerned about noise and vibration from a 24 hour process and the visual impact of the site. It is also stated that there would be a loss of agriculture and the destruction of localised flora and fauna.*

86. *Attention is drawn to the applicant's disregard to planning rules by erecting temporary buildings and ignoring Bassetlaw District Council's compliance requests.*

87. **Barnby Moor Parish Council** – *After consulting with the parishioners of Barnby Moor, the Parish Council are objecting to the proposed development. The majority of residents (75%) object to the proposal. The main reason for the objection is the increase in traffic flow which is believed to go through Blyth. The Parish Council is concerned that if there is a traffic problem on the A1 vehicles would have to go through Barnby Moor, Torworth and Ranskill. The Parish Council is concerned about the existing traffic levels and additional traffic would not be welcomed.*

88. **Sutton Parish Council** – *The Parish Council recently conducted a survey of villagers to reveal that 89% were not supportive of the development. It is acknowledge that this in itself is not a material planning consideration, however, it does reflect the depth of feeling against the test well.*

89. *It is questioned why the applicant wished to proceed without an up to date 3D seismic survey. It is understood that a 'mini-frack' would take place and on that basis it is essential for the safety of the local community and potentially for the*

future of the shale gas industry that a 3D seismic survey is undertaken before proceeding.

90. *Although the village of Sutton is not directly affected by traffic relating to the site, residents use the Great North Road to access the A1 to Doncaster and Sheffield. Any increase in traffic is not welcomed.*

91. *The Parish Council supports the objections raised by Nottinghamshire Wildlife Trust.*

92. **Torworth Parish Council (TPC)** – *Objection.*

Site Description

93. *The applicant fails to describe what is occurring beneath the ground. The area of Bassetlaw where the development is proposed is riddled with underground coal mining works from Harworth Colliery. It is also reported that Torworth has a mixture of collapsed, partially collapsed, open workings and mining roadways beneath it. The British Geological Survey report that the area suffers from frequent minor earthquakes. TPC also report that a sinkhole opened up in the road at Ranskill recently, due to subsidence.*

94. *TPC report that the area contains many geological faults and the information that the applicant has is poor, relying on old data. Concern is raised about the absence of a 3D seismic survey to justify the location and it is requested that the application be refused until geological faults and mine working surveys are undertaken and independently assessed.*

95. *These concerns regarding subsidence and the lack of a 3D seismic survey have been reiterated in a subsequent representation.*

Development Description

96. *TPC report that there is a high frequency of road closures on the A1 between Blyth and Tuxford and the applicant hasn't provided any diversionary routes which would allow continued access to the site. There is concern that if a diversionary route is established the small villages would not be able to accommodate the size of the applicant's lorries.*

97. *TPC report major industrial/warehouse development taking place in Blyth and there is concern that traffic modelling has not taken place to include traffic from this.*

Planning Policy

98. *Local properties should be surveyed prior to drilling to ascertain any old damage versus any new damage that might occur. It is reported that the Coal Authority has already set a precedent for this conducting property surveys in Torworth and Ranskill.*

Traffic

99. *The site is off the A634 which is a derestricted 60mph two lane road. TPC is concerned about the traffic at the site and it is suggested that a temporary speed reduction zone is implemented as well as signage to highlight to road users that HGVs would be accessing/exiting the site.*

100. *TPC state that the entrance to the site is on a blind bend and report that accidents have occurred on the stretch of road. There is concern that accidents could be repeated, particularly if drivers are distracted by protesters or slow moving lorries exiting the site.*

101. *TPC is concerned that the applicant does not mention traffic problems on Gravesmoor Lane/Baulk Lane, which has problems with HGVs using this road. It is requested that there would be a complete restriction on commercial vehicles over 7.5 tonnes using these roads (and Billy Button Lane).*

102. *TPC question the extent to which NCC would be able to enforce should a breach occur. Concern is also raised about mud and debris on the road, and the road condition.*

Air Quality and Noise

103. *TPC request the continuous monitoring of noise, and air quality levels, throughout the duration of the development.*

Geology and the Water Environment

104. *It is stated that independent testing of the water from the nearest existing borehole must take place prior to any drilling. This is to create a baseline which would be used to test the other proposed boreholes and safeguard consequential run off into watercourses. It is highlighted that water used in the local agricultural activities would quickly enter the food chain.*

Ecology

105. *Concern is raised that bird surveys have not been undertaken by the applicant. TPC are concerned by this because noise, site activity and vibrations would impact on breeding birds.*

106. *The absence of a bat survey is noted and concern is raised about the impacts of artificial lighting on nocturnal animals such as foraging bats.*

107. *TPC question when the amphibian surveys were conducted as there is a number of reptiles in the area which are absent from the applicant's report. It is reported that toads are frequently found in the area, especially during the breeding season and they are a species of principal importance. Effort should be made to determine the species population and the impact of the loss of habitat.*

108. *It is noted that the botanical survey was undertaken in September, which is not the best period to determine floral numbers and the habitation. TPC are of the*

view that the floral counts are underestimated. In addition, there is no mention of the effects of continued deposit of dust on local habitats.

Conclusions

109. *TPC is of the view that a comprehensive assessment of the environmental implications has not been undertaken and the application lacks information regarding emergency procedures.*

110. *TPC is disappointed and frustrated about the erection of security cabin without planning permission at the site in October 2015 and the failure of Bassetlaw District Council to act swiftly. TPC report that the breach and subsequent lack of action has not only installed distrust in the local communities, but also a lack of confidence that any potential future infringements would be adequately and swiftly dealt with.*

111. *TPC also fully support the objections raised by Nottinghamshire Wildlife Trust and agree that the development is not compliant with a number of policies set out in the Minerals Local Plan.*

112. **NCC (Planning Policy)** – *The application must be considered in light of the National Planning Policy Framework (NPPF) and, in line with the NPPF, due weight and consideration should also be given to the adopted Nottinghamshire Minerals Local Plan (MLP) and emerging Nottinghamshire Minerals Local Plan (submission draft). If a local policy conflicts with the NPPF, the NPPF must take precedence.*

113. *Chapter 3 of the adopted Nottinghamshire Minerals Local Plan and Chapter 5 of the emerging Nottinghamshire Minerals Local Plan set out the full range of environmental policy considerations that should be considered.*

114. *In terms of specific policies relating to hydrocarbon development, the existing Minerals Local Plan has policies covering Oil, Coalbed Methane and Mine Gas as set out in Chapter 13. However, shale gas development was not specifically covered. Paragraph 147 of the NPPF and the more recent planning practice guidance for onshore oil and gas should be referenced. Work on the replacement Minerals Local Plan is ongoing. This includes a policy on 'Hydrocarbon Minerals' (MP12) which covers all hydrocarbon development including shale gas development.*

115. *Subject to other detailed comments there are no minerals policy objections to this proposal.*

116. **Environment Agency** – *The proposed development has been subject to an Environmental Impact Assessment and is accompanied by an Environmental Statement. The Environment Agency has reviewed the document from the perspective of controlled water protection, paying particular attention to Chapter 9: Geology and the Water Environment.*

117. *A technical assessment of the potential for a site to cause pollution will be undertaken and controlled as part of the permitting process. The Environment*

Agency comments regarding the request for conditions are limited to activities better controlled by a planning condition.

118. *The Environment Agency consider that planning permission could be granted for the proposed development as submitted if the following conditions are included relating to construction and operational drainage, and details of how foul sewage would be dealt with. Without these conditions, the proposed development on the site poses an unacceptable risk to the environment and the Environment Agency would object to the application.*

Permitting Requirements

119. *Separate to planning permission some of the proposed activities at the site would also need to be regulated by environmental permits. Environmental risk is controlled by these permits and the Environment Agency is in discussion with the applicants regarding which environmental permit they will require. Mitigation of environmental risk from activities such as drilling and the handling of waste at the site will be detailed in information provided to the Environment Agency to support the permit applications.*

120. *Paragraph 122 of the NPPF states "local planning authorities should focus on whether the development itself is an acceptable use, rather than the control of processes or emissions themselves where these are subject to approval under pollution control regimes".*

121. *The Environment Agency's use of permits, together with the controls available to other regulators (Oil and Gas Authority, Health and Safety Executive and local planning authorities) provides the framework for this. As such, the Environment Agency does not seek to duplicate via the planning process issues that are controlled elsewhere by either the Environment Agency or by other regulator organisations such as the HSE. The Environment Agency note that the borehole should be constructed in accordance with the requirements of the HSE and the Petroleum and Development Licence. The HSE are responsible for scrutinising the design and construction of a well casing for the proposed borehole. The Environment Agency's regulatory role regarding well integrity is limited to ensuring any well failure is managed so it does not pose an unacceptable risk to land, air or water.*

Mining Waste Permit

122. *A mining waste permit will be required from the Environment Agency for the management of extractive waste generated during construction, operation and decommissioning of the site. The Environment Agency will assess information submitted in support of a permit application to ensure that necessary measures are in place to prevent negative effects on the environment and human health brought about by the management of extractive waste. The application for a Mining Waste Permit must be accompanied by a Site Condition Report to describe the condition of the site at the time of permit issue. Baseline data which characterises the condition of the site may be required.*

Section 199 Water Resources Act

123. *A notice of intention to construct or extend a bore hole for the purposes of searching for or extracting minerals under Section 199 of the Water Resources Act 1991 (Form WR11) should be submitted to the Environment Agency.*

124. *A method statement detailing how the work would be undertaken in a way that protects water resources should accompany the Form WR11. The method statement should be based on the Hydrological Risk Assessment prepared at the planning and permitting stages. This should be submitted to the Environment Agency at least one month before drilling commences, however, the Environment Agency recommends that this is submitted early on in the permitting process. It should be noted that the use of drilling muds will be assessed during the permitting process outlined above.*

125. *The Environment Agency understand that the water for use in the drilling process would be tankered on to site and that at the exploratory phase there are no proposals to abstract ground or surface water for use at the site.*

Information and Recommendations

126. *Where it is intended to store over 200 litres of oil on an industrial, commercial or institutional site, the Control of Pollution (Oil Storage) (England) Regulations 2001 will apply. Where these regulations do not apply, any facilities, above ground, for the storage of oils fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bunded compound should be at least equivalent to the capacity of the tank plus 10%. All filling points, vents, gauges and sight glasses must be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipework should be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets should be detailed to discharge into the bund.*

127. *The design proposals for the groundwater monitoring boreholes should be submitted to the Environment Agency for review prior to installation. The boreholes should be installed in accordance with the Environment Agency document 'Guidance on the design and installation of groundwater quality monitoring points'.*

Environmental Permit

128. *The development will require an Environmental Permit under the Environmental Permitting (England and Wales) Regulations 2010 from the Environment Agency. The permit would control the management of extractive waste from prospecting for mineral resources. Further environmental permissions may be required dependent upon the specifics of the proposed activities.*

129. *Under the Environmental Permitting Regulations, permitted sites should not cause harm to human health or pollution of the environment. The operator is required to have appropriate measures in place at the site to prevent pollution to the environment, harm to human health and the quality of the environment, detriment to the surrounding amenity, offence to human sense or damage to*

material property. If this is not included within the Environmental Permit application then it is likely the Environment Agency would have to reject any application.

130. *The Environment Agency has also confirmed that they have not reviewed the air quality assessment as part of the planning process and note that it will be assessed as part of the Environmental Permitting process.*

131. **Health & Safety Executive** – *No objection.*

Shale Gas and Oil Wells

132. *Wells drilled to explore for shale oil or gas are designed and constructed to the same standards as conventional oil and gas wells that have been in operation in the UK for a number of years. There have been 350 onshore oil and gas wells drilled in the UK since 2000.*

133. *All wells must be constructed to recognised industry standards and are cased using steel and cement to ensure the risk of an unplanned leak of fluids is as low as reasonably practicable. Near the surface, whether there is nearby groundwater, or an aquifer, there are normally three layers of this steel casing. The operator would conduct a range of checks on the well to test for leaks. Suitable well control equipment must also be provided to protect against the risk of a release of fluids from the well.*

Health and Safety Regulations Applicable to Onshore Wells

134. *The HSE's regulatory regime is long-established and goal-setting. There are general duties under the Health and Safety at Work etc Act 1974 (HSWA). Those who create health and safety risks to workers or the public as part of their undertaking have a duty to manage and control the risks so far as is reasonably practicable. This is supplemented with more specific regulations particular to the extraction of gas and oil through wells, which includes shale gas and oil operations.*

135. *The Borehole Sites and Operations Regulations 1995 (BSOR) apply to all onshore oil and gas wells. These Regulations require notifications to be sent to HSE about the design, construction and operation of wells, and the development of a health and safety plan which sets out how risks are managed on site.*

136. *The Offshore Installations and Wells (Design and Construction etc) Regulations 1996 (DCR) include specific requirements for all wells, whether onshore or offshore, and include well integrity provisions which apply throughout the life of shale gas or oil wells. They also require the well operator to send a weekly report to HSE during the construction of the well so that inspectors can check that work is progressing as described in the notification.*

137. *The operator must also appoint an independent well examiner who has an important quality control role in ensuring that the well is designed, constructed, operated and abandoned to industry and company standards and that regulatory requirements are met.*

138. *This combination of duties ensures that the HSE is provided with information at key stages in the lifecycle of a well and also HSE inspectors to assess whether risks are being adequately controlled and, if not, to take appropriate regulatory action.*

How HSE Regulates Shale Gas Activity

139. *HSE's intervention approach has two main elements:*

a) *Specialist well engineers help develop best practice standards for the industry as a whole with the United Kingdom Onshore Oil and Gas (UKOOG), the onshore oil and gas operators group. All members of UKOOG have agreed to comply with these standards. The latest standards were published in February 2013.*

b) *The second element is to use risk-based interventions on particular sites and operators ensuring well integrity. HSE uses its team of expert well engineers who cover all types of hydrocarbon wells, both on and offshore. An oil or gas well is a complex engineering construction, most of which is below ground and not accessible to visual inspection. HSE therefore takes a lifecycle approach to well integrity, using the notifications and weekly well reports as well as meetings with the operator and on-site inspection to ensure the operator is managing the risks appropriately.*

What Information is Provided to HSE and When

140. *To comply with BSOR, the well operator must submit a notification to the HSE at least 21 days before work commences. It consists of information on the design and construction of the well including:*

a) *The design of the well;*

b) *Equipment to be used;*

c) *Programme of work;*

d) *Location, depth and direction of boreholes;*

e) *Its relationship with other wells and mines;*

f) *The geology of the drilling site;*

g) *Risks identified with the work and how these will be managed.*

141. *These notifications allow HSE to assess the well design before construction starts. This is a key phase of work where the vast majority of issues likely to have an impact on well integrity will be identified and addressed by the well operator. It includes ensuring that safety features are incorporated into the design. Inspectors will contact the operator if they have concerns or queries about the information supplied.*

142. *Further notifications are required if there is a material change to the information previously supplied in a notification.*

143. *To comply with the DCR, the operator must report to HSE every week during construction of the well and during work to abandon the well. This provides HSE with assurance that the operator is constructing and operating the well as described in the notification. If they are not, HSE can take the appropriate regulatory action. The weekly report gives details of all the work that has taken place since the previous report including:*

a) Well integrity tests;

b) The depth and diameter of the borehole;

c) The depth and diameter of the well casing;

d) Details of the drill fluid density which allows the inspector to gauge the pressure in the well and identify any stability issues.

144. *There is also a set of occurrences that the well operator must report to HSE under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations):*

a) A blowout (i.e. an uncontrolled flow of well fluid);

b) The unplanned use of blowout prevention equipment;

c) The unexpected detection of HS_2 (hydrogen sulphide – an explosive gas);

d) Failure to maintain minimum separation distance between wells;

e) Mechanical failure of any safety critical element of a well.

145. *Reporting of well incidents enables HSE to investigate those that would have an effect on well integrity and ensures the well operator secures improvements to their operations.*

Working with the Environment Agency

146. *The HSE has an agreement with the Environment Agency since 2012 covering joint regulation of shale gas operations. HSE and EA inspectors will meet all new and first time operators of shale gas wells to advise them of their duties under the relevant regulations and jointly visit all shale gas sites during the current exploratory phase of shale gas development.*

147. **NCC Reclamation** – *No objection.*

148. *The Health and Safety Executive and the Environment Agency regulate the various aspects of the borehole construction. Within the response from the Environment Agency is a requirement for a baseline survey of the site. This is considered most prudent and would form the basis of the validation report at the end of activities at the site.*

149. *The geological and water environment section of the EIA indicates that a monitoring programme (ground water and surface water) is to be agreed with NCC. This is crucial to the verification of efficacy of control measures and*

should be commenced prior to any ground works starting and should continue throughout the period of drilling operations and beyond cessation of such to ensure that any impacts are accounted and a natural equilibrium is confirmed.

150. *Section 9.131 refers to the land being restored to agricultural use. The initial base line survey should be used in a validation report to assess the impact of the drilling operations and a validation report to include ground condition (chemical composition) should be undertaken to compare and contrast with the baseline survey.*

151. *Within Section 9.126 it is noted that surface runoff would be designed for a 1:100 year storm event. It is suggested that this should be designed to include for climate change and have a 30% surcharge on the design.*

152. *In conclusion, it is recommended that the baseline survey of the site is undertaken prior to any work commencing on the site. The monitoring programme should account for risks identified within the EIA and include the condition of the ground and controlled waters prior to works. The monitoring should extend throughout the drilling operations and beyond the completion of drilling to validate the control measures proposed and establish that natural equilibrium conditions within the controlled waters exist.*

153. **Anglian Water** – *No objection*

154. *Anglian Water is a statutory consultee through Schedule 4 (zf) of the Town and Country Planning (Development Management Procedure) (England) Order 2015 in relation to development involving the boring for or getting of oil and natural gas from shale. Anglian Water is the Water Undertaker covering the area of the proposed development.*

155. *Anglian Water's assets register show that there are no assets owned by Anglian Water nor are there assets subject to an adoption agreement within the development site boundary. It should be noted that due to the private sewer transfer in October 2011 many newly adopted public use water assets and their history are not indicated on Anglian Water's records. As such, the applicant should be aware that the development site may contain private water mains, drains or other assets not shown on Anglian Water's records.*

156. *The principal water demand would be for use in drilling the well and for providing at site potable water associated ancillary works. The water would be supplied by Anglian Water's potable water supply network and Anglian Water is in discussion with the applicant on detailed arrangements to supply water to the site which may include on-site storage. It is expected that the proposal would require a connection to the network.*

157. *Groundwater protection matters primarily fall under the remit of the Health and Safety Executive and the Environment Agency permitting processes. Anglian Water note that the application is supported by technical appendix to the Environmental Statement Volume 2 Chapter 9 Geology and the Water Environment. The key considerations of the impact on groundwater are set out in Chapter 9, specifically:*

a) *The possible pollution to groundwater from spillages and the handling/management of drilling fluid and cuttings, suspended solids and other potential pollutants.*

b) *The integrity of the well design and its ability to prevent the escape of drilling fluids, gas and formation fluid directly into the groundwater and indirectly to surface water.*

158. *Section 9.1 of Chapter 9 sets out how potential impacts will be avoided, prevented, reduced or offset through the design and management of the site. Anglian Water note that reference is made to a baseline monitoring programme in advance of works being undertaken at site and the exploratory well being drilled. The boreholes would form part of a programme of Baseline Environmental Monitoring (BEM), as agreed with the Environment Agency. Anglian Water welcomes the proposal that borehole monitoring would continue beyond the baseline monitoring phase and into the construction, operation and decommissioning phases. This is important for early identification of any unforeseen impacts on groundwater from the proposed development.*

159. *The Environmental Statement also makes reference to the risk of loss of potentially polluting materials to groundwater during drilling being mitigated by compliance to industry guidance and regulation. The use of substances as part of the drilling would be subject to regulation through the site's Environmental Permit.*

160. *Anglian Water considers that this provides sufficient safeguards to ensure that risk of groundwater contamination is managed. The strict regulatory regime, the proposed mitigation measures and monitoring activity at the well site would ensure that this proposal would not have an adverse impact.*

161. **NCC (Flood Risk Management Team)** – *The Lead Local Flood Authority (LLFA) confirms that the site is not affected by pluvial or fluvial flooding and the information provided is sufficient to confirm that the LLFA has no objection to the proposed works.*

162. **The Coal Authority** – *The application falls within the defined coalfield but is outside of the Development High Risk Area. Accordingly, there are no recorded coal mining hazards at shallow depth affecting the site.*

163. *It is noted that the site falls within the licence area for past deep underground coal mining activity. The coal authority is therefore pleased to note that this potential risk to the proposed drilling activities is afforded due consideration as part of Chapter 9 of the Environmental Statement. Based upon a review of available sources of information the Environment Statement is able to conclude at paragraph 9.47 that the proposed exploratory drilling activities would not intersect any deep coal mine workings as there are no recorded coal mine workings under the site.*

164. **NCC Public Health** – *Public Health is not aware of any public health information about the local population to suggest an exceptional vulnerability amongst people likely to be affected by any emissions from the proposed development.*

165. *The response is based on the assumption that Public Health England has been consulted and that the permit holder/applicant would comply with all relevant best practice and industry guidelines.*

166. **Public Health England** – *The applicant's proposal is to develop a vertical exploratory wellsite to assist with the development of information on the shale gas in the underlying geology. Public Health England (PHE) understands that the proposed development does not include hydraulic fracturing. The drilling phase would last approximately 4 months; this is within a proposed development period of 3 years. In addition to the exploratory well, there will also be 9 monitoring boreholes installed to sample and monitor ground water and ground gas during the drilling of the exploration well. All fuels and associated chemical containers would have secondary containment and be stored on the lined well site with spill kits available. The monitoring boreholes are part of a programme of Baseline Environmental Monitoring (BEM), as agreed with the Environment Agency to be implemented in advance of the proposed development and provide monitoring throughout its duration.*

167. *The applicant has identified the majority of potential sources of atmospheric pollution from the development proposal. These include point source (use of diesel generators) and fugitive release (increased road traffic and construction dusts) during the construction, operation and decommissioning of the site.*

168. *The applicant has considered the potential air quality impact on nearby residential sensitive receptors using AERMOD dispersion modelling software. The potential combined effects of combustion emissions from both the mitigated onsite power generation plant and road vehicles has been assessed for receptors affected by both air emission sources. PHE note that the impact from onsite power generation plant has been predicted assuming that the onsite power generation plant would run continuously for a year. However, the drilling phase is predicted to run for 4 months and therefore the actual impacts would be lower than the modelled predicted values.*

169. *Modelling for the onsite power generation plant emissions predicted no significant long term nitrogen dioxide (NO_2) impacts, while short term levels at the two closest receptor locations were at a maximum of 30.2% and 43.1% of the hourly Air Quality Objective, based upon a one year modelling period, while the actual drilling phase would be 4 months. The modelling concludes that the emissions are within air quality standards protective of health at the nearby residential receptors. The applicant's assessment of the modelled levels is that the local air quality would not be significantly affected by the proposed development.*

170. *PHE agrees that it is important to ensure that robust environmental monitoring is conducted prior to, during and post the proposed operations. PHE encourage the Environment Agency, as the Regulator, to validate the suitability of the applicant's proposals for environmental monitoring so that any unexpected impact from operations would be detected and investigated promptly and results presented with comparison to relevant health-based standards, where applicable.*

171. *PHE base this response on the information contained in the application and the assumption that the applicant would take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry best practice. Based on this PHE has no significant concerns related to the proposal.*

172. **Highways England** – *No objection.*

173. *Highways England has confirmed that the predicted trip generation would have a negligible impact on the Strategic Road Network (SRN). It is expected that the worst case scenario would be through the construction period, which would generate approximately 56 daily movements over a 12 hour period. Highways England estimate that approximately 23% of the journeys to work would use the A1, and HGVs would account for approximately three trips per hour. Even if all the traffic associated with the development used the A1, given the low numbers involved the proposal is unlikely to have a material impact on the SRN.*

174. *Highways England has considered the proposal cumulatively with industrial development in Harworth (15/00971/OUT) and is of the view that there would not be any material change to the SRN operation. Highways England has confirmed that this would be the case even if all 56 movements were to use the A1.*

175. **NCC (Highways)** – *The construction activity would generate a maximum of 56 vehicle movements each day (28 in and 28 out), 36 of which would be classified as HGVs. The Highways Authority usually only requires a detailed Transport Assessment if a development is likely to generate in excess of 30 two way peak hour vehicle trips. Assuming HGVs count double (i.e. are equivalent to two cars) this proposal would generate the equivalent of 8 cars in the weekday peak hours. The Highway Authority is therefore content that this level of trip generation would not have a material impact on the surrounding road network.*

176. *The installation and subsequent removal of the drilling rig would generate less traffic but would include 16 abnormal loads (8 in and 8 out). During evaluation there would be 10 daily light vehicle movements (5 in and 5 out) and 1 HGV trip per fortnight.*

177. *It is noted that all HGV movements are proposed to be routed through Blyth to access the A1 via the classified road network. The Highway Authority has no issue with the amount of traffic the development would likely generate. It is for the planning authority to determine whether there are any likely resultant environmental issues, particularly through built up areas. It is acknowledged that St. Mary and St. Martin primary school is located on the A634 Redford Road between the site and the A1. The suggestion to restrict HGV movements to outside school start and finish times is welcomed.*

178. *It is proposed to provide a 13m wide site access onto the A634 with 4.5m x 215m visibility splays. The visibility splay to the northwest would encompass a lay-by and, therefore, could be restricted by the presence of parked vehicles. The Highway Authority will require the lay-by to be closed during the construction, drilling and decommissioning phases when most traffic would emerge from the site. This would require a Temporary Traffic Regulation Order*

to ban vehicles from using the lay-by. The provision of the visibility splays would require the loss of highway trees that would need replacing as part of the works.

179. *The Highways Authority requests conditions relating to the following:*

a) Lighting details;

b) Wheel wash and road cleaning details;

c) Routing and signage;

d) Visibility splays;

e) Prevention of the use of the layby;

f) Construction of the site access;

g) Removal of the site access.

180. *The Highways Authority has recommended a number of notes to the applicant. Firstly, it is an offence to deposit mud on the highway. Secondly, works undertaken on land outside of the applicant's control would require the applicant to enter into an agreement under Section 278 of the Highways Act 1980.*

181. *The Highways Authority has considered the proposed development from a cumulative perspective, specifically employment park development in Harworth. It is reported that there would be the equivalent of 1 car approximately every 7 minutes in the busiest period. This is deemed to be unlikely to make a material difference to traffic conditions, and certainly not to a point where it could be demonstrated that the cumulative impact of development would be severe.*

182. **NCC Countryside Access** – *There are no public rights of way affected by the application.*

183. **NCC Landscape** – *No objection.*

184. *The landscape and visual impact assessment of the proposed development has been carried out to the appropriate methodology.*

185. *The overall effect of the development on the physical characteristics has been assessed as moderate adverse for the short term operational phase and a negligible to slight beneficial change after final restoration which is not a significant effect. NCC Landscape agree with this conclusion.*

186. *The applicant has concluded that the overall landscape effects upon the application site and this part of 'Sherwood' (both 'Sandstone Estatelands' and/or 'Policy Zone 40: Babworth') as a whole are considered to be slight and not significant. The effects are adverse in nature during operational phases, with no change to the baseline after final restoration. NCC Landscape agree with this conclusion.*

187. *It is recommended that a landscape drawing should be produced to illustrate the potential for the site mitigation for adverse impacts on the landscape character.*

In terms of the 2 year "retention phase" of the development the soil bund should be partially screened by the offset perimeter fence and this in turn eventually screened by the existing roadside hedge if it is managed from the outset to increase in height and any gaps filled prior to development.

188. *There are six viewpoints which have been identified as experiencing a moderate adverse effect with none of these being assessed as significant. NCC Landscape agree with this conclusion.*

189. *NCC Landscape generally agree with the findings in the Visual Impact Assessment which identifies that there are no significant impacts to visual receptors. However, the use of photomontages would make it easier to verify the conclusions reached in terms of magnitude of effect on visual amenity. It would be useful if these could be supplied by the applicant for one or two of the viewpoints.*

190. *On balance, due largely to the temporary nature of the development the application is acceptable with regard to landscape character and visual impact.*

191. **Historic England** – *The submission confirms that there are predicted indirect impacts, which though adverse are not significant. Historic England has considered the cultural heritage section of the submission including the Zone of Theoretical Visibility (ZTV). The information is limited in demonstrating the potential impacts on designated heritage assets. Historic England advised at pre-application stage that the assessment is designed to ensure that all impacts are fully understood. Section drawings and techniques such as photomontages are a useful part of this and though a ZTV is included, it is not accompanied by visualizations to demonstrate the likely impact – irrespective of the temporary nature of the specific proposal. Consideration should also be given to undertaking a practical exercise with either a crane or balloons erected at the height of the proposed structures so that all parties are better able to understand the landscape impacts of the proposals. Historic England have been engaged in other developments where this technique has been used and it greatly assisted the identification of the key issues and impacts from which the resulting EIA was able to focus its assessment.*

192. *In line with paragraphs 128 and 129 of the NPPF, the MPA needs to be satisfied with the level of information to enable a robust and informed assessment of potential impacts. It is advised that a thorough assessment of the impact on setting needs to take into account, and be proportionate to, the significance of the heritage asset under consideration and the degree to which the proposed changes enhance or detract from that significance and the ability to appreciate it.*

193. *Historic England also advise that the likely implications of the proposal with associated activities (such as construction, servicing and maintenance, and associated traffic) needs to be set out in relation to impact on heritage, and it will be important to fully understand the impact this might have upon perceptions, understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of alterations to drainage patterns that might lead to in situ decomposition or destruction of below ground archaeological remains and deposits, and can lead*

to subsidence of buildings and monuments. The proposal would affect non designated archaeology and the submission confirms the site contains part of a Roman-period field system known as a 'brickwork-plan'. Historic England note the proposed programme of archaeological survey prior to construction and it is advised that further guidance is sought from NCC's archaeological advisor.

194. *In determining the application, the statutory requirement to have special regard to the desirability of preserving a listed building or its setting or any features of special architectural or historic interest which it possesses and the character and appearance of the conservation area must be taken into account by the authority when making its decision.*

195. *The importance attached to significance and setting with respect to heritage assets is also recognised by the NPPF and in guidance including the Planning Practice Guidance and the Historic Environment Good Practice in Planning Notes 1-3. Government policy and guidance is clear in defining significance which derives not only from a heritage asset's physical presence, but also from its setting. The NPPF further defines the setting of a heritage asset as 'the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral'.*

196. *In line with the NPPF, in determining the application the MPA must weigh the harm caused to the heritage assets against any public benefits deriving from the proposed scheme, and must consider whether sufficient information and clear convincing justification has been provided (paragraphs 129, 131, 132 and 134 of the NPPF). It is strongly recommended that further advice is sought from the NCC conservation officer and neighbouring authorities if applicable, and continued archaeological advice from NCC.*

197. *If, notwithstanding our advice you propose to approve the scheme in its present form, please advise Historic England of the date of the committee and send a copy of the report at the earliest opportunity.*

198. *Following the submission of additional information Historic England refer back to the advice previously given (as set out above) and recommend that issues outlined in their previous response are addressed.*

199. **NCC (Built Heritage)** – *No objection.*

200. *The application is accompanied by a Cultural Heritage assessment and a Landscape and Visual Impact Assessment (LVIA). NCC Built Heritage is content that these two chapters of the Environmental Statement provide adequate response to the requirements of the NPPF paragraph 128. The Cultural Heritage chapter is a thorough assessment of the potential impacts and cross references the LVIA to provide good evidence for the conclusions reached.*

201. *NCC Built Heritage is in agreement with the findings of Chapter 12 and the visual impacts that would be felt within the landscape. This would constitute a low level of impact on the setting of the nearest and most significant designated*

listed buildings and stems from the visual intrusion of the tall drill rig seen within the wider rural landscape. NCC Built Heritage is content that the level of 'harm' caused by the 60 metre tall drill rig would be less than substantial and ultimately mitigated (to the level of no harm) by the temporary (4 month) period of use of the rig. The other aspects of the proposal that are lower in height also have an impact within the rural landscape, but are likely to be largely invisible within the setting of the designated listed buildings and unlikely to cause any harm on their heritage significance.

202. *It is noted that there are some existing issues with traffic levels through the village of Blyth conservation area and increases in traffic levels contribute to the erosive impact on the rural character of the village. Traffic from the proposed development would affect Blyth for the duration of the exploratory well and, at its peak, would amount to a 26.5% increase in HGVs (for a 7 week period during construction and again during restoration) on the A634 part of the village conservation area. On balance, due to the short duration of the period of higher levels of HGV traffic NCC Built Heritage is content that the impacts of the proposals represent 'less than substantial harm' in terms provided by the NPPF. As such, the harm should be weighed against the public benefits of the proposal in line with the NPPF.*

203. *On the basis of the above, NCC Built Heritage agree with the conclusions in relation to indirect and cumulative impacts set out in the Environmental Statement.*

204. **NCC (Archaeology)** – *No objection.*

205. *NCC Archaeology is satisfied with the proposals set out in cultural heritage section of the Environmental Statement. It is recommended that a condition is used to secure a programme of archaeological mitigation.*

206. *NCC Archaeology has given consideration to whether the proposed development may cause drainage patterns to be affected leading to the dewatering of ditch fills, which in turn could cause decomposition of environmental evidence, e.g. in ditch fills. The "brickwork plan" field system known from North Nottinghamshire is an extensive landscape of probable Roman date consisting of fields, lanes and settlement enclosure usually on higher ground. There have been a number of developments which have affected areas of these cropmarks, including sand and gravel extraction at places like Misson and Barnby Moor. These demonstrate that the field boundaries are ditches, cut into the soft Sherwood sandstone, and by and large filled with sand. Finds are rare (although a recent evaluation manged to locate a Roman coin hoard in one such ditch), and the free draining nature of the soils and subsoils mean that there are only a very small number of sites which have a good survival of organic rich deposits which might be affected by de-watering. Most commonly these are close to watercourses and in areas of clayey alluviation. NCC Archaeology has checked the LIDAR (light detection and ranging) data for the area and there are no current or past watercourses visible on the site or in its vicinity. It is therefore concluded that the risks of dewatering are low. The chapter of the ES covering geology and the water environment makes it clear that there are a number of groundwater abstraction licences in*

the near vicinity, which additionally make it likely that dewatering will already have occurred.

207. **Natural England** – *No objection.*

208. *The application is in close proximity to Mattersey Hill Marsh Site of Special Scientific Interest (SSSI). Natural England is satisfied that the proposed development being carried out in strict accordance with the details of the application, as submitted, would not damage or destroy the interest features for which the site has been notified. The SSSI does not represent a constraint in determining the application.*

209. **NCC (Nature Conservation)** – *No objection.*

210. *The site is not covered by any nature conservation designations, but there are three SSSIs within 5km of the site (Mattersey Hill Marsh, Scrooby Top Quarry and Sutton and Lound Gravel Pits). In addition, there are two LWS within 2km of the site (Tinker Lane and Daneshill Lakes and Woodland). There are no European designated sites within 10km of the site. It is noted that the site is 1.7km north of the 5km buffer zone around the 'prospective' Sherwood Forest Special Protection Area.*

<u>Ecological and Species Surveys</u>

211. *The application is supported by a range of ecological work and the surveys that have been carried out are up-to-date, and have been undertaken using standard methodologies.*

Phase 1 Habitat Survey

212. *The majority of the application site is an arable field, under a carrot crop at the time of survey. A small area of semi-improved neutral grassland occurs along one boundary, whilst the site access would require the removal of a short section of hedgerow and loss of another small area of semi-improved neutral grassland within the verge of the A634. There does not appear to be a quantification of the area of headland and verge to be lost, but it is apparent they are comparatively small.*

213. *The road verge grassland cannot be considered species rich and is unlikely to qualify as Section 41 Habitat or Local Biodiversity Action Plan (LBAP) Habitat. The shelterbelt to the west of the application site does not qualify as Section 41 or LBAP Habitat.*

214. *The hedgerow bounding the field within which the application site sits qualifies as Section 41 Habitat 'Hedgerows'. The headland (the field edge between the planted area and the hedgerow) is stated as conforming to Section 41 Habitat 'Arable Field Margins'.*

215. *The habitats within and adjacent to the application site are all common and widespread, and none are unusual, scarce or of high ecological value. Nevertheless, measures should be required to minimise losses and to deliver mitigation.*

Reptiles

216. *Specific surveys were carried out in relation to reptiles, focusing on the semi-improved neutral grassland at, and adjacent to, the application site which was considered to provide suitable habitat. No reptiles were encountered during the surveys (although a single adult common toad was located).*

Birds

217. *No breeding bird survey has been undertaken. It is stated that the application site is "unlikely to be of critical value to the maintenance of any population of breeding birds of conservation concern taking into account the habitats present, their ubiquitous nature and intensive management for arable cropping". However, it is not indicated at what level this 'critical value' has been set (e.g. local, county or national).*

218. *Whilst the application site is likely to support a range of typical farmland bird species, it is noted that the desk study returned records of Corn Bunting from within a 2km search area (a rare and localised breeding species in Nottinghamshire), whilst the shelter belt provides suitable breeding opportunities for the Schedule 1 Hobby; both would be notable at county level. In the absence of bird surveys, it is not possible to determine whether either species is likely to be affected by the proposals, and therefore the need for species-specific mitigation is unknown.*

Bats

219. *The application site does not support any buildings, and none are present within 500m of the site. Similarly, the application site does not support any mature trees and none of the trees within the shelter belt were considered to have the potential to provide 'significant' roosting opportunities. Clarification on the definition of what constituted 'significant; opportunities was requested and provided by the applicant, which indicated that the trees subject to the assessment are of 'low' potential for roosting bats. On this basis NCC Ecology is satisfied that no further information or action is required with regard to this issue.*

220. *In relation to bat activity (foraging and commuting), the site and surroundings are assessed as being unlikely to be of importance as a foraging resource for bats, with only localised opportunities present and any roosts likely to be distant, although this assertion has not been proved through survey.*

Badgers

221. *No evidence of badgers was found at the site.*

Other Species

222. *There are no watercourses near the site that could be used by water vole or otter, and there are no ponds within 500m of the site so great crested newt are not an issue.*

<u>Potential Ecological Impacts – Direct Impacts</u>

Designated Sites

223. *There will be no direct impacts on designated sites.*

Habitats

224. *The loss of the Section 41 Habitats 'Arable Field Margin' and 'Hedgerow' have not been quantified, but in any event would be minor. It is requested that a condition is used to require the protection of retained vegetation (hedgerows and trees) during construction, and reinstatement of habitats during site restoration.*

225. *It is also noted that a 3m high soil bund would be created along the site's western boundary. To mitigate the loss of headland and verge it is requested that the bund is sown with a temporary seed mix; a pollen and nectar mix would be appropriate.*

Species

226. *With the exception of a small length of hedgerow, all boundary vegetation with the potential for use by foraging bats would be retained and protected. There would be a very limited direct impact on nesting bird using this habitat.*

227. *The field and headland would offer foraging opportunities for a range of farmland bird species, and nesting habitat for a small number of ground nesting birds (such as Skylark). Given the widespread nature of arable farmland in the vicinity, this loss would not be significant. However, vegetation clearance (stripping of ground nesting vegetation as well as removal of hedgerows) should be controlled during the bird nesting season through a standard condition.*

<u>Potential Ecological Impacts – Indirect Impacts</u>

Lighting

228. *The proposed development would require artificial lighting and the applicant states that the surrounding fencing would retain a wide dark corridor and maintain connectivity with the shelter belt. A Lux contour plan indicates the 0.5lux contour would be retained almost entirely within the development footprint and would not impinge upon the hedgerow to the south or east (except for a small amount at the site entrance). A condition is requested to ensure compliance with the light spill levels at the site boundary, as modelled.*

Noise

229. *It is evident that there would be elevated noise around the application site during both construction and operation, and more so during the former than the latter. This may give rise to impacts on breeding birds, as a result of disturbance (e.g. due to sudden unexpected noise, or by masking territorial songs and calls). Interpretation of noise impacts in the Ecology Chapter has been given cursory attention; construction noise has been completely ignored and in relation to*

operation, it misleadingly refers to increases in noise of 1dB (evening) and 3dB (night time). This is presumably as measured at the human receptors which were examined in the noise chapter. However, it seems unlikely that increased noise would give rise to significant noise impacts for the following reasons:

a) The application site, and the land surrounding it, is intensively managed arable farmland bounded by hedgerows; there are no areas of notable habitat within the area affected by elevated noise levels that might otherwise support significant populations of notable species.

b) Despite the absence of surveys, it is likely that only common and widespread (albeit declining) farmland bird species would be affected; the possible exceptions being corn bunting and hobby.

c) Elevated noise would be experienced for a relatively short period of time, so impacts would be short lived and it cannot be expected that any significant, long term effects would occur.

230. *In relation to potential noise impacts affecting corn bunting (which may or may not be present), given the abundance of similar habitat in the surroundings, it is expected that individuals would be displaced into surrounding habitat should noise be a significant impact. In relation to hobby, this species is protected under Schedule 1 of the Wildlife and Countryside Act from deliberate or reckless disturbance (although it is Green Listed). It is suggested that if development commences during the bird breeding season (April to August inclusive), a survey should be carried out to confirm that breeding hobby is not present, secured through a condition.*

Air Quality

231. *The sensitive ecological sites given consideration are Mattersey Hill Marsh SSSI; Tinker Lane, Barnby Moor LWS; and Daneshill Lakes and Woodland LWS and LNR. The assessment is based on all onsite power generation plant running continuously for a year, however, as drilling would only last for 4 months it is stated that actual impacts would be one third of the predicted values.*

232. *It is noted that the assessment is technical in nature and advice should be sought from the Environment Agency in terms of the methodology followed and conclusions drawn. However, NCC Ecology highlights the following:*

a) In Table 4-2 of Appendix 7-1, Tinker Lane LWS is correctly identified as being grassland habitat. However, in Tables 4-7 and 4-8 the habitat is listed as hedgerow. As a result, an incorrect Critical Load Range has been provided in Table 4-7, and the Process Contribution as a % of Critical Loads in Table 7-9 and 7-11 are presumably incorrect.

b) In Table 4-8 it is indicated that fen, marsh and swamp habitat is not sensitive to acidity. NCC Ecology cannot find any justification for this in the supporting text.

c) *In relation to the potential impact on Mattersey Hill Marsh SSSI, as a result of slightly elevated levels of nitrogen dioxide (NOx) deposition, it is essential that comments from Natural England are sought.*

233. *Notwithstanding the above, it is noted that the Process Contribution for NOx deposition (and concentration) is stated as being below the significance thresholds identified in Section 3.3.7 of Appendix 7-1 (Detailed Air Quality Assessment) in relation to the Critical Load/Level for each of the ecological receptors, when the 4 month operations period and emissions abatement is factored in. Therefore, a condition should be used to limit drilling to a four month period, and to require the implementation of emission abatement to deliver the reduction in emissions outlined at the start of Section 8 of Appendix 7-1.*

234. *Following the submission of additional information, NCC Ecology refers again to the technical nature of the air quality assessment and that advice should be sought from the Environment Agency, but nevertheless draws attention to the applicant's revised figures and conclusion that the 24-hour NOx impact on the Tinker Lane LWS would be below the 100% Critical Load/Level and therefore not 'significant pollution'.*

Dust

235. *Given the potential for dust to be generated by the development, a dust management plan should be secured through a condition.*

Hydrology

236. *Given that there are no watercourses on or near the site, and that the site drainage would be contained, impacts to surface water appear unlikely; nevertheless confirmation of this should be sought from the Environment Agency and compliance with the proposed details (mitigation measures) should be secured.*

237. *Specialist advice on the potential for sub-surface impacts should be sought from the Environment Agency or other appropriate source and from Natural England in relation to Mattersey Hill Marsh SSSI.*

Impact on European Designated Sites

238. *Nottinghamshire County Council is the competent authority for the purposes of Regulation 61(1) of The Conservation of Habitats and Species Regulations 2010, in relation to assessing planning applications which may affect European designated sites (SACs/SPAs). Given the distance that the site lies from the European Sites identified, and the fact that no impact on Hatfield Moor SAC/Thorne & Hatfield Moors SPA was predicted as a result of similar proposals at Misson Springs (which lies much closer to the site, at c.5.8km), it is reasonable to assume that there would be no impact on these sites as a result of the proposed development.*

239. **Nottinghamshire Wildlife Trust** – *Objection.*

Habitats

240. *The botanical survey was undertaken in September, later than the optimal time of year, and after part of the stewardship field margins had been cut. It is therefore possible that the diversity of the swards may have been underestimated. Notwithstanding, Nottinghamshire Wildlife Trust (NWT) agree that the habitats within the proposed development footprint are unlikely to be of LWS quality and the loss of those habitats from a botanical perspective is unlikely to be significant. There are however important habitats within the wider area that may be subject to indirect impacts from dust deposition; changes to the hydrological and hydrogeological regimes; and nitrogen and acid deposition.*

241. *NWT state that of particular concern are the potential impacts on the SSSI and LWS in proximity to the proposed site, namely Mattersey Hill Marsh SSSI, Daneshill Lakes LWS and Tinker Lane LWS.*

Dust Deposition

242. *Given the relatively short duration of the construction period and the use of dust suppression as standard on most mineral sites, NWT can concur that there would be no significant adverse impact on the LWS or Section 41 habitats provided mitigation measures are conditioned and rigorously enforced.*

Changes to the Hydrological and Hydrogeological Regimes

243. *The hydrogeology report concludes that to the north east of the proposed site there is groundwater and surface water connectivity around the River Idle. It also states that there may be groundwater connectivity at Daneshill Lakes and Mattersey Hill Marsh SSSI. The applicant states that the Daneshill Lakes Nature Reserve is "down gradient of the proposed site and so may receive a contribution of groundwater from the Nottingham Castle Sandstone aquifer in addition to the superficial deposits that lie adjacent to the Reserve locally". In view of this uncertainty the applicant has proposed in paragraph 9.144 that "The monitoring programme will allow early identification of any potential impacts on groundwater (and indirectly to surface water) from the proposed site, so that in the unlikely event variation from baseline conditions is recorded, mitigation measures would be agreed with Nottinghamshire County Council and the Environment Agency." No details of any such mitigation measures or controls are described or proposed and there is no information on the lag time of effects and how quickly any reverse of the impacts could be achieved, if at all. This provides little assurance that any necessary mitigation might be undertaken before an impact has actually happened in the LWS and/or the SSSI. This information is important in order to ascertain the risk of detrimental effects occurring on these important wetland sites and should be included in the application.*

244. *NWT does not agree with the applicant's conclusion that the significance of effect is negligible at Mattersey Hill Marsh SSSI and Daneshill Local Nature Reserve. The drilling operation has the potential to allow infiltration pathways for drilling muds (low toxicity or otherwise) and other contaminants into the*

groundwater in the superficial deposits and the aquifer, and whilst the applicant has asserted that the techniques proposed would be conducted in an exemplary manner, they have provided no evidence of where this has been done. In real life circumstances on construction and mineral sites, it is the case that things can and do go wrong, either through technical failure or human error, and that is how many pollution events occur. More information is required in this regard, including details of where Best Available Techniques (BAT) have been used in such fractured and unpredictable geology as this sandstone, without a pollution incident occurring. If this has been undertaken successfully before, as the applicant states, then it should be straight forward to provide this evidence.

245. *Mention is made in the report of groundwater in the Nottingham Castle Sandstone as base flows for the River Idle, but the potential impacts of the proposed development do not appear to have been specifically assessed for the River Idle. As catchment hosts for the River Idle, NWT are therefore not satisfied that an adequate Water Framework Directive (WFD) assessment has been undertaken.*

246. *In the absence of surface watercourses in the vicinity of the proposed development site, NWT are satisfied that the pollution of surface waters in the immediate area is a low risk. This does not, however, apply further afield, where groundwater and surface water may mix.*

Nitrogen and Acid Deposition

247. *The modelling shows that the levels for Nitrogen would be exceeded for both Critical Load and Critical Level for Mattersey Marsh SSSI and for Tinker Lane LWS, if drilling took place for 12 months, but not if reduced to a third for the 4 months proposed. NWT would be satisfied that there would not be a significant effect from NOx emissions on habitats if the drilling is limited to 4 months.*

Birds

248. *NWT note that a breeding bird survey has not been undertaken despite the potential of red list farmland Birds of Conservation Concern associated with both field margins, with the hedgerows and the L-shaped plantation. It is also highlighted that NWT requested such survey in their scoping response.*

249. *In the absence of any actual data, it is not possible to determine the direct impacts of habitat disturbance and loss, nor the direct impacts of noise and vibration. It is stated that there would be no impact from the loss of a section of hedgerow or from noise, yet the noise contours in the noise report clearly show that all four rig options would result in hedgerows and the plantation being exposed to elevated noise levels for an extended period. For example the T-49 rig would result in almost all the plantation exceeding 50dBA and some parts above 55dBA. This is likely to affect bird behaviour.*

250. *The construction noise plan shows that the entire plantation would exceed 69dBA and some would exceed 70dBA, which would result in a high probability of affecting bird behaviour, including potentially reduced fecundity and other effects such as masking of contact calls between chicks and parents. Given that the plantation woodland is a quite unusual habitat feature in an intensively*

farmed landscape, it cannot be assumed that the birds once disturbed would be able to move elsewhere. Therefore, the applicant's assertion that there are no sensitive ecological receptors is incorrect, as the survey work has not been undertaken to provide this information.

Bats

251. *No activity survey for bats has been undertaken, therefore it is not possible to determine whether bats would be affected by the proposed elevated noise levels and/or by vibration or light. No evidence of roost sites was found in the plantation, but it is possible that it is used by foraging bats, which could have been surveyed. Whilst assurances have been made in the application about reducing light spill, no specific assessment has been made on the likely impacts of increased artificial light levels from the proposed development on foraging bats. It is requested that this is undertaken. The plantation equates to approximately 1ha of wooded habitat and the value of this for foraging bats in a farmed landscape should be properly evaluated and the effects of the elevated, extended noise levels properly considered.*

Reptiles

252. *Survey work was undertaken and no reptiles were found, so there should be no impact on this group from the proposed loss of habitat. The period of time for the refugia to bed in was shorter than normal, however, NWT are satisfied that sufficient number of refugia were used.*

Amphibians

253. *A toad was found during the reptile survey, although the location of this is not described so it is not possible to determine whether the species is foraging in areas that might be affected by the proposed works. Toads are a Section 41 Species of Principal Importance and should be protected from adverse effects of development. As such, information should be provided on where the toad was found and efforts should be made to determine its population status on the proposed site and whether there would be impacts on this species as a result of the habitat removed.*

Other Fauna

254. *NWT are satisfied that no water voles or other riparian mammals are likely to be present, in the absence of suitable habitats. In addition, no signs of badgers were found but activity can vary from season to season and this should be reviewed before development takes place.*

255. *The greatest invertebrate interest was found within the road verge habitat which is floristically quite diverse. There would be a small loss of this habitat as a result of widening the current access track.*

Planning Policy

256. *Given the absence of necessary information to provide assurance that there would not be ecological impacts on a range of habitats and species, NWT*

believe the proposal is not compliant with policies M3.7 (Dust and Air Quality), M3.8 (Water Environment), M3.17 (Biodiversity), M3.19 (Sites of Special Scientific Interest) and M3.20 (Regional and Local Designated Sites) of the Nottinghamshire Minerals Local Plan. NWT are also of the view that the proposal is not compliant with Paragraphs 109, 118 and 120 of the National Planning Policy Framework.

257. **NCC Noise** – *The proposals are acceptable on noise grounds subject to conditions relating to:*

a) Details of the drilling rig to be employed to comply with night time noise levels of 42dB $L_{Aeq,1hr.}$ The submitted details should include all calculations and noise modelling to justify the plant selection and mitigation strategy.

b) The erection of noise mitigation, where required.

c) Noise monitoring at nearest residential receptors, or an alternative location agreed with the MPA, throughout the first full week of drilling to confirm that the night time noise levels of 42dB $L_{Aeq,1hr.}$ are achieved.

d) In the event of a written request from the MPA, the operator shall undertake a noise survey to ensure that drilling operations comply with day (55dB $L_{Aeq,1hr}$) and night time noise levels (42dB $L_{Aeq,1hr}$).

e) In the event that either the day or night time noise criteria are exceeded, noise mitigation measures shall be implemented.

f) The submission of a noise management plan, outlining the steps to minimise noise impact of the construction and drilling phases. This should also detail the noise monitoring methodology and measures to enable noise mitigation (if necessary) to be sourced and erected quickly.

258. **Peel Airports (Finningley) Limited** – *No objection. As the proposal would be used 24 hours a day, it is stated that flood lighting should not create a distraction to inbound pilots as the development is 12km distant and next to the final approach funnel.*

259. **Civil Aviation Authority** – *The CAA do not wish to make any comments.*

260. **National Air Traffic Services Ltd** – *The proposed development does not conflict with the safeguarding criteria.*

261. **Netherthorpe Airfield** – *Sheffield Aero Club, which operates from Netherthorpe, has no objections as the site is not within its flying zone.*

262. **National Planning Casework Unit** – *No comments.*

263. **CPRE Nottinghamshire** – *Objection.*

264. *CPRE note that the application is for exploratory drilling over a three year period in a countryside area. It is also noted that permission is sought for security cabins which are already on site, which suggests that the applicant does not appear to have had due regard for planning requirements – a situation which*

does not inspire confidence in the future conduct of the applicant. The lack of confidence is exacerbated by the understanding that Dart Energy breached conditions at an exploratory Coal Bed Methane (CBM) well site in Lound.

265. *It is noted that the applicant states that all vehicles can be routed via Blyth and avoid any surrounding villages which may not have the required standard of highway to accommodate HGVs. CPRE highlight that Blyth is only a village itself, with a population of 1,233 (2011 census). Access to the A1(M) would take place via the A634 Retford Road and the B6045 and the applicant notes that Blyth is centred on the crossroads of the A634 and the B6045. Particular concerns are that:*

    a) *The fracking process requires many lorries carrying material (some of which can be highly toxic) to and from the site;*

    b) *The route described includes small traffic junctions;*

    c) *Vehicles carrying toxic waste will also be travelling directly past Blyth Primary School.*

266. *There is a danger that poor development decisions could endanger the tranquillity that exists in the locality. Noise may carry across the area for miles in all directions. There is likely to be noise from compressors, pumps and the large number of heavy vehicle movements. The noise assessment should be subject to independent verification. Work would take place 24 hours per day over several months in what is at present a quiet part of the countryside. This could result in sleep disturbance and increase stress.*

267. *Lights from the development during darkness would be intrusive and disturbing to residents and wildlife. There may also be air pollution from ozone, hydrocarbons, dust and the venting and flaring of methane. In addition, the exhaust emissions from HGV traffic, compressors and diesel generators would create increased air pollution near the site. This would expose wildlife, local people and workers to substances that are harmful to health and increase the risk of health problems.*

268. *There could be impacts on wildlife in Mattersey Hill Marsh SSSI and Daneshill LWS/LNR resulting from light, noise, vibration and water pollution. There could also be impacts on breeding and hibernation and vibration would impact on owl and other small mammals. This could result in species leaving the area and affect ecological balance.*

269. *It is requested that the applicant clarifies their long term plans for the well site, including how many new wells are to be drilled and how much fracking would be required.*

270. *Reference is made to the proximity of the development to an aquifer and concern is raised that it may be contaminated.*

271. *Concern is raised about the development causing subsidence and the existence of old mine workings is highlighted.*

272. **Frack Free Nottinghamshire** – *Objection.*

Background and concerns regarding Dart's/Igas' financial position

273. *Concerns are raised about IGas, as Dart Energy's parent company, and its financial viability. The falling share price of IGas is highlighted. It is stated that neither Dart, nor IGas has much experience of extracting shale gas. It is noted that Total are part funding the shale gas exploration, but Frack Free Nottinghamshire (FFN) question whether they would take any financial or legal responsibility if something goes wrong. Note is had to the NPPF which allows for a bond to be secured in exceptional circumstances, but it is suggested that it would be more appropriate to reject the application.*

274. *FFN highlights the representations it made on the planning application for exploratory boreholes at Springs Road, Misson regarding IGas' financial state. FFN considers that the position has not changed in the interim period and IGas is a loss-making business whose financial structure and ongoing performance continues to cast doubts as to its future ownership and viability. In particular, FFN consider IGas may have difficulty in raising additional finance to underwrite (via bonds) its commitments in respect of completing exploration and restoration works.*

275. *Given the level of risk, FFN would support a requirement for IGas to pay a bond, ideally into an account held by a third party, to guarantee liabilities and to protect the local environment should the project be abandoned after it has been started. As at Misson, FFN considers that the exceptional circumstances sufficient to justify a bond (NPPF paragraph 144) do apply. The MPA should take early steps to establish accurate costings to restore the site to agricultural use, including strengthening its expertise in such matters. FFN also advocates greater transparency in the restoration arrangements made with IGas such that the committee and the public can exercise more scrutiny.*

276. *If IGas is unable to deposit sufficient funds for a restoration bond FFN considers this would be evidence enough that its finances are too limited for the project to proceed. FFN makes reference to an injection of capital from a private equity company, but this appears to be a provisional arrangement and may yet unravel.*

277. *FFN highlights the Planning Practice Guidance which states that "a novel approach or technique" is a reason for requiring a bond guarantee. FFN understands that IGas will be using deep horizontal drilling which is a relatively novel technique in the UK and so further supports the provision of a bond.*

278. *FFN also recommends that the County Council reviews whether IGas' increased indebtedness will compromise its PEDL licence, which requires compliance with the Oil and Gas Authority's financial viability rules, before on-site works are carried out. FFN believes these further uncertainties increase the merit in pursuing an outright refusal of the application on the grounds of its impact, or at least a delay in approving it until IGas can demonstrate a clear capacity to sign and conform to the legal agreement for the Misson site.*

279. *Reference is made to drilling by Dart Energy at Daneshill where breaches of planning conditions occurred. It is also highlighted that the applicant has already erected a site compound at Tinker Lane without planning permission.*

Geology

280. *Concern is raised that a 3D seismic survey has not been undertaken. In the absence of this information there may be unknown fault lines and uncharted coal mining activity. FFN state that local knowledge indicates past working from Harworth Colliery occurred in the area.*

Ecology and Site Selection

281. *The proximity of the site to Mattersey Hill Marsh SSSI and Daneshill and Tinker Lane (Barnby Moor) LWS is highlighted. FFN raise concern about the impact on the volume and quality of groundwater and questions are raised about the level of survey work undertaken. Concern is also raised about whether the mitigation measures proposed are sufficient to claim that no significant adverse impacts would occur.*

282. *FFN question the applicant's consideration of alternatives and highlight that no other individual sites were examined and constraints identified do not appear to have been weighted.*

283. *FFN support the objection made by Nottinghamshire Wildlife Trust and is of the view that the development is not compliant with paragraphs 109, 118 and 120 of the NPPF and Policies M3.7 (Dust and Air Quality), M3.8 (Water Environment), M3.17 (Biodiversity), M3.19 (SSSIs) and M3.20 (Local Designated Sites) of the Nottinghamshire Minerals Local Plan.*

Economic Costs and Benefits

284. *FFN believe that the long term economic benefits of industrialising the rural areas of North East Bassetlaw would be negative, as would the short term effects as a result of blight. Reference is made to the draft DEFRA report 'Shale Gas: Rural Economy Impacts Paper' and the negative impacts that could occur as a result of shale gas. It is claimed that the development could result in reduced property values.*

Traffic

285. *It is stated that the development would directly and adversely affect traffic levels and conditions on the A634 between Barnby Moor and Blyth. The HGV route results in dangers to other road users in Blyth which has narrow roads and small traffic junctions. It is also reported that the development would result in vehicles carrying toxic waste past Blyth Primary School. Risks to children, pedestrians, cyclists and horse riders are highlighted. The increase in HGVs is reported to result in increased noise, air pollution from dust and fumes, vibration and damage to verges and pavements.*

Landscape and Visual Impacts

286. *The drill rig would be prominent across the landscape, especially when illuminated at night time. The moderate impact asserted by the applicant is disputed by FFN, and they disagree that there would be no significant landscape or visual effects.*

Noise and Vibration

287. *Concerns are raised about noise, vibration and seismic activity. It is noted that the noisiest activity is highest during construction and rig mobilisation. If construction and restoration takes place from 07:00 to 19:00 on weekdays and until 13:00 on Saturdays, this would result in disturbance during a quiet part of the countryside. Maximum noise levels of over 70dBA is noted at a nearby plantation and it would be higher than this along nearby hedgerows. FFN are concerned about the impact on birds and bats using this habitat, as well as the lighting. FFN are of the view that a proper assessment of the impact on wildlife has not been made. Concern is also raised about noise from HGV movements.*

Air Pollution

288. *Air pollution is a concern and attention is drawn to HGV movements, generators and venting and flaring of waste gases. FFN state that this would lead to unavoidable increases in NOx, particulates, volatile organic compounds and dust. This would have health and safety and ecological implications.*

289. *FFN is of the view that the applicant has not assessed the impact of potential air pollution and dust on Mattersey Hill Marsh SSSI and it is acknowledged that it would cause a significant increase in NOx and acid deposition which would add to critical load levels which are already exceeded. There would be even more air pollution if the applicant progressed beyond the exploratory and appraisal activities.*

Water Pollution

290. *FFN question the applicant's statement that the development would not impact on groundwater, surface water, water abstractions, recreational users or designated ecological habitats near to the application site. FFN state that the development undermines the Water Framework Directive, which requires a precautionary approach.*

291. *It is stated that the site is close to an aquifer with a Source Protection Zone (1 and 2) east of Barnby Moor used for drinking water. There is concern that the development could result in contamination of the aquifer as a result of leaks and spills during production or at some time in the future. It is claimed that wells fail over time.*

292. *Concern is raised about the Pressure Determination Test and FFN state that there may be a significant amount of flow back water containing radioactive material, heavy metals and carcinogenic hydrocarbons such as benzene. It is also reported that there is the potential for such materials to migrate along fault lines.*

293. *FFN state that if surface and groundwater migrates west to east, it would steer any pollution towards Daneshill Lakes, the River Idle and associated drains. It is also suggested that there could be a reduction in water levels of lakes.*

294. *Concerns are raised about over use of water should development progress to full scale fracking, or the possibility of water having to be imported by tanker or piped in.*

Climate Change

295. *Reference is made to Section 182 of the Planning Act 2008, Paragraph 93 of the NPPF and Policy SP4 of the emerging Nottinghamshire Minerals Local Plan which relate to climate change. FFN state that shale gas is worse than coal as a result of leakage. Reference is made to the Committee on Climate Change which states that emissions require major mitigation with three tests being met. FFN state that the Government has accepted this approach but has not specified how and when it can be achieved. FFN also state that shale gas production should be considered incompatible with the legal requirement to reduce greenhouse gas emissions, and with a policy emphasis on a decarbonised UK energy mix.*

Public Health

296. *Public health is raised as a concerns by FFN and reference is made to an analysis of public health implications of fracking produced by Concerned Health Professionals of New York and a revised report by Medact [an organisation formed by health professionals to raise awareness and speak out on health issues] which has highlighted various potential impacts on local populations in the UK. It is acknowledged that this application is not for actual shale gas production but the evidence adds to the anxiety of people in the surrounding area.*

297. *FFN has also submitted a compilation of newspaper articles which relate to wastewater wells in Oklahoma; health risks near fracking sites; fracking being banned in Victoria, Australia; and, what was at the time of their submission, the ongoing judicial review of North Yorkshire's decision to grant planning permission for fracking near Kirby Misperton.*

298. **Nottingham Friends of the Earth** – *Objection.*

299. *Nottingham FoE raise concern about the Company Dart Energy and reference is made to a borehole which was drilled at Daneshill and resulted in breaches of condition and that a site compound has been erected at the Tinker Lane site without planning permission.*

300. *Reference is made to Dart Energy's parent company IGas and it is stated that they are not financially stable. It is suggested that consideration should be given to requiring a bond to be paid before any work starts.*

301. *Concerns are raised about the proposed route for HGVs associated with the proposed development and it is stated that Blyth already suffers an unacceptable level of HGV traffic. It is also questioned what would happen in*

the event of a blockage on the A1 and that restricting movements during school drop-off and pick-up hours would intensify traffic at other times. Overall, it is stated that traffic through Blyth has been inadequately assessed in relation to noise, air pollution and increased traffic.

302. *Concern is raised about multiple additional boreholes which could require continuous drilling for a number of years. This would result in long term industrialisation of this site and there would be a net negative effect on the local economy.*

303. *It is stated that adequate surveys have not been carried out for breeding birds and foraging bats and that these species would be affected by 24/7 noise and light. It is noted that maximum noise levels could reach 55dBA at some of the closest farm dwellings, over 70dBA at the nearest plantation and even higher along some of the nearby hedgerow. This would cause harm to birds and bats using this habitat, particularly when 24 hour lighting is taken into account.*

304. *It is stated that no 3D seismic survey has been carried out. As such, Nottingham FoE is of the view that there is inadequate knowledge of fault lines and uncharted coal mines.*

305. *It is highlighted that the site is underlain by a major sandstone aquifer and the site is within Source Protection Zone 3 with abstraction for drinking water and agricultural purposes. It is reported that there is potential for groundwater movement towards Daneshill Lakes, Mattersey Marsh SSSI and the River Idle. The precautionary approach to protecting groundwater outlined in the Water Framework Directive is also highlighted.*

306. *It is recommended that total drilling time at the site should be limited to ensure that nitrogen deposition does not reach levels at which impacts could be significant.*

307. *Nottingham FoE note that development plans are required to include policies on climate change as highlighted in the S182 of the Planning Act 2008, reflected in Paragraph 93 of the NPPF and SP4 of the emerging Nottinghamshire Minerals Local Plan. Reference is also made to a recent report by the Committee on Climate Change which advises that "exploiting shale gas by fracking on a significant scale is not compatible with UK climate change targets unless three tests are met". Nottingham FoE state that the Government have made it clear that these tests are not going to be met in the near future and therefore at the current time significant shale gas production would not be compatible with climate change targets. Therefore, it would be appropriate on climate change grounds to reject shale gas exploration proposals such as Tinker Lane because the Government has not taken seriously the need to improve regulation.*

308. **Friends of the Earth** – *Objection.*

309. *Friends of the Earth (FoE) objects due to impacts on traffic; risk to groundwater; and impacts on wildlife from noise and lighting disturbance. FoE are of the view that the need for the application is lessened by the imperative to tackle climate change.*

Climate Change and the Need for Development

310. *Reference is made to policy and guidance in relation to climate change, including Bassetlaw's spatial policy on climate change (Policy SO6); paragraphs 6, 93 and 94 of the NPPF; and Policy M3.1 of the Nottinghamshire Minerals Local Plan. Reference is also made to the Secretary of State's appeal decision on peat extraction at Chat Moss which stated the development would be contrary to relevant policies on climate change. FoE state that there is no guarantee that extraction of fossil fuels across regions balance themselves out and development would not fit within the UK's timescales for reducing carbon emissions from electricity generating power stations by 2030.*

311. *FoE state that the applicant has not considered greenhouse gas emissions and that this information should form a request for further information.*

312. *FoE state that an exploratory well does not contribute to energy security and must be considered on its merits alone. As such, significant weight cannot be attached to the economic benefits of the development as the energy supply and subsequent productivity and growth would not be delivered by this application.*

Transport

313. *Attention is drawn to Bassetlaw's plan which identifies a need to reduce travel by private car; Nottinghamshire's Minerals Local Plan Policy M3.15 which considers the viability of more sustainable forms of transport; and Paragraph 30 of the NPPF which encourages reduction in greenhouse gases and reduction of congestion. Concerns are raised about the number of HGVs and the route that they would be taking. It is considered that this could result in risk to road users and impact on amenity, and that these issues have not been fully considered.*

Water and Wildlife Impacts

314. *Attention is drawn to Policy M3.8 of the Nottinghamshire Minerals Local Plan, Paragraph 143 of the NPPF and the Water Framework Directive which seek to protect ground and surface water. Reference is made to studies which show risks to surface water from spillage and shale gas constituents being detected in groundwater.*

315. *It is highlighted that the site lies within a Zone 3 (Total Catchment) Source Protection Zone (SPZ) and that there are two designated wildlife sites down gradient of the site which means that they are at risk if a spillage occurs.*

316. *Concern is raised that mitigation measures mentioned in the application (Paragraph 9.144) to protect groundwater are not described and therefore cannot be assessed. It is highlighted that there may be a continuation of activity at the site if drilling and evaluation suggest that further use of the site might be viable. FoE state that the applicant acknowledges the potential for the drilling operation to introduce contaminants to the SPZ but does not consider whether mitigation could deal with the presence of old mine workings. FoE consider the impacts of the development would not be compatible with the Nottinghamshire Minerals Local Plan policies M3.17 (Biodiversity), M3.19 (SSSIs) and paragraph 109 of the NPPF which relates to the natural and local environment.*

Nitrogen Deposition

317. *It is noted that if drilling takes place over a 12 month period nitrogen deposition would exceed critical loads. It is recommended that a condition is used to avoid this from occurring.*

Noise

318. *Reference is made to noise policy in the national Planning Practice Guidance and Policy M3.5 of the MLP. FoE consider that noise would be at levels that may affect wildlife and this has not been adequately addressed. It is suggested that the MPA requests further information in this regard.*

Coal Workings

319. *FoE state that there appears to be a lack of information regarding old coal workings. It is noted that the Coal Authority only state that they are not aware of any workings within 20 metres of the site and FoE consider that their records could be incomplete. FoE request further information.*

320. **Bassetlaw Against Fracking** – *Objection.*

321. *It is acknowledged that the application is for a test bore hole, and comments are made within this framework. However, Bassetlaw Against Fracking (BAF) believe it is disingenuous not to consider the longer term consequences of allowing exploration as it foreshadows commercial hydraulic fracking for gas extraction.*

Rurality

322. *Attention is drawn to the NPPF requirement to strike a balance "between economic growth and ensuring new developments do not have an adverse impact on existing or future communities". BAF is of the view that this balance has not been struck and attention is drawn to the height of the rig which at 60 m would be visible from the A1 and surrounding areas. There would also be fencing, cabins and associated works which would industrialise the rural area.*

323. *Attention is drawn to Policy DM1 of the Bassetlaw Core Strategy and BAF is of the view that the development would be contrary to the policy's aim to "enhance the rural character" and "minimise the impact on the countryside". Concern is raised in relation to the impact of the development and associated traffic, noise, machinery and drill rig. Concern is also raised in relation to removing food producing land from the region.*

324. *BAF are of the view that the rural nature of the area would be changed in the short and long term and the development would have unacceptable impacts on the environment and residential amenity in contravention of emerging Policy MP12 of the Nottinghamshire Minerals Local Plan draft submission.*

Heritage

325. *Barnby Moor is mentioned in the Doomsday Book and is a small hamlet not of the capacity to absorb major development. It is reported that the Pilgrim Father's 400th anniversary is going to be celebrated and the parishes of Babworth, Scrooby and Austerfield have special local significance. BAF are of the view that the development is contrary to Policies DM8 and DM10 of the Bassetlaw Core Strategy.*

Traffic

326. *Attention is drawn to recurrent delays on the A1 which traffic from the proposed development would feed into. It is also highlighted that traffic from the development would pass a school and through an area with parking difficulties, narrow roads and bottlenecks. Concern is raised about the ability of Blyth to accommodate HGVs and BAF is of the view the development is contrary to Policy CS8 of the Bassetlaw Core Strategy. Attention is drawn to delaying traffic, noise and emissions.*

327. *Concern is raised that if a blockage occurred it would result in difficulty for emergency services accessing Blyth. The proposed level of 5 HGVs per hour is considered to be a significant impact increasing the risk of accidents. Attention is also drawn to cumulative impacts with the Harworth storage depot.*

328. *BAF state that the visibility from the site entrance is poor and even if trees and hedges are removed there is a blind bend. Concerns are raised about the impact on horse riders and cyclists. BAF are of the view that the development would create a potential danger and contravene Policies M3.13 and DM3.*

329. *The coordination of traffic around school drop off and pick up times is noted, but BAF highlight that this does not take account of childcare either side of the day, breakfast clubs and after school activity.*

Air Quality

330. *BAF disagree that the air quality impact would be negligible and attention is drawn to HGV movements and dust impacts. It is reported that the reduction in air quality would impact on local health, wildlife and farming in the area. The potential for cumulative impacts is highlighted with attention drawn to the A1, Robin Hood Airport and the Finningley and Rossington Regeneration Route (FARRS) near to the proposed development.*

Noise

331. *Concerns about noise are raised with the drilling taking place 24 hours per day for a 4 month period, as well as the traffic movements. BAF are concerned that noise has been measured near to the site rather than at the site and that noise from the A1 is used to mitigate the application rather than it being acknowledged that there would be more noise, but from a different location. There is also concern about reversing vehicles.*

332. *BAF state that there would be vibration caused by heavy vehicles, drilling and associated site construction. It is also reported that the area suffers from subsidence and this is not considered in the application.*

Geology

333. *There is concern that the applicant has chosen not to undertake 3D seismic surveys, particularly as there are old mining shafts in the area. It is also reported that Ranskill has experienced a sink hole. BAF request that 3D seismic surveys are undertaken before any drilling takes place. BAF are of the view that there may be un-plotted mines beneath the site, based on anecdotal evidence from local miners. As such, they consider that due to the local geology, faults, mines, and water courses it is inadequate to attempt to drill without testing the stability of the local area.*

Water

334. *Attention is drawn to an aquifer which would be drilled through. It is reported to provide drinking water and it is requested that further research is undertaken to assess the impact of drilling though an aquifer. It is also reported that the area is designated as being of high groundwater vulnerability. Reference is made to a report by a Professor David Smyth which was commissioned by BAF in relation to an exploratory well site near Misson. It is acknowledged that the report relates to a different site but it is still recommended that further investigation is undertaken before drilling through an aquifer. Concern is also raised about contamination of local water sources which would impact on local farming and food as well as local wells used for domestic consumption and farm use. Impacts on Mattersey Marsh SSSI and Daneshill Lakes are also raised.*

335. *BAF state that that applicant does not know where water used in the process would come from and this should be resolved.*

Environment

336. *Concern is raised about the landscape and visual impact, which would be dramatically changed. BAF disagree with the impact being assessed as moderate.*

Ecology

337. *BAF question the assumption that the area is low in fauna and highlight the proximity to Mattersey Hill Marsh SSSI and Daneshill Lakes. As such, more detailed surveys are requested. The comments made by Nottinghamshire Wildlife Trust are supported.*

338. *It is stated that the area is sensitive to surface water and the SSSI could be groundwater dependent. Robust hydrological and hydrogeological modelling is requested.*

339. *Concern is raised about the level of consideration given to bats, with there being a lack of investigation. It is suggested that there should be more in depth surveying in times that avoid hibernation periods.*

340. *BAF is of the view that the development is contrary to Bassetlaw District Council Policy DM9 (Green Infrastructure) and it undermines Nottinghamshire's Sustainable Community Strategy 2011-2020. It is also stated that the application conflicts with Policies M3.17 (Biodiversity), M3.19 (SSSIs) and M3.20 (Regional and local designated sites). It is also stated that the development is at odds with the NPPF as it does not support 'the transition to a low carbon future' or achieve 'net gains for nature'.*

Climate Change

341. *It is highlighted that the UK has signed legislative instruments to support the international accord made on climate change in Paris in 2015, and the European Parliament has passed a resolution urging all member states not to proceed with fracking operations. It is also claimed that the Government is sitting on a report that is thought to be advising against fracking.*

342. *BAF is of the view that the development would undermine Bassetlaw District Council Policy DM10 as it would affect the landscape, involve loss of agricultural land and is not compatible with tourism.*

Regulation 22

343. *Following the submission of Regulation 22 information, BAF have concerns about the financial stability of Dart Energy, as a subsidiary of IGas. They have also raised concerns about the applicant's association with INEOS. This concerns BAF as they state that INEOS will use the gas for production of plastic at their Grangemouth facility, rather than for domestic energy generation. They also have concerns about the health and safety record of INEOS.*

344. *Concerns are raised that the applicant has historically breached planning conditions and that there is currently unauthorised development at this application site. As a result, BAF say the company cannot be trusted.*

345. *Reference is made to shale gas extraction being banned in other countries and research that the process is not safe. BAF acknowledges that this application does not involve fracking, but warn that it will lead to fracking. This could result in future leakage and consequent pollution of the water table. It is suggested that the precautionary principle is exercised and that the application is refused.*

346. *Other concerns, some of which were previously raised, include:*

   a) *Air Quality – diesel engines will cause pollution and vehicles pass a school. It is suggested there should be baseline monitoring.*

   b) *Noise – Houses are a few yards from the drilling site and there would be 24 hour operations.*

   c) *Smell – There will be odour from diesel fumes and this would affect the Old Bell Hotel at Barnby Moor.*

   d) *House Sales – residents will, and are, finding it difficult to sell properties. No compensation is being provided.*

e) *Health – There is research that shows health issues for those living near fracking sites. Health baseline survey of residents should be undertaken.*

f) *Road Safety – There are sweeping bends either side of the access and there is a risk of accidents. Warning signs should be erected.*

g) *Landscape Deterioration – The drill rig will be seen from miles around. In addition, the site is currently agricultural land and a bond should be secured to restore it to this state if permission is granted.*

h) *Climate Change – The decision should take account of international agreements such as the Accord made in Paris in December 2015, and these override planning criteria. There is concern that methane will leak from pipes and it is suggested that all fossil fuel use should be dramatically reduced.*

i) *Precedent – The Company is trying to move forward in tiny stages pretending their actions are not about fracking.*

347. *In addition, BAF has submitted to the County Council a copy of a press release which criticises a decision by the Government to award a £31 million research grant for fracking safety to the National Environment Research Council. The press release concludes by urging NCC "not to go ahead with decision-making over the even exploratory drilling between Blyth and Barmby Moor [sic]".*

348. **United Kingdom Onshore Oil and Gas (UKOOG)** – *Support the proposed development.*

349. *UKOOG is a membership organisation fully funded by its members, open to all UK onshore licence holders, operators and supply chain companies to the industry. IGas is a member of UKOOG.*

350. *Gas provides 84% of homes with heat, 61% with the means to cook, up to 50% of electricity and the employment of 500,000 people in industries that turn natural gas into everyday products such as computers, mobile phones, cosmetics, medicines, fertilisers for farmers and solar panels. The East Midlands consumes 9% of England's gas and has the third highest regional mean domestic consumption in the country.*

351. *In 15 years from now the UK will be importing more than 75% of the country's gas without natural gas from shale.*

352. *At present the industry is in the exploration phase and is trying to answer a number of questions such as where the gas is, how it will flow and how much it will cost. The East Midlands has already experienced significant but unobtrusive oil and gas activity without environmental and safety issues. Today the East Midlands is one of the most important oil and gas areas in the UK.*

353. *The UK has a strong regulatory system that looks at all risks, the probability of them happening, what the physical pathways for that risk to travel could be and how the risk could be reduced. UKOOG state that there is no one with greater vested interest in ensuring all operations meet the highest standards than the industry.*

354. *UKOOG state that the four regulators each have a specific role to play – the Minerals Planning Authority with respect to local issues such as noise and transport; the Health and Safety Executive with respect to well integrity and compliance with borehole legislation; the Environment Agency with respect to air, soil and water, and issue up to 9 environmental permits connected to 17 European Directives and finally the Oil and Gas Authority which ensures the operator has the right operation experience and financial capacity alongside approving the environmental risk assessment before advising the Secretary of State on giving drilling consent. UKOOG state that this provides a formidable regulatory framework with no gaps.*

355. *UKOOG notes that the GMB union has pointed out that we need to honestly consider the moral and environmental issues about transporting gas across oceans and continents and being increasingly dependent on gas from countries with regulatory and environmental and human rights standards lower than ours.*

356. *UKOOG state that the East Midlands has the history, the UK has the correct regulatory system and the economic and environmental need for home-grown natural gas. For these reasons UKOOG urges the County Council to approve the application to allow a better understanding of the geology in the area.*

357. **East Midlands Chamber –** *The Chamber endorses the proposed development of a hydrocarbon wellsite on land off the A634 between Barnby Moor and Blyth.*

358. *The chamber believes that exploratory boreholes are the first step towards developing a viable shale industry in the East Midlands that could yield positive economic benefits for the region in terms of inward investment, jobs and supply chain engagement.*

359. *Using energy produced domestically would mean the UK is much less exposed to rising prices and volatile foreign markets; and the Chamber hopes that the council recognises this potential to also provide security of energy supply to a number of major regional manufacturers.*

360. **Severn Trent Water –** *no objection subject to the inclusion of an informative regarding the use or reuse of sewer connections either direct or indirect to the public sewerage system, for which the applicant would be required to make a formal application to Severn Trent Water under Section 106 of the Water Industry Act 1991. A further informative is recommended advising that, whilst Severn Trent Water's statutory sewer records do not show any public sewers within the area specified, there may be sewers that have been recently adopted under the Transfer of Sewer Regulations 2011. Public sewers have statutory protection and may not be built close to, directly over or be diverted without consent and the applicant is advised to contact Severn Trent Water to discuss their proposals. Severn Trent Water would seek to assist the applicant in obtaining a solution which protects both the public sewer and the building.*

361. No response has been received from **Lound Parish Council**, **Ranskill Parish Council**, **Hodsock Parish Council**, **Limited**, **British Geological Survey**, **NCC (Road Safety)**, **Gamston Airport**, **National Grid Company PLC PYLON**, **Western Power Distribution**, **Northern Powergrid**, **National Grid (Gas)**, **Government Pipelines**, **Oil and Gas Authority**, **Energy and Carbon**

Management Team and **Police Force Architectural Liaison Officer**. Any response received will be reported orally.

Publicity

362. The application has been publicised by means of 32 site notices, press notices and neighbour notification letters sent to the nearest occupiers in accordance with the County Council's adopted Statement of Community Involvement Review. Further site and press notices were published following the submission of additional information under Regulation 22 of the EIA Regulations.

363. The County Council has received a total of 797 representations, with 793 objecting to the proposed development and 4 in support. Appendix 2 contains data on the objections received. The responses are broken down into issues and the local, regional and national split of those that have responded is also shown. Appendix 2 also confirms that 25 objections were submitted anonymously.

364. A petition against the planning application has been submitted by a local resident from Ranskill. The submitted petition comprises 2,869 names and states:

"*Please don't allow planning permission for exploratory borehole well site on Tinker Lane – A634 Blyth, Barnby Moor and Torworth*".

365. The petition goes on to outline why the matter is important, stating:

"*It will ultimately lead to the development of a well site that will be hydraulically fracked. I am a mother and I believe that we all have a responsibility to protect our children and our future.*

The independent Climate Change Committee's (CCC) study of the environmental impacts of the shale gas technology has still not been published despite a legal requirement to do so.

The CCC report could have a material impact on the planning application if it is [sic] *been made public in time. Under Section 49 of the new Infrastructure Act, the Government must seek independent advice from Lord Debden's Committee on whether shale gas can be compatible with future emissions targets.*

Barry Gardiner, Shadow Minister of Energy and Climate Change, said "The Government is now losing the trust of the public on this issue who can see that the Energy Secretary has been sitting on this independent report for 56 days whilst simultaneously threatening to impose fracking on communities against their will"

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366. The representations in support of the application do so for the following reasons:

a) The development is safe;

b) There is a need to exploit shale gas for energy security reasons;

c) Shale gas is needed as part of the UK's energy mix;

d) The development would provide an economic boost.

367. The reasons for objecting to the proposed development identified in the representations and petition are summarised below.

Traffic

368. Many of the responses received raise concern in relation to traffic and transportation associated with the proposed development. However, within the topic of traffic and transportation the matters raised are wide and varied:

a) The proposed development would significantly increase the volume of traffic in the surrounding area. Concern is raised about resulting congestion within Blyth, particularly during commuter periods.

b) The roads within the area are not suitable for large vehicles. There are narrow sections of road with high sided geology, and small traffic junctions and islands within Blyth. In addition, residential drives lead onto the proposed route.

c) The increase in traffic would increase the risk of accidents and the proposed route passes a school and many businesses. With the associated narrow roads any blockages would prove hazardous to emergency vehicles. The site entrance is on a blind bend, there are black spots due to road undulation and traffic travels at speed along the A634.

d) There are regular delays on the A1 which would result in HGVs having to use an alternative route. The application hasn't provided an alternative route and all other routes would be unsuitable. Emergency procedures should cater for periods when access cannot be gained to the site with onsite operations that generate waste curtailed.

e) The applicant's suggestion that traffic could be coordinated around school drop-off/pick-up times does not take account of other child-based activities such as breakfast clubs and after school activities.

f) There are safety issues relating to other road users such as cyclists and horse riders. In addition, Tinker Lane is part of the Sustrans National Cycle network.

g) The applicant has not undertaken a proper transport assessment in line with IEMA guidelines.

h) There are concerns about cumulative traffic impact with other development including Harworth South, AD Plant Charcon, Theivesdale Lane (Worksop) and the A1 junction (Blyth).

i) The applicant has not proposed a separate access or bypass.

j) The additional vehicles would cause damage to the roads.

k) There are weak canal bridges in the area.

l) Measures should be put in place to prevent mud and debris on the road including a wheel wash and sheeting of vehicles.

m) There should be traffic controls on the site entrance such as traffic lights to restrict movements on the A634 whilst vehicles enter and leave the site.

n) The adjacent layby should be closed during the construction and drilling phases.

o) The development is contrary to Policy M3.13 (Vehicular Movements) of the Nottinghamshire Minerals Local Plan; and Policies DM3 (General Development in the Countryside) and CS8 (Rural Service Centres) of the Bassetlaw Core Strategy.

<u>Ecology</u>

369. The issue of impacts on ecology has been highlighted in many of the consultation responses with the public raising concerns in relation to the following:

a) The proposed development is close to Mattersey Hill Marsh SSSI and Daneshill Lakes. There would be impacts arising from groundwater contamination; noise; light; vibration; and nitrogen deposition causing nutrient enrichment. Mattersey Hill Marsh SSSI is important because of Southern Marsh Orchids, overwintering wildfowl and Turtle Dove.

b) Assessment of the impact on Mattersey Hill Marsh and Daneshill Lakes is inadequate. Particular reference is made to the SSSI being groundwater-dependent and more robust hydrological and hydrogeological modelling being needed.

c) There would be a general impact on species, plants and wildlife. Reference is made to noise and light impacts on birds (including Tawny owl, kestrel and buzzard), bats and hedgehogs. There is concern that disruption would prevent species from being able to breed and hibernate successfully.

d) The ecological assessments are inadequate.

e) There is general concern about the effects of nitrogen deposition causing nutrient enrichment.

f) Water beetles and waterfowl on the River Idle would be affected.

g) The proposed development is contrary to Policy DM9 (Green Infrastructure, Biodiversity & Geodiversity; Landscape; Open Space & Sports Facilities) of the Bassetlaw Core Strategy.

Contamination

370. The risk of contamination from the proposed development is a theme that runs through many of the responses from the public. Specific concerns include:

a) The proposed development involves drilling through aquifers which are within a groundwater protection zone catchment area (Zone 3) and close to Zone 1. There is concern about poor well construction and integrity, and that all wells eventually leak. This could result in contamination of water resources and resulting impacts on drinking water, local farming and food.

b) Groundwater contamination could go undetected for months or years.

c) The area is designated as a 'high' groundwater vulnerability area.

d) There is no method of decontaminating aquifers.

e) There could be contamination of surface water.

f) There would be soil pollution.

g) With regard to the Pressure Determination Test, the County Council should confirm that this is fresh water only; that the quantity of fluid is only 3 cubic meters; and it should also be clarified what "at a low rate" means.

h) It is requested that groundwater monitoring is carried out by an independent body and is made publicly available. It is also requested that monitoring is carried out at the nearest abstraction sites in the vicinity.

i) There is concern that the applicant claims that monitoring would mitigate problems, but no information has been given on what controls or mitigation would be used or if mitigation would be successful.

j) The proposed development would result in the transportation of toxic waste (which may include heavy metals, radioactive material and sulphuric acid). The proposed route would take this past a school.

Noise and Vibration

371. The levels of noise and vibration resulting from the proposed development has been raised as a reason to object to the proposed development. This is in relation to both people and wildlife. Specific concerns include the following:

a) There would be unacceptable noise and vibration from 24 hour activity. This would affect the health and wellbeing of residents, wildlife, grazing horses and a local cattery.

b) There would be noise and vibration resulting from traffic associated with the development.

c) Noise from the A1 has been used to mitigate the impact from the development rather than considering the contributory, cumulative impact.

d) There is concern about noise from vehicle reversing alarms.

e) NCC should ensure that vertical seismic testing is only undertaken in daylight hours and at times that are notified to local residents and that the vibrations are monitored at nearby properties.

f) The baseline noise locations are near to the site rather than at the site. This gives misleading noise levels.

g) Ongoing noise measurements should be taken at residential properties in the vicinity and measurements should be continuous and also measure frequency.

Visual and Landscape Impact

372. Objections based on the visual impact and impact on the landscape have been received. These relate to the following:

a) The site is on elevated land and would be highly visible as a result of a 60m drill rig. There would also be associated hording, cabins and fencing which would be in place for longer than the drill rig. This is visually significant and local businesses would suffer, including a nearby luxury cattery, which promises panoramic views within a beautiful, peaceful, picturesque location.

b) The proposal is industrial development in a countryside location. The application is not small scale and does not conserve the sparsely settled and rural character of the landscape.

c) The proposal is contrary to Policy Zone 4: Babworth within the Bassetlaw District Council Landscape Character Assessment; and Policies DM1 (Economic Development in the Countryside) and DM4 (design and character) of the Bassetlaw Core Strategy.

Heritage

373. Heritage is a matter which has drawn comments from the public and representations have raised the matter of harm to the historic environment in relation to:

a) There would be an impact on the conservation area of Blyth with particular reference to increased traffic.

b) The proposed development is incompatible with the historic nature of the area with reference made to the area's links to the Pilgrim Fathers and that Barnby Moor was mentioned in the Doomsday Book. Attention is also drawn to Sherwood Forest, the Dukeries and ancient deer parks of the kings being in close proximity. There is concern about impacts on world renowned sites.

c) There are concerns about structural impacts on historic buildings and specific reference is made to Serlby Hall. There is concern that insurance claims would not be upheld.

d) The proposal is contrary to Policy DM8 (The Historic Environment) of the Bassetlaw Core Strategy as it does not protect and enhance the historic environment.

Light

374. The local area would suffer from light pollution, particularly from the 60m rig with lighting on it. This would impact residents, wildlife and a luxury cattery.

Air Pollution

375. Air pollution arising from the drilling and other activities associated with the proposed development has been the basis for objections. Specific air quality objections include:

a) There would be air pollution from operations on the site including the drilling and associated equipment, from vehicles travelling to and from the site, and leakage from the well. This would include air pollution from ozone, hydrocarbons, radon, nitrogen dioxide and the venting and flaring of methane. This would impact on public health, wildlife and farming. Air quality standards would be breached.

b) It is stated that the effects of air pollution are greater in children than adults and there is concern for children attending local schools.

c) There would be dust created by site earthworks and it is recommended that a water bowser should be available to dampen down the site as and when necessary.

d) There is concern about air quality monitoring and it is requested that continuous monitoring of emissions during and after drilling should be carried out.

e) The cumulative impact of the development with the A1, Robin Hood Airport and FARRs should be taken into account.

f) The short term nature of the application should not be used to diminish the impact.

g) The manipulation and falsification of true fuel economy figures by vehicle manufacturers introduces a level of doubt over emissions data.

h) There would be odours from fugitive gas emissions.

Geology

376. Geological related impacts have been raised in the consultation responses and the concerns include the following:

a) There is concern that no 3D seismic surveys have been undertaken to support the proposed development and the location that has been chosen. This is a particular concern as the application is in close proximity to old mine workings and shafts. It is stated that the Coal Authority only considers

mining activity within 20m of the boundary of the site and that further investigation should be done. The proposal could result in subsidence and sink holes.

b) There is concern that the area is geologically active and it is stated that Ollerton is the most seismic town in the UK. It is suggested that a possible fault runs through the Tinker Lane site based on 2D seismic testing that took place in 1984. It is noted that Dart has said that modern interpretation of the 1984 data does not reveal a fault. However, it is suggested that new 3D seismic testing should be undertaken. Dart Energy should be obliged by NCC to provide their analysis of faulting for assessment by an independent body and also made public.

c) The exploratory work would cause damage to the geological structure underlying the site.

d) There is concern about pressure testing that would take place and the use of explosive charges and a 'mini-frack'. It is noted that the well perforation process is the same as that used in full fracking. There is concern that the terms of the pressure determination test would just be breached. It is suggested that the County Council should require details of the 'mini-frack' including fluid volumes and pressure.

e) It is requested that mining maps are made available to the public.

f) Assurance is sought that if any subsidence occurs which results in damage to properties, that it will be repaired. It is recommended that a pre-drilling survey of properties is undertaken.

<u>Other</u>

377. A wide range of other concerns and comments were also raised which are summarised below:

a) The applicant has an unsatisfactory past record. The applicant has erected site cabins without planning permission and ignored compliance requests from Bassetlaw District Council.

b) The applicant has an unsatisfactory past record. At a previous drilling site at Daneshill the applicant breached a number of conditions attached to its planning permission including those relating to an access road. In addition, there was a failure to consider past working at the site.

c) The proposed development would cause new, and exacerbate existing, health issues including sleep disturbance; stress; respiratory illnesses; nausea; birth defects; organ damage; nervous system problems; blood disorders; cancer and mental health issues. This would result in strain on the NHS and GP surgeries and loss of working days.

d) The proposed development would exacerbate climate change and conflicts with climate change targets. The development is contrary to the outcomes of

the Paris Climate Change summit. The Government should support renewable energy and no fossil fuels.

e) The applicant is not a financially sound company and there are concerns about whether the site would be restored if they go out of business. It is requested that a restoration bond is secured if planning permission is granted. It is also questioned whether the terms of the application consent would be transferable.

f) If the County Council approves this application it would set a precedent and make it harder for the Council to reject future applications for fracking. This would have a range of cumulative impacts, particularly in relation to traffic. The longer term consequences of allowing exploration should be considered as it could lead to fracking. It is requested that the applicant clarifies their long term plans for the well site including how many wells are to be drilled and how much fracking would be required.

g) There would be a negative impact on the economy of Nottinghamshire including tourism and agriculture. Reference is made to the DEFRA 2014 Draft Shale Gas Rural Economy Impacts Paper.

h) The development would impact on house prices, saleability and home insurance.

i) There is a history of mining industrialisation in Nottinghamshire and the County should not have to suffer more.

j) The creation of new jobs is a myth and any jobs that would be created would not be well paid or long term. There would be little benefit to local people.

k) Inadequate justification has been provided as to why Dart Energy chose this particular site.

l) The County Council should not rely on other bodies and organisations, including the Environment Agency, to undertake their duties without fault. This is a new industry and the regulators lack expertise and resources. There is also concern that the County Council would not be able to provide 24/7 observation.

m) The development would result in council tax increases to pay for damaged roads and bridges. It has also been suggested that some residents may withhold council tax if property value is lost as a result of the development.

n) The application has not been advertised properly or extensively enough.

o) The applicant has called the site ‘Tinker Lane’, but the site is not on Tinker Lane.

p) It is questioned why three years is needed for exploration and this period appears to be overly long for an exploratory project.

q) The proposed development is not using a proven technique.

r) The applicant has not said where they would get water from.

s) It is suggested that the only reason this well is being drilled is to show the licensing authority that Dart are prospecting so that their licence is not lost.

t) It is recommended that Dart Energy has a responsible person on site 24/7 who can liaise with local people and respond effectively should issues arise.

u) The development would compromise human rights to life, security of person and bodily integrity and rights to health, a reliable and supportive environment and rights to clean water.

v) The application does not comply with Bassetlaw or Nottinghamshire County Council planning policies.

w) Concern is raised that Councillors making the decision are not well enough informed. Reference is made to comments made at a previous planning committee for groundwater monitoring boreholes at Springs Road, Misson where Councillors commented that they were not knowledgeable or informed enough about the fracking process / industry.

x) There is concern about the Government's 'ad hoc' approach to energy generation development. It is suggested that applications such as this should be a national Government decision.

y) A site health and safety document should be made available to the Parish Councils of Torworth, Blyth and Barnby Moor. Input from these parish councils should be included in its formulation.

z) The applicant has submitted an Integrated Management System (IMS) which sets the company's standards and procedures which they are committed to uphold. However, there is concern because Dart/IGas are a small company and many aspects would be contracted out and provided by consultants (including the planning application). As such, the IMS does not strictly apply to contractors. Therefore, it is recommended that NCC demands that the assessment procedures that Dart apply to their major contractors meets the aspirations of Dart's own IMS and that NCC are given a copy of that assessment otherwise all assurances that relate to the IMS are worthless.

aa) There are inconsistencies between drawings submitted as part of the planning application and those submitted as part of the Environmental Permit application, even though the drawings are given the same reference number.

<u>Fracking</u>

378. Opposition to fracking – there have been a large number of representations that are opposed to fracking (despite this not being proposed as part of this planning application) and within this there are a number of common themes:

a) Impacts of any subsequent horizontal drilling and fracking must be taken into account.

b) Fracking exacerbates climate change. This is contrary to the Climate Change Act of 2008 and Nottinghamshire County Council would be in breach of its duty to reduce climate change causing gases. It is contrary to the Paris Climate Change Agreement. It is stated that fracking is worse than burning coal from a climate change perspective and that it is delaying the switch to clean renewable energy. It is also stated that there are other sources of energy which can be used.

c) The process involves large quantities of water. There is concern about the amount of water used and that the flow back water would be contaminated with Naturally Occurring Radioactive Material (NORM), with no way to decontaminate or dispose of this.

d) The importation of large quantities of water, sand and chemicals would result in significant traffic impacts.

e) Fracking would not be just one well, it would result in a shale gas field. The cumulative impacts and massive industrialisation of a rural area should be taken into account.

f) Fracking should not be allowed in England because many other countries and places have banned fracking including Germany, Scotland, Wales, Northern Ireland, France, Holland, Bulgaria, Tasmania, Victoria (Australia) and a number of states in the USA. It is also noted that Labour has called for a moratorium.

g) It would impact on tourism. People would link Nottinghamshire with fracking and not visit the County.

h) The area is faulted and there is a risk that horizontal fracking boreholes would go through faults. Faults and fractures act as conduits from fracked shale to contaminate drinking water. There are other concerns about contamination of groundwater and it is stated that all wells leak in time.

i) Shale gas extraction is said to be uneconomic and not financially viable, with it costing more to extract fracked gas than it is worth.

j) There is concern about the use of carcinogenic chemicals and waste fluids left in open air pits.

k) There are geological concerns about fracking which can result in tremors and increase in seismic activity. This is in an area with former mine workings which could collapse and cause subsidence and sinkholes. This could cause damage to roads, pipes and infrastructure. Buildings would have to be built to a higher standard to withstand tremors and this has a cost.

l) Fracking regulations are not satisfactory.

m) Fracking impacts on house values.

n) Fracking kills wildlife.

o) There would be noise, traffic, air, light and water pollution.

p) There would be a visual impact.

q) A reduction in energy prices does not justify damage to the environment.

r) It results in health impacts including sensory, respiratory and neurological issues.

s) The UK definition of fracking only refers to the amount of water to be used and not the pressure applied.

t) Methane and radon gas escape from fracking.

379. County Councillor Liz Yates (Misterton) has commented that there are differing views about the proposal and those who do not have objections or opinions remain silent. As such, the comments made are based on those who oppose and their reasons. The concerns highlighted are in relation to old mine workings, geology, the lack of 3D seismic testing, traffic, ecology, air quality, water contamination and noise levels.

380. County Councillor Yates trusts that these issues will be addressed stringently and mitigation measures put in place where appropriate. One particular area is in relation to traffic. The site is close to the A1 which is a major route often subject to road closures. Diversionary routes are along the A634 which already has HGV traffic gaining access to the quarry site at Lound. The A634 has a national speed limit with most of the vehicles from the existing sites having to access the highway from adjoining minor roads. Councillor Yates highlights that she has explored the possibility of having a temporary reduced speed limit from the site to the 40mph zone in Blyth with the Highways Authority, but this has been refused. It is requested that this is looked at again.

381. County Councillor Yates also highlights concern about possible mud and debris along the road surface and recommends a condition to keep the highway clean and swept.

382. County Councillor Place (Blyth and Harworth) notes that there has always been a problem with HGV traffic at the staggered crossroads at the centre of Blyth. It is reported to have improved since improvements to the A1, but is still a problem when the A1 is closed for any reason. It is also highlighted that the Red Hart is prone to having its sign knocked off when very large articulated vehicles attempt to negotiate the roundabouts.

383. County Councillor Place also highlights the St Mary and St Martin Primary School start and finish hours, which is located on the A634, the proposed vehicular route. It is stated that the school starts at 08:40 with parents start arriving at around 8am, and it finishes at around 15:30 with parents arriving from 15:00 onwards. It is also noted that afterschool clubs run until 16:30, although the traffic associated with this is not as significant.

384. The issues raised are considered in the Observations section of this report.

Observations

Introduction and Background

385. A planning application has been submitted for the development of a single exploration well and three sets of groundwater monitoring boreholes (which would contain up to three boreholes in each set) for a temporary period of three years. The development is proposed on land off the A634 between Barnby Moor and Blyth.

386. The purpose of the well is to obtain logs and cores, which would help in understanding the geological sequence beneath the site. Logs are the physical measurement of subsurface properties acquired by lowering specialist tools down the wellbore. Cores are the collection of rock samples from the wellbore. These would then be analysed at the surface to understand the small scale properties of the rocks.

387. It is proposed that the logging programme would include a Vertical Seismic Profiling (VSP) and a Pressure Determination Test (PDT).

The Regulatory Regimes

388. Nottinghamshire County Council, as Minerals Planning Authority (MPA), is one of the key regulators involved in the hydrocarbon development process, each one of which must be satisfied before development can commence. The key regulators are listed below and their involvement in the process is set out in Diagrams 1 and 2:

a) The Oil and Gas Authority (OGA) – which issues Petroleum Licences, gives consent to drill under the licence once the other permissions and approvals are in place, and has responsibility for assessing risk of and monitoring seismic activity.

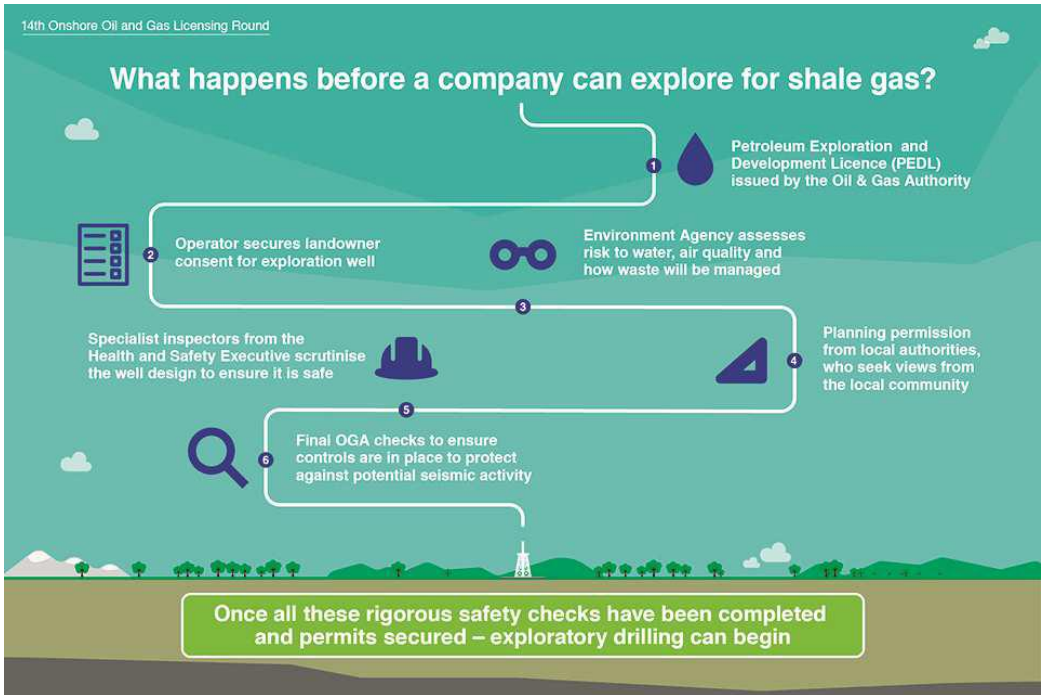
b) The Minerals Planning Authority – which grants permission for the location of any wells and wellpads, and imposes conditions to ensure that the impact on the use of the land is acceptable.

c) The Environment Agency – protects water resources (including groundwater aquifers), ensures appropriate treatment and disposal of mining wastes, emissions to air, and suitable treatment and management of naturally occurring radioactive materials.

d) Health and Safety Executive – regulates the safety aspects of all phases of extraction, in particular they have responsibility for ensuring the appropriate design and construction of a well casing for any borehole.

Diagram 1 – Regulatory Collaboration

Diagram 2 – The Regulatory Regime



Department for Business, Energy and Industrial Strategy - https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk

389. There are other bodies which may be involved in the consenting of hydrocarbon development, including:

a) The Coal Authority – the permission of which would be required should drilling through a coal seam take place.

b) Natural England – which may need to issue European Protected Species Licences in certain circumstances.

c) British Geological Survey – which needs to be notified by licensees of their intention to undertake drilling and, upon completion of drilling, must also receive drilling records and cores.

d) Hazardous Substances Authorities – which may need to provide hazardous substance consent(s).

e) Public Health England – are consulted during the planning process and advise on public health matters.

390. There may also be other additional consents and orders, such as stopping up rights of way or temporary road orders, which may need to be obtained in certain locations.

391. The Planning Practice Guidance (PPG) makes it clear that there are a number of issues which are covered by other regulatory regimes and that Minerals Planning Authorities (MPAs) should assume that these regimes will operate effectively, and that whilst the issues 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. However, before granting planning permission they will need to be satisfied that these issues can or will be adequately addressed by taking advice from the relevant regulatory body.

a) Well design and construction – the Health and Safety Executive is responsible for enforcement of legislation concerning well design and construction. Before design and construction, operators must assess and take account of the geological strata, and fluids within them, as well as any hazards that the strata may contain.

b) Well integrity during operation – under health and safety legislation the integrity of the well is subject to examination by independent well examiners throughout its operation, from design through construction and until final plugging at the end of operation.

c) Operation of surface equipment on the well pad – whilst planning conditions may be imposed to prevent run-off of any liquid from the pad, and to control any impact on local amenity (such as noise), the actual operation of the site's equipment should not be of concern to mineral planning authorities as these are controlled by the Environment Agency and the Health and Safety Executive.

d) Mining waste – the Environment Agency is responsible for ensuring that extractive wastes do not harm human health and the environment. An

environmental permit is required for phases of hydrocarbon extraction and this will require the operator to produce and implement a waste management plan.

e) Flaring or venting of any gas produced as part of the exploratory phase will be subject to Oil and Gas Authority (OGA) controls and will be regulated by the Environment Agency. MPAs will, however, need to consider how issues of noise and visual impact will be addressed.

f) Final off-site disposal of water – Whilst storage on-site and the traffic movement of water is of clear interest to local authorities, it is the responsibility of the Environment Agency to ensure that the final treatment/disposal at suitable water treatment facilities is acceptable.

g) Well decommissioning/abandonment – following exploration, the well is likely to be suspended and abandoned for a period of time. Health and safety legislation requires its design and construction so that, as far as reasonably practicable, there is no unplanned escape of fluids. The mineral planning authority is responsible for ensuring the wells are abandoned and the site is restored.

<u>Planning Policy Assessment</u>

Nottinghamshire Minerals Local Plan – MLP (adopted December 2005)

392. Policy M2.1 (Sustainable Development Objectives) states that minerals development will only be granted where it has been demonstrated that the Plan's sustainability objectives have, where appropriate, been fully addressed.

393. Policy M3.1 (Information in Support of Planning Applications) states that planning permission will not be granted unless sufficient information is provided to enable a balanced assessment of all factors.

394. Policy M5.1 (Mineral Exploration) provides support for exploratory boreholes stating that proposals for mineral exploration will be permitted, subject to satisfactory environmental, amenity and reclamation safeguards.

395. Policy M5.2 (Deep Boreholes in Sensitive Areas) states that exploratory deep boreholes will only be granted planning permission in environmentally sensitive areas where there is satisfactory evidence that exploration could not be achieved from more acceptable sites. The supporting text to this policy explains that 'environmentally sensitive areas' includes features such as SSSIs or archaeological sites which could be damaged by mineral exploration, and residential and other buildings where drilling would create an unacceptable level of disturbance.

396. Policy M13.6 (Boreholes – Conflicts with other Underground Mineral Resources) highlights that where proposals for borehole exploration and production coincide with areas containing other underground mineral resources the County Council will need to be satisfied that their exploitation will not be unreasonably affected.

Bassetlaw Core Strategy – BCS (adopted December 2011)

397. Policy DM1 of the BCS relates to economic development in the countryside. The policy supports stand-alone economic development in rural areas where it can be demonstrated that:

   i. any necessary built facilities will be provided by the re-use of existing buildings or, where the re-use of existing buildings is not feasible, new buildings are located and designed to minimise their impact upon the character and appearance of the countryside;

   ii. the development requires the specific location proposed and there are no other suitable sites in, or close to, settlements covered by policies CS2-CS8 or on brownfield land;

   iii. they are viable as a long-term business;

   iv. the scale, design and form of the proposal, in terms of both buildings and operation, will be appropriate for its location and setting and be compatible with surrounding land uses;

   v. where the proposal includes a retail use, it is demonstrated that this will not have an adverse impact on the vitality or viability of local centres; rural service centres; and shops and services in surrounding villages; and

   vi. they will not create significant or exacerbate existing environmental or highway safety problems.

398. Policy DM3 of the BCS relates to general development in the countryside and applies to any area outside of a Development Boundary. The policy supports the replacement of buildings; re-use of previously developed land; and agricultural/forestry buildings and domestic equine facilities.

National Planning Policy Framework

399. At the heart of the NPPF is a presumption in favour of sustainable development. For decision taking this means approving without delay development proposals that accord with the development plan; and where the development plan is absent, silent or relevant policies are out-of-date, granting planning permission unless any adverse impact of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework taken as a whole or specific policies in the Framework indicate development should be restricted.

400. There are three phases of onshore hydrocarbon extraction: exploration, testing (appraisal) and production. The proposed development falls within the exploration phase of extraction and, as such, Chapter 13 (Facilitating the sustainable use of minerals) is relevant for consideration.

401. Paragraph 144 of the NPPF sets out the considerations for local authorities when determining minerals planning applications. The relevant considerations are summarised below:

- Give great weight to the benefits of mineral extraction, including to the economy;

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

- Ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties;

- 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.

402. Given that exploration is one of the phases of extraction (PPG Paragraph 92 Ref ID: 27-092-20140306), great weight can be given to the benefits of the proposed development in line with Paragraph 144 of the NPPF.

403. Paragraph 147 has further specific advice for hydrocarbon development stating that when planning for on-shore oil and gas development, including unconventional hydrocarbons, Minerals Planning Authorities should clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production.

Planning Practice Guidance

404. The Planning Practice Guidance identifies a pressing need to establish, through exploratory drilling, whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas present to facilitate economically viable full scale production (Paragraph: 091 Reference ID: 27-091-20140306).

405. The PPG explains that the exploratory phase of hydrocarbon extraction seeks to acquire geological data to establish whether hydrocarbons are present. It may involve seismic surveys, exploratory drilling and, in the case of shale gas, hydraulic fracturing (Paragraph: 095 Reference ID: 27-095-20140306), although no fracking would take place as part of the exploratory phase in this instance.

406. The PPG identifies that it is a matter for individual operators to determine how much preliminary data is necessary before undertaking exploratory drilling. However, preliminary data which the operator might obtain to consider the most appropriate locations for exploratory drilling includes: existing geological and other relevant data to gather information about rock formations under the earth's surface; information from earlier drilling for oil, water, coal or other minerals and mining/quarrying activity; and information on aquifers and groundwater

resources, seismic reflection, gravity and magnetic surveys and remote sensing data (Paragraph: 096 Reference ID: 27-096-20140306).

407. The PPG explains that the precise nature of what is included in an application for exploration will depend in part on the applicant. However, all exploratory phases will involve drilling vertically downwards, perhaps including directional drilling. However, the exploratory phases may include horizontal drilling once the appropriate rock formation is reached (Paragraph: 117 Reference ID: 27-117-20140306).

408. The PPG makes it clear that individual applications for the exploratory phase should be considered on their own merits and they should not take into account hypothetical future activities for which consent has not yet been sought, since the further appraisal and production phases will be the subject of separate planning applications and assessments (Paragraph: 120 Reference ID: 27-120-20140306).

409. With regard to assessing demand for, or considering alternatives to oil and gas resources, the PPG states that MPAs should take account of Government energy policy, which makes it clear that energy supplies should come from a variety of sources, which includes oil and gas (Paragraph: 124 Reference ID: 27-124-20140306).

Shale Gas and Oil Written Ministerial Statement (16 September 2015)

410. On 16 September 2015 a Written Ministerial Statement (WMS) was made by the then Secretary of State for Energy and Climate Change. The statement formally replaced the Shale Gas and Oil Policy Statement issued by the Department of Energy and Climate Change (DECC) and the Department of Communities and Local Government (DCLG) on 13 August 2015. The statement expressly states that it should be taken into account in planning decisions and plan making.

411. The WMS sets out the Government's view that there is a national need to explore and develop shale gas and oil resources in a safe, and sustainable and timely way. The WMS also states that exploring and developing shale gas and oil resources could potentially bring substantial benefits and help meet objectives for secure energy supplies, economic growth and lower carbon emissions. As such, the Government considers that "*there is a clear need to seize the opportunity now to explore and test our shale potential*".

Nottinghamshire Minerals Local Plan Consultation Submission Draft (February 2016)

412. In November 2016, the County Council approved the submission of the Nottinghamshire Minerals Local Plan submission draft to the Secretary of State for independent examination. The examination is expected to take place in spring/summer 2017 and once adopted, it will replace the existing Minerals Local Plan.

413. Policy MP12 (Hydrocarbon Minerals) states that proposals for hydrocarbon exploration will be supported where they do not give rise to any unacceptable

impacts on the environment or residential amenity. In addition, all applications for hydrocarbon development will be accompanied with details of how the site will be restored once the development is no longer required.

414. Policy DM18 (Mineral Exploration) states that proposals for mineral exploration will be permitted, subject to satisfactory environmental, amenity and restoration safeguards.

Initial Draft Bassetlaw Plan

415. Bassetlaw District Council published its Initial Draft Bassetlaw Plan for consultation between 17 October and 9 December 2016. The plan is being prepared to replace the Core Strategy and Development Management Policies development plan document which was adopted in December 2011.

416. The Initial Draft Plan states that it, and the responses to it made during the consultation period, will set the direction for the Bassetlaw Plan but confirms that the principles in the Initial Draft Plan are not fixed. The Initial Draft Plan sets out a vision for Bassetlaw's future and the key objectives that the plan will need to address to work towards this vision. It then proposes an overall strategy to address these objectives and suggests how this might be broken down into specific policy themes. For each policy theme, the Initial Draft Plan sets out a proposed policy approach, which is intended as the basis for the policies in the Draft Bassetlaw Plan. The Initial Draft Plan confirms that it does not contain draft policies and does not identify specific sites for development.

417. A Draft Bassetlaw Plan containing a set of draft policies and strategic sites is not anticipated to be ready for consultation until late 2017 and the final Plan is not expected to be adopted until 2019.

418. In terms of the weight that should be attached to emerging local plans, the NPPF, at paragraph 216, states that:

- From the day of publication, decision-takers may also give weight to relevant policies in emerging plans according to:

  - the stage of preparation of the emerging plan (the more advanced the preparation, the greater the weight that may be given);

  - the extent to which there are unresolved objections to relevant policies (the less significant the unresolved objections, the greater the weight that may be given); and

  - the degree of consistency of the relevant policies in the emerging plan to the policies in this Framework (the closer the policies in the emerging plan to the policies in the Framework, the greater the weight that may be given).

419. The guidance in the NPPF refers to weight being given to relevant policies in emerging plans, yet the Initial Draft Bassetlaw Plan confirms that it contains no draft policies but instead contains proposed policy approaches on various issues including economic development, the historic and natural environment,

design and responding to a changing climate which are relevant to this proposed development. The planning application is considered against relevant policies in the adopted Bassetlaw Core Strategy and the adopted and emerging Minerals Local Plans which cover the issues outlined by these thematic policy approaches. The application is also considered against the NPPF itself and the Initial Draft Plan confirms that, in order for the Bassetlaw Plan to be successfully developed and adopted, it needs to be in conformity with the NPPF.

420. Given the infancy of Bassetlaw's new Plan and the absence of draft policies in the document out to consultation at the present time, negligible weight is afforded to the Initial Draft Bassetlaw Plan.

Policy Considerations

421. The principle of the proposed development is supported by Policy M5.1 of the MLP which states that mineral exploration will be granted planning permission, subject to safeguards.

422. Policy M5.2 only allows exploratory boreholes in sensitive areas where there is satisfactory evidence that exploration could not be achieved from more acceptable sites. The proposed development is not in a SSSI. It is noted that the development could affect a Roman-period field system, however, this is non-designated and the County Archaeologist has no objection subject to a programme of archaeological mitigation. Residential and other buildings would not be subject to an unacceptable level of disturbance. In light of this, the development is not considered to be 'in' a sensitive area.

423. Policy M13.6 of the MLP seeks to ensure that other underground mineral resources within the County would not be unduly affected by the proposed development. In this case, the proposed development would pass through a coal seam. However, there is no longer any deep coal working in Nottinghamshire (or the UK) and, as such, this resource is not anticipated to be put at risk by the proposed development. Furthermore, the Coal Authority has raised no objection.

424. Policy M2.1 of the MLP states that planning permission will only be granted where it has been demonstrated that the plan's sustainable development objectives have, where appropriate, been fully addressed. The plan's sustainable development objectives are summarised as:

a) Conserve minerals where possible;

b) Ensure environment impacts caused by the operations and transport are kept to an acceptable minimum;

c) Encourage sensitive working, restoration and aftercare;

d) Protect areas of designated nature conservation value from development;

e) Give appropriate protection to areas and features of cultural heritage;

f) Prevent unnecessary sterilisation of minerals resources.

425. The proposal would not use an unnecessary amount of mineral, and would be limited to the use of some aggregate in the construction of the well pad. Given that this proposal is exploratory only, there would be no gas extraction and in that respect minerals are conserved. There will be environmental impacts associated with the development, which are assessed in detail below. The proposed development would involve mitigation measures to ensure sensitive working and the site would be restored to its pre-development state. The development would not have an unacceptable impact on nature conservation areas. The Roman-period field system would be addressed through a programme of archaeological recording. In addition, there would be no unnecessary sterilisation of mineral resources.

426. Policy M3.1 of the MLP seeks to ensure that sufficient information has been submitted with a planning application to enable a balanced assessment of all relevant factors. In this case sufficient information has been submitted.

427. Policy DM1 of the BCS relates to economic development in the countryside and Policy DM3 relates to general development in the countryside. The BCS policies are not designed with minerals development in mind, nevertheless, the proposed development is considered against the relevant aspects of both of these policies.

428. With regard to Policy DM1 of the BCS the nature of the proposed development would not allow for the reuse of buildings. The design of the development is functional and there is little that can reasonably be done to minimise the impact that would occur to the character and appearance of the countryside, although a soil bund would screen some lower elements from the adjacent road. However, it is recognised that the scheme is temporary and the element that would have the most significant visual impact (i.e. the drill rig) would in place for approximately 17 weeks. Given the nature of the development, being located close to settlements is not desirable. Exploratory drilling by its nature is a temporary operation and not a long-term business. The scale, design and form of the proposal is such that it allows the necessary drilling to be undertaken and there is little opportunity for architectural merit. The proposed development would not create significant, or materially exacerbate existing, environmental or highway safety problems.

429. Policy DM3 of the BCS is titled ‘General Development in the Countryside’ and applies to any area outside a development boundary. The Policy has three sections and covers the replacement of buildings; re-use of previously developed land in rural areas; and agricultural/forestry buildings and domestic equine facilities. The proposed development does not fall into these categories and as such the policy is not considered further.

430. Part A) of Policy DM7 of the BCS relates to future development proposals and gives support to development which will:

   i. harness the educational and research potential of North Nottinghamshire College; and/or

ii. guarantee employment programmes for local residents that provide opportunities for training and development and will contribute to raised workforce skills levels within the District; and/or

iii. deliver, or contribute to, opportunities for the growth of indigenous businesses; and/or

iv. bring significant, good quality inward investment opportunities to the District; and/or

v. support and utilise growth opportunities in connection with Robin Hood Airport.

431. The policy does not give reasons to refuse a development, it only provides support where the above criteria are met. The proposed development may bring inward investment opportunities to the District, although there is no guarantee of this. In addition, the proposed development is for exploratory drilling and is temporary in nature. Any inward investment is unlikely to be significant. No other criteria apply to the proposed development. As such, these aspects are of little relevance. Part B) of Policy DM7 relates to existing sites and is therefore not relevant.

432. In addition to the above the emerging MLP is significantly advanced, and is therefore a material consideration to which substantial weight can be attached. Within the emerging MLP, Policies MP12 (Hydrocarbon Minerals) and DM18 (Mineral Exploration) add further support to the exploratory nature of the proposed development, subject to safeguards.

433. At a national level there are material considerations which add considerable support to the proposed development including the NPPF which gives great weight to the benefits of mineral extraction, including to the economy; and the PPG which identifies a pressing need to establish, through exploratory drilling, whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas present to facilitate economically viable full scale production. In addition, the Shale Gas and Oil Written Ministerial Statement published in September 2015 sets out the Government's view that there is a national need to explore and develop shale gas and oil resources in a safe, and sustainable and timely way.

434. In light of the above, there is considerable policy support in principle for minerals exploration and specifically unconventional hydrocarbons. This is subject to the proposed development not having unacceptable impacts on amenity or the environment.

<u>Site Selection</u>

Context

435. Demonstrating and justifying how the site has come to be chosen, in the case of this application, has been undertaken to meet the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (Schedule 4, Part I, paragraph 2). This part of the regulations requires

Environmental Statements to include an outline of the main alternatives studied by the applicant and an indication of the reasons for the choice made, taking into account the environmental effects.

436. At Chapter 5 of the Environmental Statement (ES) the applicant has included a consideration of alternatives, which focuses on alternative sites and provides an account of the site selection process.

Applicant's Assessment - Methodology

437. The applicant has set out three factors which have established the context for their site selection exercise, namely: the extent of the land over which the applicant has been granted the right to explore for (and develop) hydrocarbons under PEDL 12 and 200; the objectives of the proposed exploratory drilling programme; and the subsurface geology.

438. The applicant has identified the drilling programme objectives as locating and evaluating the resource potential of the:

a) Bowland shale (primary target);

b) Sandstones within the Millstone Grit Group which overlie the Bowland Shale (secondary target).

439. It is stated that to achieve these objectives a vertical well is to be drilled through each of the above targets to allow full characterisation of these strata.

440. In light of the above, the applicant has used a four-stage methodology to select the site within the two licence areas they hold:

a) Undertaking a desk study of published and unpublished geological information to identify the most prospective area;

b) Undertaking a review of all available 2D seismic surveys to assess the thickness of the target strata and the geological structure; this is undertaken in conjunction with an assessment of historical wells drilled in the proximity of PEDL 12 and PEDL 200;

c) Defining 'areas of search' for the drilling of the exploratory wells needed to verify the results of the 2D seismic survey; and

d) Selecting a proposed wellsite having considered the environmental constraints which are likely to apply both within and nearby the areas of search, historical mine workings, and the question of site availability.

441. The applicant identifies that PEDLs 12 and 200 are located over part of the Gainsborough Trough, a buried rift basin which formed during the early part of the Carboniferous period and which contains a sequence of sedimentary rocks including the Millstone Grit Group and Bowland Shale. The applicant reports that the Bowland Shale is the main hydrocarbon source rock for shale gas and oil across the East Midlands and the secondary target, the Millstone Grit Group,

contains prospective intervals within low porosity and permeability deltaic sands within the Gainsborough Trough.

442. The applicant highlights that a number of wells have been drilled in the surrounding area in the past (referred to as ‘offset’ wells), including Grove-3, Clarborough-1, Ranskill-1 and Manton-1 (Plan 17). These are the primary sources of geological data for the area. Torworth-1 sits only 0.2km from the application site and is used as the primary data source for the shallower formations, having been drilled to a 939m True Vertical Depth - Sub Sea (TVDSS) in 1953.

443. Both Grove-3 to the east and Manton-1 to the south intersected all formations down to the Carboniferous Limestone Supergroup which sits below the Bowland and Millstone Grit targets. These are key offset wells. Grove-3 was drilled by BP in 1960 and reached a depth of 1,745m TVDSS. Manton-1 was drilled by BP in 1985 to a depth of 1,556m TVDSS. The most recent well is the coal bed methane well Lound-1 drilled by Dart Energy (Europe) Limited, to 833m TVDSS in 2014.

444. It is reported that Grove-3 encountered 63m of apparent gas bearing shales in the Bowland with Manton-1 intersecting 67m. No core or mineralogical data was taken across these formations on either well however total organic carbon (TOC) measurements from the Manton-1 cuttings show the presence of gas bearing shale. Neither well was tested although Everton-1, north of the Tinker Lane-1 site, successfully tested gas and condensate from a sandstone within the Millstone Grit Group.

445. The applicant reports that PEDL 12 and 200 are situated in an area of reasonable to good seismic quality and all available data was licensed and reproduced to enhance the geological understanding. By using the seismic survey information in combination with the offset wells, both on the licences and in surrounding areas, an understanding of the subsurface geological structure including formation thickness and depth was estimated. The applicant states that analysis of the data has confirmed a relatively simple geological structure in an area to the south of the primary Gainsborough Trough basin centre.

446. The applicant, having reviewed the offset well data and 2D seismic surveys, has identified an area of search which offers the best position for the placement of a borehole from a geological perspective. This took into account factors such as geological structure as well as thickness and depth of the targets (Plan 17).

447. The applicant has evaluated the area of search using a desk-based assessment of the study area to appraise the development potential of sites within the area. The sites have been weighed up against environmental and planning constraints which would have the potential to affect the proposed development. Features and designations that have protected status have been identified to ensure that the development would not impact unacceptably upon them, namely:

- National parks;
- World Heritage Sites;

- Areas of Outstanding Natural Beauty;
- Special Areas for Conservation;
- Special Protection Areas;
- Ramsar sites;
- National Nature Reserves;
- Sites of Special Scientific Interest;
- Local Nature Reserves;
- Local Wildlife Sites;
- Nature Improvement Areas;
- Ancient Woodland;
- Air Quality Management Areas;
- Groundwater Source Protection Zone 1;
- Environment Agency Flood Zones 2, 3a, and 3b;
- Flood Zones from Strategic Flood Risk Assessment (SFRA);
- Scheduled Monuments;
- Listed Buildings;
- Conservation Areas;
- Registered Parks and Gardens;
- Registered Battlefields;
- Settlements;
- Residential properties – within 200 buffer zone;
- Sensitive land uses outside of settlements such as schools, nurseries, hospitals and care homes;
- Public Rights of Way (PRoW); and
- Higher Grades of Agricultural Land Classification.

448. Based on the constraint mapping a number of key criteria were identified by the applicant as providing the basis for identifying a suitable location for a potential wellsite, ideally:

- Sites should be greater than 200m from residential properties, settlement boundaries and isolated sensitive land uses;
- There should be no access constraints, including a PRoW on potential access routes;
- Sites should not be located within designated sites of environmental protection;
- Sites should not be located within designated sites of cultural heritage protection – or within 200m of listed buildings / scheduled monuments;
- Sites should not be located within areas of Groundwater Source Protection Zone 1;
- Sites at a lower risk of flooding should be selected if possible; and
- Land within a lower agricultural land classification grade should be identified where possible.

449. The applicant states that there are a few alternative sites within the identified area of search that are also relatively free from constraints and have the potential to be appropriate for the proposed development. These are located in the following areas:

- The A60 north of Oldcotes;
- The A634 west of Blyth;
- The A634 east of Blyth at Graves Moor Lane/Long Brecks Lane.

450. The applicant states the above areas are less appropriate than the Tinker Lane site. Whilst all of them have access onto an A-class highway, they are all also closer proximity to residential receptors than the Tinker Lane site. In addition, the A60 site is within an area with the potential to affect the setting of Sandbeck Park.

451. Having considered the findings of the constraints mapping and tested potential opportunities for development against planning policy and guidance, the applicant has identified the Tinker Lane site as the preferred choice because it is directly accessibly from an A-class road with only some upgrade works required to an existing access; it is not located within any statutory ecological designated area; it is significantly in excess of 200m from residential and other sensitive properties and any settlement boundary and the site is not crossed by a PRoW.

Conclusions

452. Concerns have been raised in relation to the selection of the site with public responses stating that the applicant has not adequately justified why it chose this particular site.

453. In addition, many public representations and organisations (including Bassetlaw District Council, Sutton Parish Council, Torworth Parish Council, Frack Free Nottinghamshire, Nottingham Friends of the Earth, Friends of the Earth and Bassetlaw Against Fracking) have raised concern about the lack of a 3D seismic survey. Many representations are of the view that such a survey should be necessary to inform the selection of the site and reference is made to old mine workings.

454. Frack Free Nottinghamshire has raised specific concern in relation to ecology and site selection. They state that no other individual sites were examined and that the constraints identified do not appear to have been weighted. Whilst this concern is noted, there is no policy requirement for the applicant to undertake such examination, the assessment of sites is limited to a 'consideration' of alternatives in line with the EIA regulations.

455. With regard to the EIA Regulations, the requirement is for the Environmental Statement to contain an outline of the *main* alternatives studied by the applicant and an indication of the *main* reasons given for the choice made, taking into account the environmental effects. Officers are satisfied that this requirement has been met by the applicant in the detailed 'Alternatives' chapter of the Environment Statement.

456. Notwithstanding the above, it is noted that Policy DM1 of the BCS does provide support for development in rural areas where there are no other suitable sites in or close to settlements or on brownfield land. Whilst this policy is noted, the nature of the development does not lend itself to being in, or close to, settlements or individual dwellings. Furthermore, the policy is designed to control District matter development and its application to a County matter minerals development is limited.

<u>Traffic and Transportation</u>

457. The applicant has included a chapter in the Environmental Statement which considers the environmental effects of the movement of vehicles associated with the proposed development.

458. The applicant states that the HGV traffic associated with the development would use the principal road network. The site is located within close proximity to the A1(M) at a distance of approximately 4.2km (by road). The A1(M) can be accessed from the site via the A634 Retford Road and the B6045. The applicant has identified this as the highways study area.

459. Vehicles leaving the site would travel north-west along the A634 towards Blyth. Near to the application site, this is a single carriageway road subject to the national speed limit. The road is not lit and there is no pavement in the vicinity of the site. To the north of the application site there are laybys on either side of the road, after which there is a staggered junction either side of the road made up of narrow single carriageway width lanes. Continuing in a north-west direction for approximately 2km, the A634 changes to a 40mph speed limit near to the Blyth Road junction, which is located on a bend. After the junction, as the road enters Blyth, the A634 passes under the A1 bridge, which has a height restriction of

4.8m. The speed limit of the road reduces to 30mph at this point. The A634 continues into Blyth with residential properties on either side.

460. To the west of the A1 overbridge there is a primary school on the southern side of the A634. There is an active speed sign which restricts speeds to 20mph when activated.

461. In the centre of Blyth is the crossroads of the A634 and the B6045. The junction is arranged as a double mini-roundabout junction with the B6045 forming the north and south arms of the junction; and the A634 forming the west arm of the northern roundabout and the east arm of the southern roundabout.

462. The B6045/High Street/Bawtry Road/Spital Road routes north to south through Blyth providing the main route through Blyth. To the north of Blyth the road is named Bawtry Road, through the village it is named High Street up to the Briber Hill junction, at which point Briber Hill becomes the B6045. To the south of Briber Hill the High Street continues and becomes Spital Road and continues to join with the A1. The Spital Road junction only provides northbound off-slip and southbound on-slip to the A1.

463. To the north of Blyth the B6045 Bawtry Road links with the A1(M) at junction 34. The junction has a grade separated double roundabout with on and off slips for the north and southbound carriageways. The junction also has a northbound arm, the A614, which links with Bawtry.

464. The A1 in this location is a two lane dual carriageway motorway with a central reserve and dividing barrier, subject to the national speed limit. The A1 provides Blyth with strategic links. To the north of junction 34 the road is classified as a motorway, to the south it is an ‘A’ road, until Peterborough.

465. Links to other roads in the vicinity include the M18, 12km to the north, which in turn provides access to the M1, M180 and the M62.

466. The proposed HGV routing is shown on Plan 16.

467. There is an existing field access immediately off the A634 which would serve as the access to the site. The access would have to be upgraded to serve the application site and would be gated and have a width of 13m. For the road speed there would need to be visibility splays of 215m when set back from the give way line by 4.5m. To provide for the visibility splays four young trees, currently located to the north and south of the site access, would have to be removed.

468. The access would be constructed as a typical section of highway (hard-core and tarmac) stretching back 15m from the highway, thereafter the internal roads would comprise Type 3 stone on geotextile membrane.

469. Swept path assessments have been simulated for larger HGVs accessing and egressing the application site. This includes a Low Loader (Heavy Load); Liebherr LTM 1300-6.1 Mobile Crane; Liebherr LTM 1100-4.1 Mobile Crane; Max Legal Length Articulated Vehicle (Wide Load); and a Low Loader carrying a mud tank. The applicant states that the assessment demonstrates that each

vehicle can manoeuvre in and out of the site without any issue, and each vehicle would enter and exit the site in a forward gear.

470. The applicant reports that the roundabout junctions in Blyth were observed on-site and large HGVs were observed using both junctions comfortably without any issues.

471. The applicant undertook baseline traffic counts between Friday 13th to Thursday 19th November 2015. Surveys were undertaken at four locations including near to the site access (Link 1); B6045 Bawtry Road (north of Blyth); Spital Road (south of Blyth); and A634 (west of Blyth). A summary of the existing baseline traffic data is set out below:

Table 6 - Existing weekday traffic flows

		Northbound		**Southbound**		**Two-way**	
		Total	**HGV**	**Total**	**HGV**	**Total**	**HGV**
Link 1 – A634 East	AM Peak (09:00-10:00)	199	8	180	5	379	13
	PM Peak (17:00-18:00)	217	5	151	2	368	7
	24 Hour (00:00-24:00)	2,339	82	1,823	54	4,162	136
Link 2 – B6045 Bawtry Road	AM Peak (09:00-10:00)	400	20	395	24	795	44
	PM Peak (17:00-18:00)	369	12	429	20	798	32
	24 Hour (00:00-24:00)	4,980	270	4,484	290	9,464	560
Link 3 – Spital Road	AM Peak (09:00-10:00)	93	13	132	13	225	26
	PM Peak (17:00-18:00)	150	11	63	3	213	14
	24 Hour (00:00-24:00)	1,230	143	1,053	112	2,283	255
		Eastbound		**Westbound**		**Two-way**	
Link 4 – A634 west	AM Peak (09:00-10:00)	223	19	168	20	391	39
	PM Peak (17:00-18:00)	171	7	254	12	425	19
	24 Hour (00:00-24:00)	2,228	166	2,242	165	4,470	331

472. The applicant has provided a summary of the traffic which could be generated by the activities at the site for each of the phases of work. This is summarised in the table below.

Table 7 - Average daily proposed traffic generation

	Duration	**Light Vehicles**		**Heavy Vehicles**		**Average Daily Movements**
		Trips	Movements	Trips	Movements	Total
Site construction (5.5 day weeks)						
Monitoring boreholes	4 weeks	-	-	2	4	4
Preliminary works	1 week	10	20	3	6	26
Material delivery	7 weeks	10	20	18	36	56
Removal of groundwork vehicles	1 day	-	-	4	8	8
Drilling (7 days)						
Mobilisation	1 week	10	20	8	16	36
Drilling	14 weeks	20	40	6	12	52
De-mobilisation	2 weeks	10	20	8	16	36
De-mobilisation fence	4 days	1	2	-	-	2

Evaluation (5.5 day weeks)						
Monitoring and security	2 years	5	10	0.1	0.2	10
Remediation (5.5 day weeks)						
Preliminary works	1 week	10	20	3	6	26
Materials removal	7 weeks	10	20	18	36	56
Removal of groundwork vehicles	1 day		-		8	8

473. With regard to traffic generation, peak vehicle movements would occur during construction and remediation phases. During these periods the site would generate a maximum average of 56 daily vehicle movements over a 7-week period during construction and a 7-week period during restoration.

474. The level of impact that the proposed traffic generation would have on the existing baseline traffic levels is set out in the table below.

Table 8 - Traffic impact

	All vehicles			**HGVs**		
	2015 Base	**Proposed Traffic**	**% Change**	**2015 Base**	**Proposed Traffic**	**%Change**
A634 East	4,162	56	1.3	136	36	26.5
B6045	9,464	56	0.6	560	36	6.4
Spital Road	2,283	56	2.5	255	36	14.1
A634 West	4,470	20	0.4	331	0	0

475. The applicant states that the proposed increases are small and unlikely to be perceptible, and they would also be temporary. It is also highlighted that once vehicles enter the centre of Blyth the impacts would probably be less as some vehicles head north on the B6045 and some south along Spital Road.

476. The applicant has also provided average speed data for the A634 in proximity to the application site, which is subject to a 60mph speed limit. The mean northbound speed is 52.4mph and the mean southbound speed is 56.2mph.

477. The applicant has looked at the most recent 5 years of available accident records within an identified study area (the length of the A634 between Barnby Moor and Blyth). Within this period a total of 9 ‘slight’ incidents were recorded and one incident was classified as ‘serious’. There were no incidents classified as fatal within this period. The available data is set out below:

Table 9 - Recorded road traffic incidents 2010 to 2015

	2010-11	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**Totals**
Slight	2	2	2	2	1	9
Serious	0	0	1	0	0	1
Fatal	0	0	0	0	0	0
Total	2	2	3	2	1	10

478. The applicant notes that there would be a requirement for abnormal load vehicle movements. The Bolden Drilling Rig 92 is the largest in terms of vehicle dimensions. This rig would require a total of 16 abnormal loads.

479. The applicant states that for abnormal loads at least two working days' notice is required for the relevant local authorities, bridge and structure owners like Network Rail, and police forces along the proposed route in order that they can approve or reject the proposed movement. It is noted that Nottinghamshire Police do not routinely escort abnormal loads but do allow the use of private escort vehicles for the majority of movements by hauliers, either by providing their own vehicles or employing a third party. However, they will provide a police escort on request of a haulier or where it is deemed necessary due to the size of the load or other extenuating circumstances. Nottinghamshire Police state that they do not allow the movement of abnormal loads in Nottinghamshire during peak traffic periods between 07:30 and 09:30 and 16:30 and 18:30, and on the M1 motorway between 15:00 and 20:00 on Fridays and Sundays. In addition, abnormal loads would not be allowed during the hours of darkness (with the exception of motorways and the A1) except with the agreement of the Abnormal Loads Officer.

480. The applicant has proposed a series of mitigation measures to minimise the impact on traffic on the surrounding highways network, including the following:

a) HGVs would be restricted to the A634 and B6045 where they would gain access to the A1/A1(M) to the north and south of Blyth.

b) HGV blackout periods between the hours of 08:00-09:00 and 15:15-16:15 when there is school transport activity.

c) Ensure that good visibility is maintained at the proposed site access junction i.e. that any trees/hedges are trimmed.

d) Ensure that all loose material transported to/from the site is suitably covered and that HGVs are not overloaded, to minimise the impact of dust resulting from material transport;

e) The induction of drivers of all HGV traffic accessing the development, highlighting safety issues and ensuring they follow agreed access routes to and from the site; and

f) A road sign informing drivers of the site access location and the nature of its operation (to be designed and agreed with the Highways Authority);

481. The applicant has reviewed the significance of the traffic impacts associated with the proposals in terms of driver and community severance and delay (i.e. where infrastructure and/or traffic have an effect on the movement of drivers or a community), road safety, and vulnerable road users. This has been reviewed both without and with the above mitigation measures. The assessment conclusions are set out in the table below.

Table 10 - Significance of traffic impacts

Impact	Pre-mitigation Significance	Suggested Mitigation	Residual Impact
Driver severance and delay	Negligible	- N/A	Negligible
Community severance and delay	Negligible	- HGV route restrictions - HGV blackout periods - HGV driver induction	Negligible
Road safety	Slight	- HGV route restrictions - HGV blackout periods - HGV driver induction	Negligible
Vulnerable road users	Negligible	- HGV route restrictions - HGV blackout periods - HGV driver induction	Negligible

482. With regard to cumulative traffic impacts the applicant has considered a solar farm permission at Jubilee Farm; the Daneshill landfill; an extension of time to an existing mineral operation at Scrooby South; and potential future mineral allocations at Barnby Moor and Botany Bay, Retford.

483. The applicant notes the mineral developments but considers them unlikely to come forward within a similar timescale to the proposed development. With regard to the Scrooby South quarry and the Daneshill landfill the applicant notes that these are existing developments so traffic associated with them would be taken into account in the baseline traffic figures. In terms of the proposed solar farm, the main traffic impact would be limited to construction where there would be a total of 112 HGVs over a 12 week period (an average of fewer than 10 per week).

484. The applicant notes that the A634 has an Annual Average Weekday Traffic (AAWT) flow of 4,162 with a Passenger Car Unit (PCU) flow of 4,229 (where a HGV is classed as 2 PCU). The theoretical capacity of the A634 is 13,000 vehicles per day. As such, there is significant capacity within the road.

485. Highways England have reviewed the proposed development and confirmed that the development is unlikely to have a material impact on the Strategic Road Network (SRN).

486. NCC Highways has also reviewed the planning application and raises no concerns about the amount of traffic the development would generate. Notwithstanding this, the restriction of HGV movements to outside school start and finish hours is welcomed. A number of conditions are recommended relating to: lighting details; wheel wash and road cleaning details; routeing and signage; visibility splays; prevention of the use of the layby; construction of the site access; and removal of the site access. NCC Highways also note that there would be a need to close the nearby layby which sits within the northern visibility splay and this would require a Temporary Traffic Regulation Order.

487. Highways England and NCC Highways have considered the proposed development from a cumulative impact perspective, with particular reference to large scale industrial development at Harworth. No concerns about the capacity of the road network are raised.

488. There have been a wide range of concerns relating to traffic raised in representations, many of which suggest that the volume of traffic would be unacceptable, with particular reference to Blyth. The proposed development would generate, at its peak (7 weeks during construction, and again during restoration) an average of 56 vehicle movements per day. Over a 10 hour period this amounts to an average of 5.6 vehicle movements per hour (3.6 HGVs per hour). The existing network has sufficient capacity to accommodate this level of traffic. Furthermore, Highways England and NCC Highways have raised no concerns.

489. Many representations have highlighted the road conditions in Blyth stating that there are narrow roads, parking difficulties and referencing the junctions and mini-roundabouts at the centre of Blyth. It is suggested that HGVs would have difficulty in negotiating these. The applicant has, however, stated in the application that they have observed HGVs using these junctions without problem. It is also noteworthy that the baseline data indicates that hundreds of HGVs negotiate the Blyth junction and mini-roundabouts daily. Furthermore, there are no objections from NCC Highways.

490. A question of what would happen in the event of an accident is posed in many of the consultation responses. Particular reference is made to the A1. It is stated that accidents and delays regularly occur on this stretch of highway and which results in congestion in Blyth. There is also concern that vehicles associated with the proposed development would deviate from the suggested route, passing through other villages. In addition, Bassetlaw District Council has objected on the basis of there being no designated routing. The claim that accidents and delays may occur on the A1 is noted. It is accepted that such occurrences happen on arterial trunk roads carrying thousands of vehicles. However, the Police and Highways Agency are experienced in managing incidents on a road of this nature. Whilst delays may be experienced, it is considered unlikely that they would be of such a duration as to affect the operation of the site. Notwithstanding the above, it is recommended that planning permission is subject to a legal agreement securing the suggested route between the site and the A1. This would prevent HGV deviation from the route and provide the County Council with enforcement mechanisms should a breach occur.

491. Concern about the cumulative traffic impact from the proposed development with other development has been raised in a number of representations, with particular reference to a large scale industrial and commercial development at Bawtry. There is concern that traffic modelling has not taken this into account. The applicant has identified that the A634 has a theoretical capacity of 13,000 vehicles per day. Taking the proposed development into account it would have a PCU of 4,299, meaning there is significant remaining capacity on the road. It should be reiterated that at its peak the proposed development would result in an average of approximately 5 vehicle movements per hour for a 7-week period during construction and again during restoration. Furthermore, cumulative impacts are not considered to be a significant issue by the Highways Authority or Highways England.

492. Safety concerns have been raised in relation to the site access and reference is made to the site being located on a blind bend and that there are road undulations. It is suggested that a temporary speed restriction is implemented around the site entrance and signage is erected to highlight HGVs to drivers on the road. The use of traffic lights is also suggested. It is also reported that accidents have occurred on this stretch of road and this could be repeated if drivers are distracted by protestors or as a result of slow moving vehicles exiting the site.

493. The applicant has reviewed available accident data for the A634 from the period 2010 to 2015, which shows 10 accidents on the stretch of road between Barnby Moor and Blyth. The accidents are concentrated around the Barnby Moor and Blyth ends of the road. Notwithstanding the data, when erecting site notices, Officers witnessed the results of a vehicular incident. The incident involved a car leaving the highway and entering a field approximately 200m north of the site entrance, and appeared to be as a result of a vehicle travelling substantially in excess of the speed limit. Given that no similar incidents are identified in the 2010-2015 data, this appears to be an isolated occurrence.

494. The applicant has demonstrated that appropriate visibility splays of 215m at 4.5m back from the carriageway in both directions are achievable at the site entrance and that the access is appropriate for the nature of the development. As such, traffic lights are not considered necessary. However, a request for the closure of the layby will be implemented, in line with NCC Highway's recommendation.

495. The request for a temporary speed limit reduction has been put to the Highways Authority, which considers it unnecessary given that the existing speed limit has been assessed by the County Council as acceptable for a road which on average carries over 4,000 vehicle per day. The placement of a road sign forms part of the mitigation measures suggested by the applicant and it is recommended that a condition is used to ensure that suitable signage is in place before construction commences.

496. Where protester activity is causing disruption or distraction a police presence may be necessary. However the need for this, and any associated costs, is not a material consideration. In addition, HGV drivers are expected to operate vehicles with due care and attention in all circumstances.

497. Representations have highlighted the presence of a school (St Mary and St Martin Primary School) on the proposed vehicle route. This is located off the southern side of the A634 approximately 150m to the west of the A1 overbridge. As mitigation, the applicant has elected to avoid HGV movements during school pick-up and drop-off times (08:00-09:00 and 15:15-16:15), which is welcomed by NCC Highways. It is recommended that this is secured by condition.

498. Notwithstanding the above, it is noted that the school finish time is 15:30 and it is reported that parents arrive to pick children up from 15:00. As such, it is recommended that the condition is slightly different to that suggested by the applicant and instead restricts HGV movements from 15:00-16:00.

499. Representations have highlighted that by avoiding these times it would intensify traffic at other times. This is correct. However, considering 56 vehicles over a 10 hour period, rather than a 12 hour period, does not intensify vehicles to such an extent that there would be a material impact.

500. It has also been suggested that avoiding school pick-up and drop-off times does not take account of pre or after-school clubs. The purpose of the 'blackout period' is to avoid peak school movements, not to eliminate movements at any time when any school-age children may be travelling on the roads or walking on the adjacent pavement.

501. Safety concerns have been raised in relation to other non-car road users including pedestrians, cyclists and horse riders. It has also been stated that Tinker Lane is part of the Sustrans National Cycle Network. With regard to pedestrians there is no footpath for the majority of the A634 between Barnby Moor and Blyth and the use of the road by pedestrians would be limited. The road may be used by cyclists and horse riders, however, drivers would be expected to drive with due care and attention and respect all other users. There is no evidence to suggest that the A634 is a route particularly used by cyclists and horse riders, and neither Tinker Lane nor the A634 form part of the Sustrans National Cycle Network.

502. With regard to safety, it has also been highlighted that residential drives lead onto the proposed route. Whilst this is noted, the route is an 'A' class road and it is not reasonable to prevent a relatively small increase in traffic on the basis that the road is used to access residential properties.

503. Concerns have been raised about the general impact of traffic on amenity, particularly from HGVs, on Blyth. It is highlighted that Blyth is a village with approximately 1,200 residents and general amenity concerns are raised in relation to noise, air pollution, dust, mud and debris. Noise and air pollution are considered elsewhere in this report, although from a general amenity point of view it is of note that on the A634 the development would, at its peak (7 weeks during construction and again during restoration), result in an average of 26% increase in HGV movements. The HGV increase on the B6045 to the north of Blyth and Spital Road to the south, would be up to 6.4% and 14.1% respectively (although it could be around half this as HGVs are unlikely to use one route exclusively).

504. With regard to dust, mud and debris the applicant proposes, as a mitigation measure, that vehicles are suitably covered and not overloaded. It is recommended that this is secured by condition. In addition, NCC Highways recommends conditions to control wheel washing and the prevention of mud and debris onto the highway.

505. Concerns have been raised that vehicle movements from the proposed development would result in unacceptable damage to the highway, pavements and verges. The surrounding highways are capable of accommodating the vehicles and it is considered unlikely that the vehicles associated with the development would result in damage to pavements or verges.

506. All vehicle movements on roads eventually cause wear and tear which will require repairs, however, the movements associated with the proposed development are not considered likely to contribute excessively to wear and tear. Using the applicant's baseline data, over a three year period there would be an estimated 148,920 HGV movements on the A634. Over the three year period, the proposed development would contribute approximately 4,700 HGV movements, approximately 3.2%.

507. Bassetlaw District Council has raised a number of objections including that there are no details of how traffic will be managed and that there is insufficient traffic modelling. Public representations have also suggested that the applicant has not undertaken a proper transport assessment in line with IEMA guidelines. The applicant has undertaken a comprehensive review of existing traffic, proposed traffic levels and the associated impacts. No concerns with the modelling have been raised by NCC Highways. With regard to traffic management the applicant has set out a range of mitigation measures within the Environmental Statement and where necessary these would be subject to conditions.

508. Representations have suggested that there are weak canal bridges in the area. The proposed route to the A1 does not cross any canals. The River Ryton is crossed to the north of Blyth, however, there does not appear to be a weight restriction and given the number of HGVs that take this route a restriction is unlikely.

509. A number of representations have objected on the basis that the applicant has not proposed a separate access or bypass. The application site would have a dedicated access and a 'bypass' is not necessary.

Policy

510. When making decisions on a planning application, from a transport perspective Paragraph 32 of the NPPF states account should be had of whether:

- The opportunity for sustainable transport modes have been taken up 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 cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of the development are severe.

511. Recognising the remote location of the site, the temporary nature of development and the nature of the operations (requiring the delivery of large plant, equipment and construction materials) there is little opportunity for sustainable transport modes to and from the site.

512. The applicant has provided vehicle-tracking swept path analysis to demonstrate that the site can safely be accessed by vehicles. Due to the nature of the operations and that there would be no public access it is unlikely that any pedestrian access would occur.

513. There would be no significant traffic impacts as a result of the development and, as such, no network improvements are required. The surrounding roads are capable of accommodating the proposed traffic. The residual cumulative impacts of the development are not severe and there is no justification to prevent or refuse the development on transport grounds. The proposed development is in accordance with these aspects of the NPPF.

514. Objections have been received in relation to traffic and alleging conflict with paragraph 30 of the NPPF. This section of the NPPF encourages solutions which support reduction in greenhouse gas emissions and reduce congestion. It also supports the use of sustainable modes of transport. Vehicles associated with the development would result in some greenhouse gas emissions, as do all vehicle movements. However, the level of vehicle movement is not considered to be disproportionate for the development that is being proposed. The surrounding highway network is capable of accommodating the HGVs from the proposed development and it would not result in congestion. Given the nature and location of the proposed development, more sustainable modes of transport are not appropriate.

515. Policy M3.12 of the Nottinghamshire Minerals Local Plan (MLP) relates to highways safety and protection and states that minerals development will only be granted where the MPA is satisfied that measures are in place to prevent damage to the highway and that mud is prevented from entering the public highway. NCC Highways has recommended that wheel washing and road cleaning measures are secured by condition. The proposed development meets the requirements of this policy.

516. A number of representations have stated that the proposed development would be contrary to Policy M3.13 of the MLP. However, in light of the considerations above, the proposed development is fully capable of accommodating the vehicle movements likely to be generated by the proposed development and no unacceptable impact to the environment and disturbance to the local community would occur. As such, the development is entirely in accordance with Policy M3.13 of the MLP. Nevertheless, it is recommended that a condition is used to ensure that average HGV movements do not exceed those assessed in the application, i.e. 36 movements per day during the construction and restoration phases. Recognising that there could be daily variations, the condition would also cap daily movements at 60 to protect residential amenity.

517. The use of a legal agreement to secure the appropriate routeing of vehicles is in accordance with Policy M3.14 of the MLP. It is also recommended that a driver code of conduct is secured through a legal agreement.

518. Policy M3.15 of the MLP looks to transport minerals by rail, barge, pipeline or conveyor where it would result in an environmental benefit. Objections have referenced this policy in relation to the lack of sustainable transport options, however, given that this is an exploratory borehole there would be no bulk transportation of minerals and the policy is of limited relevance.

519. In light of the comments above the proposed development also satisfies the requirements of Policy DM9 of the emerging MLP which relates to: highway network capacity; environmental impact and disturbance to local amenity;

vehicle routeing; and measures to prevent mud contaminating the public highway.

520. Policy SP5 of the emerging MLP relates to sustainable transport and promotes the use of sustainable forms of transport. Where this is not possible mineral working and related development should be located within close proximity to proposed markets and within close proximity to the main highway network and existing transport routes in order to avoid residential areas, minor roads and minimise the impact of road transportation. As discussed above the use of road transport is needed due to the nature of the proposal. With regard to the location of the development the access is located on an 'A' class road and thus on the main highway network. It is recognised that vehicle routing would pass through a residential area at Blyth, however, this is part of the 'A' class road network. Overall the development is in accordance with Policy SP5.

521. Representations have drawn attention to Policy CS8: Rural Service Centres of the Bassetlaw Core Strategy, stating that the proposed development does not comply with the Policy. However, the Policy is directed at development within Rural Service Centres (e.g. Blyth). As the development is not in a rural service centre no further consideration is given.

522. Policy DM13 of the BCS relates to sustainable transport and expects development proposals to: minimise the need to travel by private car; provide linkages or develop new footways, cycle paths and bridleways; and provide appropriate facilities to support high-quality public transport. However, given the nature of the proposed development the application of these requirements would not be appropriate.

<u>Heritage</u>

Built Heritage

523. The applicant has undertaken a cultural heritage assessment. The study area for the assessment was 5km from the site for designated assets (listed buildings, scheduled monuments, registered parks and gardens and registered battlefields) and 2km for non-designated assets (archaeological sites, find spots and locally listed buildings).

524. Within the search area the applicant lists a total of 103 listed buildings. The nearest listed buildings are Moat Farmhouse, a Grade II listed building in Torworth, 1,480m north-east of the application site; and Barnby Moor Lodge, a Grade II Listed Building in Barnby Moor, 1,488m south-east of the application site.

525. The majority of the listed buildings are Grade II, however the most significant buildings within the study area are:

a) Grade I listed Church of St Bartholomew located approximately 3km to the east of the application site;

b) Grade I listed Blyth Priory Church of Saint Mary and Saint Martin located approximately 3.2km north-west of the application site;

c) Grade I listed Blyth New Bridge located approximately 3.7km north-west of the application site;

d) Grade I listed Hodsock Priory Gatehouse and Bridge located approximately 3.8km to the west of the application site;

e) Grade I listed Serlby Hall located approximately 4.2km north of the application site;

f) Grade II* Ranby Hall located approximately 2.3km south of the application site.

g) Grade II* Arch located approximately 4.7km north of the application site.

526. There is a particular concentration of listed buildings to the north-west of the application site in Blyth. This area is a designated conservation area with the closest point located approximately 2.7km north-west of the application site.

527. The applicant has assessed the impact of the proposed development on heritage assets using the following methodology:

a) Identify which assets and their settings are affected;

b) For indirect impact assessments, assess whether, how and to what degree the settings make a contribution to the significance of the heritage assets (assessment of heritage significance and contribution to that significance from setting);

c) Assess the effects of the proposed development (beneficial or harmful) on that significance (assessment of magnitude of impact on the contribution from setting and the resulting significance of effect);

d) Explore ways to maximise enhancements or avoid or minimise harm.

528. As part of the Landscape and Visual Impact Assessment (LVIA) the applicant has undertaken two Zones of Theoretical Visibility (ZTV). One considers the majority of structures at the application site and a second a 60m high drilling rig. Views of and from designated heritage assets theoretically include views of the rig over much of the 5km study area. Views of other elements of the proposed development (up to 10m in height) would be much more limited and would not include any designated assets of the highest significance (Scheduled Monuments or Grade I or II* Listed Buildings).

529. A total of 19 designated assets potentially affected have been identified by the applicant and further comments have been made on these based on considering aerial images, photographs and modern mapping. Following this, a total of five built heritage assets or groups of assets have been identified as requiring further assessment, as the initial assessment has identified potential wide visibility from and of the asset. These assets have been assessed by the applicant through direct inspection in the field and a summary of each assessment is set out in the Environmental Statement. The applicant's assessment is summarised in the table below.

Table 11 - Heritage asset assessment

Heritage asset	Heritage significance	Impact magnitude and significance of effect
Bishopfield House 3,249m north	A Grade II listed house of early 19th Century date. An isolated building set within a landscape of planned enclosure fields towards the application site. High significance. The setting preserves to a degree the landscape features which were present when the asset was constructed and contributes to its heritage significance by facilitating understanding of its function and appreciation of the aesthetic qualities of its relatively isolated rural location.	There might be an open view of the rig and possibly the structures within the application site from the house. The rig would appear as a distant linear vertical modern intrusion forming a very small part of the general outlook from the house and in views past the house, for a duration of four months. The significance of the effect is predicted to be **very slight harm**.
Mattersey Hill 4.5km north-east	Four post-medieval Grade II listed buildings at Mattersey Hill (a house, two cottages and a farm building). The assets form an isolated group of buildings set within a landscape of planned enclosure fields and apparent restored extraction areas towards the application site. High significance. The wider setting around the settlement contributes to the significance of these assets by preserving to a degree the landscape features which were present at their construction. The more distant contribution from setting in the vicinity is limited to its general rural nature.	Woodlands would provide screening and a nearer visual focus in any views of the rig. In any view the rig would appear as a very distant linear vertical modern intrusion forming a very small part of the general outlook from the house and in views past the house, for a duration of four months. Existing telegraph poles would reduce the perception of change. The significance of the effect is predicted to be **effectively nil**.
The Mantles 1.9km north-west	A small estate approximately comprising a post-medieval house, lodge and stable outbuildings with a formal approach from the north-west. High significance. The wider setting contributes to their significance by preserving to a degree the landscape features which were present at their time of construction, permitting understanding of their function and appreciation of their relationship with the surrounding rural hinterland. Locations from where these qualities may be appreciated lie primarily within the near vicinity of the asset group. No key focus within the setting beyond the asset group itself has been identified and the contribution from setting in the vicinity of the more distant development is limited to its general rural nature.	The rig would appear as a distant linear vertical modern intrusion forming a very small part of the general outlook from the assets and in views past the assets, for a duration of 4 months. The significance of the effect is predicted to be **very slight harm**.
Torworth	A cluster of three post-medieval Grade II listed farmhouses in the village of	There might be an open view of the rig and possibly the structures within the

1.5km north-east	Torworth. High significance. The village and the designated assets within it lie within a landscape of planned enclosure fields including the land towards the application site. The proposed development would be at least partially screened from the designated assets in this group by intervening vegetation and buildings within the village. The village setting makes an important contribution to the heritage significance of the assets. The rural setting outside and around the village contributes to the heritage significance of the three farmhouses by preserving to a degree the landscape features which were present at the time of the construction.	application site from the listed buildings within the southern part of the village. The rig would appear as a linear vertical modern intrusion forming a very small part of the general outlook from the buildings and in views past the buildings towards the application site, for a duration of 4 months. The rig is likely to appear significantly taller than adjacent features within the view. The on-site accommodation and other structures would also be visible. The significance of the effect is predicted to be **very slight harm**.
Barnby Moor 1.5km south-east	All Grade II listed and comprise two post-medieval houses and a public house. High significance. The village lies in a landscape of planned enclosure fields with extensive woodlands blocks, in the direction of the application site. The landscape view has changed little over time although pylons, telegraph poles and overhead lines are visible in the middle distance. The rural setting around the village contributes to its heritage significance by preserving to a degree the landscape features which were present at the construction. Places from where the contribution to significance may be experienced are located primarily in the near vicinity of the asset group where the detail of the landscape may be experienced. The more distant contribution from setting in the vicinity of the development is limited to its general rural nature.	There might be an open view of the rig and possibly the structures within the application site from the house at a distance of approximately 1.5km. The rig would appear as a linear vertical modern intrusion, with a building and woodlands adjacent to the line of sight but not providing screening. It would form a very small part of the general outlook from the houses, for a duration of four months. The significance of the effect is predicted to be **very slight harm**.

530. The applicant has considered cumulative impacts of the proposed development with the recently consented solar farm on 14ha of land of the A634 to the north of Jubilee Farm. The development is located approximately 0.7km north of the proposed development at its nearest point.

531. The LVIA for the solar farm considered that at a greater distance than 50m from the site to the north-east and south, changes to the landscape character would be of negligible scale and magnitude. The applicant concludes that any cumulative visual effect from the proposed development, with the solar farm, would only last for four months and it is predicted that any effect would not be significant.

532. Overall, that LVIA concludes, taking into account the heritage significance of the assets, the contribution from setting to that significance, and the scale, nature and duration of the proposed development, that the indirect effects though adverse would not be significant.

533. NCC Built Heritage has reviewed the application, specifically the cultural heritage assessment. NCC Built Heritage is content that the level of harm caused by the drill rig would be less than substantial and ultimately of no harm upon removal of the rig. The other aspects of the development are lower in height and would be largely invisible within the setting of the designated listed buildings. NCC Built Heritage has no objection and agrees with the conclusions of the cultural heritage assessment.

534. NCC Built Heritage note that there are some existing issues relating to traffic levels through designated conservation area within Blyth and, generally, increases in traffic levels are not welcomed as they contribute to the erosive impact on the rural character of the village. However, on balance due to the short duration of the period of HGV traffic the impacts of the proposals represent 'less than substantial' harm in the terms provided by the NPPF and this harm should be weighed against the public benefits of the proposal.

535. Historic England note that the submission confirms that there are predicted indirect impacts, which though adverse are not significant. They have considered the cultural heritage section of the submission including the ZTV and state that the information is limited in demonstrating the potential impacts on designated heritage assets. Historic England suggest the use of photomontages and state that the application is not accompanied by visualisations to demonstrate the likely impact. They also suggest that consideration should be given to undertaking a practical exercise with a crane or balloon erected at the height of the proposed structure to better understand the landscape impact.

536. Historic England go on to state that the Authority should be satisfied with the level of information to enable a robust and informed assessment of potential impacts and advise that a thorough assessment of the impact on setting needs to be taken into account, and be proportionate to, the significance of the heritage asset and the degree to which the changes enhance or detract from that significance and the ability to appreciate it.

537. The comments from Historic England regarding setting are noted, however, the applicant has provided visualisations, albeit they are contained in the LVIA chapter of the ES rather than the Cultural Heritage chapter of the ES. Whilst the visualisations are not full photomontages they do show the location and height of the proposed drill rig from 11 viewpoints surrounding the proposed development. These viewpoints are cross-referenced through the Cultural Heritage chapter of the ES. The NCC Built Heritage team state that they are satisfied that the Cultural Heritage and LVIA chapters provide adequate response to the requirements of the NPPF at Paragraph 128. In this regard, the Authority is satisfied with the level of information provided, as stated by Historic England.

538. Historic England state that associated activities need to be given consideration such as construction, servicing and maintenance, and associated traffic.

Construction, servicing and maintenance are site based and therefore covered by the above assessment, however, further consideration is given to the associated traffic impacts, particularly on the Blyth Conservation Area which the proposed HGV route passes through. This matter has also been raised by the public and Blyth Parish Council which highlight the conservation area and the presence of a Norman Church from 1088 AD. In line with the comments from NCC Historic England 'less than substantial' harm is attributed to the traffic impacts on Blyth and this harm is to be weighed against the public benefits of the proposed development.

539. Historic England's recommendation is that the Authority must weigh the harm caused to the heritage assets against any public benefits deriving from the proposed scheme, and must consider whether sufficient information and clear and convincing justification has been provided. Reference is made to NPPF paragraphs 128, 129, 131, 132 and 134.

540. Objections have been received on the basis that Barnby Moor is mentioned in the Doomsday Book and is a small hamlet not of the capacity to absorb major development. Reference is made to the wider area's links to the Pilgrim Fathers. Attention is also drawn to Sherwood Forest, the Dukeries and ancient deer parks of the kings being in close proximity. The proposed development is outside of Barnby Moor and it would not, therefore, have to absorb the development. The impact of the proposal on the setting of heritage assets in Barnby Moor has been assessed above. The proposed development is sufficiently distant from Sherwood Forest and the Dukeries so as not to impact upon their setting and there are no registered parks and gardens within the study area.

541. There is concern about structural impacts to historic buildings and specific reference is made to Serlby Hall. Related to this there is concern that insurance claims would not be upheld should structural damage occur. With regard to drilling, the drills are rotary bored only and impart relatively small amounts of energy into the ground. Vibration associated with drilling is reported to be imperceptible at distances of 20m.

542. It is noted that the applicant proposes Vertical Seismic Profiling (VSP). This would be carried out under permitted development rights and is not part of the planning application. Notwithstanding this, the applicant has calculated that vibration associated with this activity would be lower than the perception level at the nearest sensitive receptor (630m distant) and the nearest listed building is approximately 1.5km distant. As such, there are no concerns relating to the structural impacts on historic buildings.

Archaeology

543. The application site does not contain any designated heritage assets.

544. The applicant reports that the Historic Environment Records (HER) contains no records within the application site. However, the National Mapping Programme (NMP) indicates the presence of a single ditch within the site, which forms part of the 'brickwork-plan' field system which is widespread through the study area.

The ditch is orientated north-west to south-east and there is no indication in the plots of other features within the application site.

545. The applicant reports that the brickwork-plan field system characteristically produces no or very few finds except where enclosures, presumably indicating a settlement, are known. Even at settlement locations finds are sparse. The HER contains no records which are sufficiently close to the application site to suggest they might extend within it. The applicant states that there is nothing to suggest that other archaeological features are present within the application site or that any remains present are likely to be of greater than local significance. Their heritage significance is predicted to be no greater than medium.

546. The Cultural Heritage Assessment notes that any form of ground disturbance has the potential to damage or destroy any archaeological features present. The unmitigated magnitude of direct impact from the development is predicted to be up to low adverse and permanent on the field system as a whole, although it would be high adverse and permanent on the field-system ditch within the application site.

547. The applicant identifies the significance of the effect as moderate with permanent harm to the field system ditch and very slight harm to the overall field system. However, they recommend a programme of archaeological investigation and reporting to be secured by planning conditions. On the assumption that such a programme were to be implemented the Cultural Heritage Assessment identifies the significance of direct effect from development as no greater than slight but permanent on the ditch and negligible on the wider brickwork plan field system.

548. With regard to indirect impacts there are three scheduled monuments within the Study Area, namely:

a) Blyth Priory located 3.2km to the north-west of the application site;

b) Blyth New Bridge located 3.7km to the north-west of the application site;

c) Blyth School located 2.7km to the north-west of the application site.

549. The above scheduled monuments are not identified as potentially affected assets. The applicant does, however, identify Blyth Law Hill are requiring further assessment. Blyth Law Hill was chosen for a Bronze Age barrow and other features present indicate contemporary activity. A Roman pit is also of uncertain significance and an execution site is indicated. The heritage significance of the assets is considered to be high.

550. The assets reflect the very long-term continuing significance of the location. A key aspect is the long-distance views, which must reflect the importance of inter-visibility between the assets and a wide-ranging hinterland. The Cultural Heritage Assessment identifies that the long-distance views both from and of the assets were important in their usage.

551. The Cultural Heritage Assessment identifies that Beech Farm would partially screen the application site and the hedgerow along Tinker Lane would be in the

foreground and provide some further screening. The existing pylons would reduce a viewer's perception of change introduced by the rig. It would form a very small part of the general wide-ranging outlook from the assets, for a duration of four months. Overall the significance of effect is predicted to be very slight harm.

552. NCC Archaeology is satisfied with the proposals set out in the cultural heritage section of the ES and recommend that a condition is used to secure a programme of archaeological mitigation.

553. Historic England have highlighted the need, where appropriate, for consideration of alterations to drainage patterns which might lead to in-situ decomposition or destruction of below ground archaeological remains or deposits, and can lead to subsidence of buildings and monuments. The nearest listed building or monument is located approximately 1.5km distant and is therefore not considered to be at risk of subsidence from changes to drainage patterns. With regard to the decomposition or destruction of below ground archaeological remains or deposits, this has been given further consideration by NCC Archaeology, which has concluded that the risks of dewatering are low given the free draining nature of the soils and subsoils and the absence of current or past water courses in the vicinity. In light of this, no further consideration of alterations to drainage patterns in relation to archaeology is considered necessary.

Policy

554. In line with the requirements set out in Paragraphs 128 and 129 of the NPPF the applicant has described the significance of the heritage assets and the level of detail is considered proportionate to understand the assets' importance and the potential impact of the proposal on their significance. Nottinghamshire's Historic Environment Record (HER) has been consulted. In addition, the NCC Built Heritage and Archaeology Officers have considered the significance of the heritage assets to be affected, having taken account of the information submitted.

555. As set out in Paragraph 131 of the NPPF, sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation is promoted. As the proposal is for the exploration of hydrocarbons there is little the development can do in the way of putting the presence of a single ditch within the site (which forms part of the 'brickwork-plan' field system) to viable use consistent with its conservation.

556. Paragraph 131 also highlights the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality. However, the single ditch heritage asset is considered to be of no greater than medium significance and its contribution to sustainable communities, including economic vitality, is minimal.

557. Paragraph 131 recognises the desirability of new development making a positive contribution to local character and distinctiveness. As a proposal for hydrocarbon exploration the development is utilitarian in nature and would not contribute to local character and distinctiveness. Indeed, for a temporary period

while drilling is taking place there would be a substantial visible element of the proposal in the skyline, out of character with the local area.

558. Paragraph 132 of the NPPF states that when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Paragraph 135 states the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

559. The applicant has assessed the significance of the single ditch heritage asset as 'medium' with the unmitigated significance of effect predicted to be moderate and permanent harm to the field system ditch and very slight harm to the overall field system. The applicant states that analysis, archiving and reporting placed in the public domain would have a beneficial effect in terms of increasing knowledge and understanding of the brickwork plan field system, an effect which, it is said, would partly balance the harm caused by the loss of the asset. Officers do not accept this: paragraph 141 of the NPPF states that the ability to record evidence of the past should not be a factor in deciding whether such loss should be permitted. As such, the benefits of recording are acknowledged, but for the purposes of the balancing exercise, the significance of the effect of development would remain moderate and permanent harm to the field system ditch and very slight harm to the overall field system. It is officer's view that the loss of a small part of the brickwork plan field system which is widespread through the study area and is of medium significance is not significant enough to preclude the development. This is in line with the view of NCC Archaeology which raises no objection and is satisfied with the applicant's Cultural Heritage section of the ES.

560. The proposed development would also have an impact on the setting of designated heritage assets at Bishopfield House, Mattersey Hill, the Mantles, Torworth and Barnby Moor. The impact on each of these locations is for a duration of four months and the significance has been assessed as very slight harm. In addition, there would be 'less than substantial' harm to Blyth conservation area as a result of increased vehicle movements during the life of the development. Paragraph 132 of the NPPF states that as heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. The harm would be less than substantial and last for a period of 4 months. In this case, the justification is great weight given to mineral extraction in the NPPF and the "pressing need" to establish whether or not there are sufficient recoverable quantities of unconventional hydrocarbons as set out in the PPG. The justification is strengthened by the temporary nature of the source of harm (i.e. the drill rig) after which time there would be no harm on the heritage asset setting.

561. In light of the above the importance of the development does outweigh the significance of the remains. The proposal is therefore in accordance with Policy M3.24 of the Nottinghamshire Minerals Local Plan (MLP).

562. Policy M3.25 of the MLP states that planning permission will not be granted for minerals development which would cause an unacceptable level of harm to, among other things, the setting of listed buildings. In light of the above, the level of harm is not unacceptable due to its temporary nature and the proposal is in accordance with this policy.

563. A number of groups have raised objection to the proposed development on the basis that it is contrary to Policy DM8 of the Bassetlaw Core Strategy (BCS). Policy DM8 places a presumption against development that would be detrimental to the significance of a heritage asset. The policy highlights that the areas of archaeological interest and the setting of heritage assets are important. The setting of an asset is an important part of its special architectural or historic interest and proposals that fail to preserve or enhance the setting of a heritage asset will not be supported.

564. The proposed development would result in the loss of a field system ditch and have a temporary impact on the setting of listed buildings, the significance of which is assessed as being of very slight harm. As such, the proposed development is contrary to Policy DM8. However, this policy does not allow for a balancing of significance verses harm or for the consideration of a clear and convincing justification, in line with Paragraph 132 of the NPPF. As such, reduced weight is attributed to this policy in line with the guidance set out in Paragraph 215 of the NPPF.

565. Policy DM6 of the emerging MLP supports development where it is demonstrated that there will not be an adverse impact on any heritage assets and/or their setting. Where there is harm, the development will be supported where the public benefits outweigh the harm to, or loss of, any designated or non-designated heritage assets and their setting. Where this is the case the harm should be mitigated as far as possible. As set out above, the harm to both the field system and the setting of the listed buildings is considered to be outweighed by the general benefits of mineral extraction and the “pressing need” to establish whether or not there are sufficient recoverable quantities of unconventional hydrocarbons as set out in the PPG. In addition, measures would be put in place to ensure recording of any affected archaeological remains.

<u>Noise and Vibration</u>

Noise

566. The proposed development would result in noise generation, specifically associated with the construction activities, drilling and traffic. As such, the applicant has undertaken a noise assessment to consider these noise impacts.

567. The wellsite construction process involves drilling of groundwater monitoring boreholes; the formation of a site access; erection of gates, fencing and CCTV; stripping of soils and the formation of bunds; creation of a wellsite platform;

installation of a bunded storage area; and staff welfare accommodation and on-site vehicle parking. Equipment associated with these operations would include:

a) Wheeled excavator;

b) Heavy roller;

c) 4-axle rigid HGV tipper truck;

d) Tracked hydraulic drilling rig;

e) Truck mounted drilling rig;

f) Tracked crane;

g) Lorries.

568. The applicant has calculated the changes in traffic noise levels using the methodology described in Calculation of Road Traffic Noise (CRTN). The applicant has elected to assess a worst case scenario by using calculations for the am and pm peak hours (09:00-10:00 and 17:00-18:00) as well as based on 12-hour daily flows. It is noted that the peak hours of 08:00-09:00 are not included as HGVs would avoid peak school traffic at this time.

569. Drilling operations are planned to operate on a 24 hour basis. However, for reasons of rig availability should planning permission be granted, at this stage the applicant has not identified the specific drill rig that they propose to use. As such, the applicant has elected to assess the noise characteristics of four typical rigs (Drillmec HH-220, Bentec T-49, Bentec T-208 and Bolden 92). The noise generating elements of the rigs vary, but could include some or all of the following:

a) Generator(s) (including air intake, radiator and exhaust);

b) Hydraulic Power Unit;

c) Rig trailer (manifold);

d) Shale shakers;

e) Mud pumps, agitators and tanks;

f) Centrifuge;

g) Top drive;

h) Pipe handler;

i) Draw works;

j) Power control unit.

570. The baseline noise level was established based on a combination of unattended monitoring at two locations and attended monitoring at five locations. The unattended noise monitors were set up at Beech Farm and Billy Button Cottage to log 15 minute samples of noise levels over a period of approximately two and half weeks. Monitoring took place at Beech Farm between 26th November and 14th December 2015 and at Billy Button Cottage between 27th November and 14th December 2015. The applicant reports that it was intended to set up an additional noise monitor at Jubilee Farm but permission could not be obtained.

571. Supplementary attended noise measurements were undertaken during a daytime and night-time period at five noise sensitive measurement locations. The purpose of the attended monitoring was to obtain an indication of the noise environment at locations where unattended monitoring was not undertaken. The results of the noise monitoring are shown in the table below.

572. The noise monitoring locations were Beech Farm (630m to the south-west), Jubilee Farm (670m to the north-west), Billy Button Cottage (690m to the north-east), Collage Farm (900m to the east) and Grange Farm (1.2km to the south-east). The properties are shown on Plan 3.

Table 12: Summary of noise monitoring

Location	Ambient Noise , dB LAeq		
	Period	**Range**	**Average**
Beech Farm	Day	55-59	57
	Night	48-53	50
Jubilee Farm	Day	67-73	70
	Night	47-52	48
Billy Button Cottage	Day	43-49	47
	Night	44-49	46
College Farm	Day	64-76	72
	Night	34-47	41
Grange Farm	Day	64-75	68
	Night	33-49	41

573. The applicant has predicted construction noise levels at each of the sensitive noise receptor locations. The predicted levels are set out in the Table below. The applicant has assessed the noise impact from construction and remediation works as likely to be negligible.

Table 13 - Predicted construction noise levels

Location	**Baseline ambient noise, dB $L_{aeq,T}$**	**Noise threshold dB $L_{aeq,T}$**	**Predicted construction noise level, dB $L_{aeq,T}$**
Beech Farm	52	65	55
Jubilee Farm	67	70	54
Billy Button Cottage	47	65	54
College Farm	67	70	52
Grange Farm	64	70	49

574. The impacts of noise associated with traffic have been assessed for am peak hour, pm peak hour and the daily (12 hour) construction period. The maximum noise change would occur during the material delivery and removal sections of the construction and restoration phases. During this period the noise change is

predicted to be an increase of 0.3 dB L_{A10}. Such a change is deemed to be imperceptible and the applicant has assessed it as having a very low or negligible impact.

575. The applicant has considered the noise level for each of the possible drill rigs and assessed their impacts on the baseline noise levels at a range of receptor locations for the day, evening and night times. This allows total noise levels and change in noise levels to be identified, as shown in the table below.

Table 14 – Drill rig noise levels and change from baseline

Location	Baseline ambient noise level, dB L_{Aeq}			Rig Noise L_{Aeq}	Ambient noise level with rig, dB L_{Aeq}			Noise Change dB		
	Day	Evening	Night		Day	Evening	Night	Day	Evening	Night
HH-220 rig with full mitigation										
Beech Farm	52	50	46	32	52	50	46	0	0	0
Jubilee Farm	67	63	47	31	67	63	47	0	0	0
Billy Button Cottage	47	43	39	30	47	43	40	0	0	+1
College Farm	67	63	36	28	67	63	37	0	0	+1
Grange Farm	64	60	35	22	64	60	35	0	0	0
T-208 rig with full mitigation										
Beech Farm	52	50	46	38	52	50	47	0	0	+1
Jubilee Farm	67	63	47	38	67	63	47	0	0	0
Billy Button Cottage	47	43	36	37	47	44	41	0	+1	+2
College Farm	67	63	36	34	67	63	38	0	0	+2
Grange Farm	64	60	35	28	64	60	36	0	0	+1
T-49 rig with full mitigation										
Beech Farm	52	50	46	41	52	51	47	0	+1	+1
Jubilee Farm	67	63	47	40	67	63	48	0	0	+1
Billy Button Cottage	47	43	39	39	47	44	42	0	+1	+3
College Farm	67	63	36	36	67	63	39	0	0	+3
Grange Farm	64	60	35	31	64	60	37	0	0	+2
B92 rig with full mitigation										
Beech Farm	52	50	46	36	52	50	46	0	0	0
Jubilee Farm	67	63	47	36	67	63	47	0	0	0
Billy Button Cottage	47	43	39	35	47	44	41	0	+1	+2
College	67	63	36	33	67	63	38	0	0	+2

Farm										
Grange Farm	64	60	35	27	64	60	36	0	0	+1

576. The applicant states that it is the impact of noise on sleep that is likely to be the primary concern. The World Health Organisation (WHO) guideline levels for the onset of sleep disturbance effects and the Planning Practice Guidance (PPG) absolute noise level limit for night time noise is 42dB L_{Aeq}.

577. At two locations (Beech Farm and Jubilee Farm), night time noise levels already exceed the WHO criteria for onset of sleep disturbance. In these cases the applicant predicts there would be no further increase in night-time noise except where Rig T-49 or T208 are used, in which case night time noise would increase by 1dB at most at Beech Farm and Jubilee Farm. This is unlikely to be a noticeable change.

578. Night time noise level change may be up to 3dB at Billy Button Farm and College Farm, however, the absolute noise levels would not exceed the WHO threshold for the onset of noise disturbance at these properties.

579. With regard to daytime noise there would be no change to ambient levels and for evening there would be an increase of up to 1dB. The applicant considers such a change to be unlikely to be noticeable and is considered to be a minor impact.

580. The applicant states that the rigs included in the noise assessment represent a typical range of drilling rigs with factory fitted noise mitigation measures. Given that the noise assessment has shown that the noise from the noisiest rigs would be of minor significance the applicant has concluded that mitigation measures (over and above the mitigation measures already fitted on the rigs) are not required.

581. The NCC Noise Engineer has reviewed the planning application and states that the proposals are acceptable on noise grounds subject to conditions relating to noise levels, mitigation, monitoring, noise surveying and a noise management plan.

582. The Bassetlaw Environmental Health Officer (EHO) recommends that the drilling operation is conditioned such that the noise-sensitive properties identified within the report are not subjected to any increase in noise levels above the measured background levels both during the day and night time periods. The comments of the Bassetlaw EHO are noted, however, the advice is not consistent with the guidance set out in the Planning Practice Guidance (PPG), which is the appropriate guidance for assessing noise levels in relation to sensitive receptors.

583. A number of groups and organisations have raised concerns about the noise generated by the proposed development, with particular concern about the 24-hour operations during the drilling phase of the development. It is stated that this would take place in a quiet part of the countryside and has the potential to cause sleep disturbance and increase stress. Concern is also raised about the noise generated during construction and restoration, which are noted as being

the noisiest periods. Concern has also been raised in relation to noise impact arising from increased vehicle movements, particularly in Blyth.

584. These concerns are noted, however, the noise assessment demonstrates that during the day and evening, drilling activities would raise noise levels at the nearby sensitive receptors by no more than 1dB, which is generally accepted to be imperceptible. During night time hours, on the basis of the noisiest rig, it is noted that noise levels would increase by +3 dB at Billy Button Cottage and College Farm and by +2 dB at Grange Farm (+3 dB being the level at which noise change could be perceptible), however, total noise levels would remain below the 42dB WHO threshold for sleep disturbance.

585. It is noted that night time noise levels at Beech Farm and Jubilee Farm would reach 47 dB and 48 dB respectively. However, the night time background noise level at these locations is currently 46 dB and 47 dB and the contribution from the proposed development would only be 1dB. As such, the noise contribution from the proposed development is unlikely to be perceptible.

586. With regard to construction noise the proposed development would only operate during daytime hours (07:00-19:00). Planning Practice Guidance sets noise limits for minerals development. For daytime activity it states that noise levels should not exceed 10dB above background levels or 55dB in total at noise-sensitive properties (up to 70dB is allowed for temporary periods of up to 8 weeks in a year). At the nearest sensitive receptors the construction noise would not exceed 55dB or 10dB above background noise at any noise-sensitive property.

587. The applicant has modelled noise resulting from the traffic generated by the proposed development and it would result in no more than a 0.3 dB increase. This would be imperceptible.

588. Concern has been raised about the methodology used in the noise assessment with noise measured near the application site, rather than at the site. The baseline noise has been measured, or calculated, at the nearest noise-sensitive properties, as noise only has the potential to harm where there is a receptor. In terms of noise generation, this has been calculated emanating from the application site. This is an appropriate approach.

589. There is also criticism that noise from the A1 is used to mitigate noise resulting from the application rather than it be acknowledged that there would be more noise, but from a different location. It is normal practice to measure background noise, and existing noise sources such as the A1, contribute to it. It is in the context of existing noise, which the A1 is an important part, that noise from the proposed development at sensitive receptors can be understood. The NCC Noise Engineer is satisfied with the applicant’s noise assessment.

590. Objection has been raised relating to noise from vehicle reversing beepers at the application site. Concerns relating to reversing beepers within the site (during construction and operation) can suitably be addressed through conditions/noise management plan to ensure that only white noise reversing beepers are used.

591. A request has been made that, in the event planning permission is granted, there should be continuous noise monitoring through the duration of the development. It is accepted that there should be some noise monitoring during the start of drilling operations to confirm the findings of the noise assessment. However, given the acceptability of noise levels within the noise assessment is it considered that to require monitoring throughout the life of the development would not meet the tests of planning conditions set out in the NPPF, specifically the tests of being necessary and reasonable.

592. Noise impact on grazing horses has been raised as a potential issue, although no specific details have been provided. Without any details it is hard to consider the potential impacts, however, the noise levels have been considered acceptable at residential properties and the nearest agricultural land appears to be arable rather than pastoral.

593. There is concern that noise from the proposal would affect the White Gates Farm luxury cattery. Noise levels are acceptable at all of the nearest receptors, which range from 630m to 1.2 km from the application site. The cattery is located 2km north-west of the application site, as such, noise is not anticipated to be unacceptable. It is also worth noting that the A1, a significant noise source itself, is located circa 1km west of the cattery.

594. Some representations have raised concerns that the proposed development does not comply with Policy M3.5 of the MLP, DM1 of the BCS and noise levels in the Planning Practice Guidance.

595. Policy M3.5 of the MLP states that development will only be granted where noise emissions outside of the boundary of the mineral workings do not exceed acceptable levels; and recommends the use of conditions. Policy DM1 of the BCS seeks to minimise impact upon the countryside. It is also necessary to consider Policy DM1 of the emerging MLP which supports minerals development where it can be demonstrated that adverse impacts on amenity, including noise, can be avoided and/or adequately mitigated. It is noted that night time noise levels would be exceeded at two of the residential receptors (Beech Farm and Jubilee Farm). However, the existing baseline noise already exceeds night time noise criteria at these locations, and the additional noise from the proposed development is considered imperceptible. Noise at other times is within acceptable limits. In light of the above, subject to conditions, the proposed development meets all the relevant noise thresholds and is in accordance with Policy M3.5 of the MLP and DM1 of the emerging MLP.

596. No material cumulative impacts relating to noise are anticipated.

597. Concerns have been raised about noise impact on wildlife, however, this is dealt with in detail within the ecology section of the report.

Vibration

598. A number of representations have raised concerns about vibration in relation to drilling and from traffic movements and this affecting the public, businesses and wildlife.

599. The applicant has reviewed vibration arising from drilling and highlights that there would be no impacts as a result. It is stated that the wells would be drilled using rotary bore drills only which impart relatively small amounts of energy into the ground, compared to percussive pilling techniques, for example. The applicant states that data available for continuous flight augurs indicates that ground-borne vibration would be imperceptible at distances of 20m, and that levels from drilling operations are not expected to be significantly different. Given that the nearest residential receptor is located 630m distant, any unacceptable vibration is considered unlikely.

600. No assessment of vibration impact arising from vehicle movements has been undertaken. Nevertheless, the levels of traffic associated with the proposed development (average of 36 HGVs and 20 light vehicle movements per day during construction and restoration) is not a significant quantity of traffic. The vibration impact of normal road going vehicles is not anticipated to be significant. It is recognised that there would be some 'oversized' vehicles transporting larger plant and machinery to the site. However, such vehicles movements would be occasional at the beginning and end of works. In addition, oversized vehicles due to their nature normally travel at reduced speeds thereby lessening any small vibration that may occur.

601. The applicant does note that Vertical Seismic Profiling (VSP) would be undertaken. The applicant states that VSP is likely to use one vibrator vehicle which would operate for a short period of time (a few hours or less operating in periods lasting a few seconds each). VSP operations would take place within the confines of the site perimeter. The applicant states that this has the potential to result in perceptible vibration at residential premises. However, the applicant states that this operation would be carried out under permitted development rights.

602. Notwithstanding VSP taking place under permitted development rights the applicant has given it further consideration. They state that according to BS 5228-2:2009+A:2014, vibration would be just perceptible when levels exceed 0.3mm mm/s and complaints may occur at levels of 1 mm/s or more. The applicant has estimated that vibration would be less than 0.3mm/s and therefore conclude that it would not be perceptible and would be of temporary negligible or minor impact.

603. A representation has requested that NCC should ensure that vertical seismic testing is only undertaken in daylight hours and at times that are notified to local residents and that the vibrations are monitored at nearby properties. Given that the applicant has specifically identified that VSP would be undertaken under permitted development rights, the activity is not considered to form part of the operations for which planning permission is sought. In this respect, any conditions to control timings of VSP, or requiring the notification of nearby residents, would not be relevant to the development to be permitted and would not, therefore, meet the appropriate tests for attaching planning conditions. Nevertheless, it would be good practice to inform the community of such activities and it is therefore suggested that an informative is used to recommend that the applicant does this.

604. No significant cumulative impacts associated with vibration are anticipated.

605. The issue of vibration in relation to minerals development is primarily a concern where blasting takes place and is dealt with in Policy M3.6 of the MLP, however, this policy is not relevant in this case. There is no separate vibration policy although supporting text to Policy M3.12 (Highways Safety and Protection) notes vibration as a side effect of traffic. Again the emerging MLP does not have a vibration specific policy but in the supporting text to Policy SP5 (Sustainable Transport) notes large volumes of HGV traffic can have an adverse impact in terms of vibration. The proposed development would result in an average of 36 HGV movements over a 10-hour working day, or one every 16-17 minutes. These levels of traffic are not considered large and would not result in adverse vibration.

Landscape and Visual Impact

606. The applicant has undertaken a Landscape and Visual Impact Assessment (LVIA) as part of the Environmental Statement.

Landscape Character

607. In considering the character of the area the site lies within the National Character Area (NCA) 49: Sherwood which extends over 30km from the south to the north in a band 10km wide. The area principally coincides with an outcrop of sandstone which forms a belt of gently rolling hills. Historically it was managed as woodlands and remains a well wooded area. The oak and birch wood pasture in the heart of Sherwood Forest and more recent pine plantations, contribute strongly to the sense of place. NCA 39: Humberhead Levels is the adjacent character area to the north and stretches from the Vale of York in the north to Retford in the south and is characterised by low lying and large scale agriculture.

608. At a regional level the Nottinghamshire Countryside Appraisal describes the application site as being located towards the northern end of the 'Sherwood' Regional Character Area within the 'Sandstone Estatelands' landscape type which is described as "*an enclosed, gently rolling estate landscape characterised by an ordered pattern of fields, roads and woodlands*".

609. At a local level, the Landscape Character Assessment of Bassetlaw, Nottinghamshire (2009) identifies the application site as being located within 'Sherwood'. More detailed policy zones are identified in this document with the application site located within "SH40: Babworth". It is described as having or including the following characteristic features: intensive large scale arable farmland; good field boundaries of hedgerows with trees or shelter belts connecting to small woodland blocks; landscape fragmented by roads including the A1/A20/B6079; former Manton colliery site; Ranby Hall; Ranby Prison; Babworth Hall and parkland; and Morton Park and Chesterfield Canal. The landscape action for Policy Zone 40 is to conserve and create.

610. In considering the landscape effects of the development the applicant has assessed:

a) the physical disturbance of landscape elements and features and reinstatement of land cover;

b) alteration to aesthetic and perceptual aspects such as scale, simplicity, openness and sense of tranquillity and wildness; and

c) alterations to overall landscape character and key characteristics.

611. With regard to the physical disturbance of landscape elements and features, the application site comprises part of an arable field and a small area of hedgerow and road verge. The applicant notes there are no landscape designations in place and the physical state is relatively poor (intensively managed arable) with no conservation or recreation interest. Overall the sensitivity of the application site to change is considered low. The applicant has assessed the magnitude of change as high during construction, but negligible to low after restoration. Overall the potential effect of the physical differences that would be made to the landscape elements and features at the application site is considered to be no more than moderate and adverse during the short-term operational phases, but with negligible to slight beneficial changes after final restoration.

612. The applicant considers the sensitivity of the application site and its immediate setting to the type of changes proposed is low because of the local value of the site and the low susceptibility of the pattern of large geometric fields and straight roads, which is sparsely settled. The applicant has assessed the magnitude of change as being medium to high during the operational phases, with no change after final restoration. This would result in no more than moderate and adverse magnitude of change during the short term operational phases, with no change after final restoration. Overall, the applicant considers this not significant.

613. The LVIA identifies the susceptibility of change resulting from the proposed development for this part of Sherwood (both “Sandstone Estatelands” and/or “Policy Zone 40: Babworth”) as negligible. The magnitude of change relating to the alteration of overall landscape character is considered to be low. Overall the landscape effects upon the application site and “Sherwood” as a whole is assessed by the applicant as being slight and not significant. The effects are adverse in the operational phases, with no change to the baseline after final restoration.

614. The applicant has given consideration to cumulative impacts in relation to landscape character. Consideration has been given to a solar farm project approximately 0.7km north of the application site. The applicant has also considered potential cumulative effects in relation to existing vertical structures within the landscape such as power infrastructure. The applicant states that the addition of the proposed development to the solar farm and power infrastructure would not give rise to changes in landscape character of such an extent as to have major effects on its key characteristics or transform it into a different character type. The applicant states that it does not ‘tip the balance’ through additional effects.

Visual Impact

615. The LVIA has considered a study area of up to 5km from the application site. The applicant has defined the extent of visibility within and outside the application site using Zones of Theoretical Visibility (ZTV). One considers development up to 10m in height (storage tanks and ancillary structures such as generators and pumps) and the second considers development up to 60m in height (the drill rig). It is noted that the ZTV is based on bare terrain and the model does not include vegetation, structures or buildings which may offer screening. As a result, it shows a worst case scenario. The 10m and 60m ZTV are shown at Plan 18 and 19.

616. The applicant identifies the following potential visual receptors covered by the ZTV as including the following:

a) Inhabitants of settlements and residential properties, such as Ranskill and Torworth to the north, Barnby Moor to the south-east and Blyth to the north-west. In addition, dwellings within 1km of the site including Jubilee Farm, Billy Button Cottage, College Farm and Beech Farm are identified;

b) Users of public highways such as the A634 immediately adjacent and the A638 Great North Road to the east and A1 to the west, as well as the B6045 and other minor roads connecting settlements and properties elsewhere;

c) Users of rights of way or other informal recreational access to Daneshill Lakes; and

d) Users of Cuckoo Way and the towpath adjacent to the Chesterfield Canal to the south.

617. The applicant has assessed the visual impact of the proposed development from 11 viewpoints. The viewpoint locations have been chosen to assess a range of receptor locations surrounding the proposed development including: inhabitants of settlements; inhabitants of individual dwellings; users of public highways; users of public rights of way; users of Daneshill Lakes; and users of Cuckoo Way and the towpath adjacent to Chesterfield Canal. A summary of the effect for each viewpoint is set out in the table below:

Table 15 - Summary of effect for each viewpoint during operational phases

VP	Location/description	Sensitivity	Magnitude	Significance
1	Public right of way to the south of Ranskill village	Medium to high (recreational visitors in a village fringe context and local residents)	Low and adverse whilst the rig is visible and negligible and neutral during other operational phases	Moderate
2	View from the junction between the A634 and Graves Moor Lane	Low (road users)	Low and adverse whilst the rig is visible, with no change at any other time	Slight
3	View from the junction between the A634 and a public right of way south of Jubilee Farm	High (recreational visitors in a rural context, road users and local residents)	Low and adverse whilst rig is visible, negligible to low and adverse during other	Moderate

			operational phases	
4	View of Torworth Grange on the Great North Road (A638)	Medium to high (road users and local residents)	Low and adverse whilst rig is visible and negligible and neutral during other operational phases	Moderate
5	View from public right of way at Daneshill Lake	High (recreational visitors)	None	No change
6	View from A634 adjacent to the application site	Low (road users)	Medium and adverse during installation and removal of rig and low and neutral during the remaining period	Moderate
7	View from Tinker Lane, south of Beech Farm at junction with public right of way	Medium to high (road users and local residents)	Low and adverse whilst rig is visible and negligible and neutral during other operational phases	Moderate
8	View from A1, at junction with minor road and public right of way	Medium (road users and recreational walkers and visitors near to the A1)	Low and adverse whilst rig is visible, with no change at any other time	Slight to moderate
9	View from the junction between Tinker Lane and A634	Medium (road users and recreational walkers and visitors at a road junction)	Low and adverse whilst rig is visible, with no change at any other time.	Slight to moderate
10	View from the Chesterfield Canal towpath (Cuckoo Way), east of Forest Top Lock.	High (recreational walkers and visitors to the canal and towpath)	Negligible to low and adverse whilst rig is visible, with no change at any other time.	Slight
11	View from Billy Button Lane	High (recreational visitors in a rural context, road users and local residents)	Low and adverse whilst rig is visible, negligible to low and adverse during other operational phases	Moderate

618. The LVIA considers cumulative visual impacts in combination with the solar farm to the north at Jubilee Farm. Of the viewpoints assessed, the only location where the two projects would be simultaneously visible would be at the junction between Viewpoint 2 on the A634 and Graves Moor Lane, to the north. Even though the two projects would be seen at this location as energy development/industrialisation the applicant states that the broader character of rolling agricultural landscape would remain unchanged. The LVIA also notes that other potential cumulative visual effects would be of a sequential nature, for example users of the A634 as they pass each project or recreational visitors moving along the rights of way in the area and catching glimpses of each. Overall, the applicant considers that there are no significant cumulative visual effects anticipated.

619. In conclusion, the applicant notes the drilling rig would be the most visible feature, appearing as a relatively narrow and tall industrial element, often adjacent to the existing overhead powerlines that pass close by the western boundary of the site, and a small part of a broader horizontal skyline. The lower parts of the development (for example the perimeter fencing or tankers) would

typically be much less visible, being confined principally to a 1-2km section of the A634 which passes by the site. At other locations, the lower parts of the development would be screened and/or set down on the horizon and background.

620. The short time that the development may be visible also limits the overall effects, with the rig being limited to four months and then perimeter fencing, gates and soil bund etc. during construction, drilling and then the retention period being less than three years. After final restoration there would be no change to views.

Comments

621. NCC Landscape notes that the LVIA has followed the methodology set out in the Guidelines for Landscape and Visual Impact Assessment – Third Edition (GLIVA3, May 2013), published by the landscape Institute and the Institute of Environmental Management and Assessment.

622. NCC Landscape note that the magnitude of change upon individual elements and features has been assessed by the applicant as high during the construction periods, drilling operations and retention phases. The magnitude of change is assessed as negligible to low after the decommissioning and final restoration of the site back to agricultural land. The overall effect of the development on the physical characteristics has been assessed as moderate adverse for the short term operational phase and a negligible to slight beneficial change after final restoration which is not a significant effect. NCC Landscape agree with this conclusion.

623. With regard to the impact of the proposed development upon the landscape character of the study area NCC Landscape highlight that the assessment has not shown the landscape character policy zones within the study area on a drawing and the adjacent landscape policy zones are not described, even though they are within the 5km study area. It would also have been useful for the location of designated sites (both ecological and historical, and public rights of way) to be shown on a drawing. Notwithstanding this, NCC Landscape notes the conclusion that the overall landscape effects on 'Sherwood' and the landscape are slight and not significant, with the effects being adverse during the operational phases and no change after final restoration. Whilst NCC Landscape agree with the rationale, they highlight that there is scope for mitigation for landscape character with some additional tree planting within hedgerow boundaries and the gapping up of field boundaries. Such actions would fit in with the Babworth Policy Zone "create and conserve" actions of:

a) conserving the historic field pattern, restoring hedgerow boundaries and creating new hedgerows where necessary; and

b) enhancing tree cover and landscape planting generally to create increased visual unity and habitat across the policy zone.

624. With regard to visual impact NCC Landscape notes that for the storage tanks there is one viewpoint (No. 6) which would have a greater than 3 degree visible vertical angle. For the 60m drilling rig there would be 5 other viewpoints which

would experience a greater than 3 degree angle, all of which have been shown to experience a moderate adverse effect with none being assessed as significant. These are viewpoints 1, 3, 4, 6, 7 and 11 as set out in Table 15 above. NCC Landscape agrees with the significance of effect for each of these viewpoints. However, NCC Landscape do note the there are no photomontages which would have assisted in understanding the lower level 'bulk' of the storage containers with the rig.

625. NCC Landscape has reviewed the assessment of cumulative landscape and visual impacts and agree that there would be no significant effect.

626. In conclusion NCC Landscape consider that, due largely to the temporary nature of the development the application is acceptable with regard to landscape character and visual impact. NCC Landscape do recommend that a landscape drawing should be produced to illustrate the potential for site mitigation for adverse impacts on landscape character, particularly for the roadside hedge, which could be managed from the outset to have its height increased and any gaps filled prior to development.

627. The information that NCC Landscape has highlighted that would be helpful (drawings with Policy Zones and designations shown on them and photomontages) are noted. Nevertheless, NCC Landscape do not identify them as necessary and have come to a conclusion in their absence. In light of this, it is not considered necessary to require this additional information.

628. A number of groups have raised concerns about the landscape and visual impacts of the proposed development. It is highlighted that the proposed development, as a result of the drill rig, would be prominent across the landscape and other elements of the development should be considered (fencing, cabins and associated works). Representations have also stated that the application site is on elevated land. In addition, the level of impact asserted by the applicant is disputed and a number of parties consider that visual impact would be of more than moderate significance. These concerns are noted and it is agreed that there would be a degree of visual impact; indeed, with a 60m drill rig the visual impact is undeniable. However, the most significant element of the visual impact (i.e. the drill rig) would be present for no more than 4 months, and the remainder of the development for no more than three years in total. On this basis, there would be a moderate visual impact resulting from the development. Whilst it is noted that a number of parties disagree that the significance of the impact is moderate, the assessment has been reviewed by NCC Landscape and they agree with its conclusions.

629. Concerns have been raised about the development industrialising the countryside and that the tranquillity of the area would be endangered. It is also stated that the application is not small-scale and does not conserve the sparsely settled and rural character of the landscape. The concerns are noted and there would be a moderate adverse impact on the physical characteristics of the site in the short term, although after final restoration (after three years) the change would be negligible to slight beneficial. In terms of the overall landscape effect there would be a slight impact which is not significant as the effects are adverse

during the operational phases with no change to the baseline after restoration. NCC Landscape agrees with the applicant's conclusions.

630. Concerns have been raised by a local cattery business which promises panoramic views within a beautiful, peaceful, picturesque location. The cattery is located approximately 2km north-west of the application site and there would be views of the development as shown on the Zone of Theoretical Visibility (Plans 18 and 19). The visual impact at this location is not significant and would be temporary.

Policy

631. Policy M3.3 of the Nottinghamshire MLP states that planning permission will only be granted for minerals development where visual impacts can be kept to an acceptable level. Whilst it is recognised that there would be unavoidable visual impact associated with the development, it is for a temporary period and the most significant element (i.e. the drill rig) would be present for a 4 month period. The visual impact is not considered unacceptable and the development is in line with this policy.

632. Policy M3.4 of the MLP suggests the use of conditions to ensure that screening and landscape proposals reduce visual impact. Given the nature of this development, including a rig up to 60m in height and the temporary nature of the development which would not be sufficient time to allow substantial vegetation screening to occur, there is limited opportunity for screening. Nevertheless, NCC Landscape has recommended some opportunities for increasing the height of hedgerow and infilling gaps. It is recommended that this is secured through condition in line with Policy M3.4 of the MLP.

633. Policy M3.22 of the MLP relates to landscape character and states that operators must demonstrate that landscape character has been fully taken into consideration and planning permission will not be granted for development which is likely to adversely impact upon the character and distinctiveness of the landscape, unless there are reasons of overriding public interest or where ameliorative measures can reduce the impact to an acceptable level. In line with the policy the applicant has demonstrated that landscape character has been taken into account. The NCC Landscape Team is of the view that the overall significance would be slight and not significant. Noting the wording of the policy, for development which has an impact it would only be acceptable where there are reasons of overriding public interest or where ameliorative measures can reduce the impact to an acceptable level. In this case the temporary nature of the development is an ameliorative measure and after final restoration there would be no change to the baseline. For this reason the development would also be in accordance with Policy DM1 of the emerging MLP.

634. A number of representations have drawn attention to Policy DM1 of the Bassetlaw Core Strategy (BCS) and state that the development would be contrary to the Policy's aim to "enhance the rural character" and "minimise the impact on the countryside*".* As discussed in the Policy section above, Policy DM1 has not been designed with minerals development in mind, nevertheless, the policy does state that proposals for standalone economic development will be supported where they can demonstrate that "*any necessary built facilities will*

be provided by the re-use of existing buildings or, where the re-use of existing buildings is not feasible, new buildings are located and designed to minimise their impact upon the character and appearance of the countryside". This aspect of the policy certainly appears to be directed to built development in the conventional sense rather than temporary minerals development and ancillary equipment. Nevertheless, it is deemed that this Policy does not offer support to the proposed development and therefore the development is considered neutral in the context of this policy.

635. Objections have been raised on the basis that the proposed development conflicts with Policy DM4 (design and character) of the BCS, which sets out a series of design principles for major development and individual development. These principles are geared towards district-type development and the policy's application to minerals development is limited.

636. With regard to major development the policy supports development which provides functional and physical links with existing settlements; complements and enhances the built, historic and natural environment; is of an appropriate scale and provides an improvement to the range of houses. Given the functional and temporary nature of the development there is limited applicability of these aspects of the policy.

637. Policy DM4 also provides a series of general design principles. The public realm and accessibility principles are not applicable to this proposal. The functional nature of the development does not lend itself to respecting local character and distinctiveness and there is little opportunity for architectural quality. With regard to amenity there would be a degree of harm to landscape and visual amenity, albeit temporary. The Policy also supports carbon reduction. This is considered later in the report.

638. In addition, Policy DM9 of the BCS includes a section relating to landscape and expects new development in and adjoining the countryside to be designed so as to be sensitive to the landscape setting, enhancing the landscape character policy zones. The proposed development is utilitarian in nature and would not enhance the landscape; indeed, for a period it would have a detrimental impact. However, the impact is temporary and reversible. As such, the development is not considered to be contrary to the thrust of the policy, which is to protect the landscape.

639. Policy DM5 of the emerging MLP states that proposals for minerals development will be supported where it can be demonstrated that it will not adversely impact on the character and distinctiveness of the landscape unless there is no available alternative and the need for development outweighs the landscape interest and the harmful impacts can be adequately mitigated. The development would have a temporary adverse impact on the character and distinctiveness of the area. With regard to available alternatives it has to be recognised that wherever a development such as this is located there would almost certainly be landscape impacts as a result of the drill rig. Furthermore, the site has to be within a certain area to reach the shale that is being targeted. In terms of the need for the development it is noted that the Planning Practice Guidance identified a pressing need for shale exploration and the NPPF gives

great weight to minerals extraction and when this is balanced against a landscape character impact that is identified as not significant, the need outweighs the impact. In addition, it is important to note that the development is temporary with the most significant element (i.e. the drill rig) removed after four months. As such, the development is in accordance with Policy DM5.

640. As a result of the landscape impacts, consultation responses have stated that the development would be in contravention of Policy MP12 of the Nottinghamshire Minerals Local Plan draft submission, because the development would give rise to unacceptable impacts on the environment. In light of the above assessment, the MPA disagrees and has come to the view that the landscape and visual impact of the development would not be unacceptable.

641. When determining minerals planning applications the NPPF states that local planning authorities should ensure that there are no unacceptable adverse impacts on the natural and historic environment, and it is considered that landscape and visual impacts fall within this. In light of the above assessment, the landscape and visual impacts are acceptable and the development therefore meets this aspect of the NPPF.

<u>Ecology</u>

Designations

642. There is one Site of Special Scientific Interest (SSSI) within 3km of the application site, namely Mattersey Hill Marsh SSSI which is located 2.7km to the north-east. It is noted as a fine example of neutral marsh communities on old gravel workings and extends for approximately 4.89ha.

643. The Daneshill Lakes Local Nature Reserve (LNR) is located 1.6km to the north-east of the application site. The dominant feature is the lakes and associated wetlands which are important for overwintering waterfowl.

644. Within a 2km radius of the application site there are two non-statutory Local Wildlife Sites including the Tinker Lane, Barnby Moor (LWS) which comprises trackside verges with a notable community. It extends around the north, west and south of the application site. At its closest it is approximately 250m north of the application site. Also of note is the Daneshill Lakes and Woodland LWS located approximately 1.6km to the north-east of the application site. The Daneshill Lakes and Woodland LWS covers largely the same area as the Daneshill Lakes LNR, although is slightly larger, also covering land to the south, east and central areas. The Daneshill Lakes LWS is a very rich mosaic of woodland, marsh and aquatic habitats on old sand and gravel workings and is of note for both its plant and animal communities.

645. There are no European designated sites (such as Special Areas of Conservation or Special Protection Areas) within 10km of the application site.

Designations – Air Quality (Emissions)

646. The applicant has undertaken modelling of the emissions for annual and 24hr NOx, and nitrogen and acid deposition at Mattersey Hill Marsh SSSI, Tinker Lane LWS and Daneshill LWS.

647. The Environment Agency provides guidance on how the air quality impacts on ecological sites should be assessed. Impacts can be screened as insignificant if the following criteria are met:

- Process Contribution (PC) <1% long term critical level and/or load <u>or</u> that the Predicted Environmental Concentration (PEC) <70% long-term critical level and/or load for European sites and SSSIs.
- PC <10% short term critical level for European sites and SSSIs.
- PC <100% long-term critical level and/or load other conservation sites.
- PC <100% short-term critical level for other conservation sites.

648. The applicant has assessed the emissions from NOx from the onsite power generation plant on Mattersey Hill Marsh SSSI, Tinker Lane LWS and Daneshill Lakes LWS. The results are set out in the tables below.

Table 16 - Mitigated and unmitigated process contribution to NOx critical levels (µg/m^3)

ID	Site	NOx Annual				NOx – 24hr			
		Unmitigated		Mitigated		Unmitigated		Mitigated	
		PC	%CL	PC	%CL	PC	%CL	PC	%CL
ER1	Mattersey Hill SSSI	1.4	4%	0.3	1%	17.5%	23%	3.5	5%
ER2	Tinker Lane LWS	8.8	29%	1.8	6%	301%	401%	60.2	80%
ER3	Daneshill LWS	2.1	7%	0.4	1%	24.8%	33%	5	7%

Table 17 - Mitigated and unmitigated process contribution to critical loads (µg/m^3)

ID	Site	Nitrogen Deposition (kgN/ha/yr)				Acid Deposition (Keq/ha/yr)			
		Unmitigated		Mitigated		Unmitigated		Mitigated	
		PC	%CL	PC	%CL	PC	%CL	PC	%CL
ER1	Mattersey Hill SSSI	0.14	0.9%	0.03	0.2%	0.010	1.1%	0.002	0.2%
ER2	Tinker Lane LWS	0.88	8.8%	0.18	1.8%	0.063	4.9%	0.013	1.0%
ER3 – Marsh habitat	Daneshill LWS	0.21	1.4%	0.04	0.3%	0.015	Not acid sensitive	0.003	Not acid sensitive
ER3 – Woodland habitat	Daneshill LWS	0.42	4.2%	0.08	0.8%	0.030	2.6%	0.006	0.5%

649. On the basis of the above, the air quality assessment states that the emissions of NOx from onsite generation plant are considered not likely to damage the

Mattersey Hill Marsh SSSI and are not considered to represent significant pollution at the nearby LWSs.

650. The applicant also notes that whilst the emissions have been abated, the model is based on all onsite power generation operating continuously throughout the year, whereas the drill rig generators (which are the major source of combustion emissions) would only be operational for a maximum of 4 months. Therefore, in line with the Environment Agency guidance the actual long-term impacts would be approximately one third of the predicted levels.

651. The applicant has also considered the impact of NOx emissions from both the on-site power generation and site traffic for the Tinker Lane LWS (due to its proximity to the roads carrying traffic generated by this development). The results from the Environmental Statement are set out in the table below.

Table 18 - Predicted combined impact at Tinker Lane LWS

	Process Contribution			
	Roads	**Power**	**Combined**	**% of CL/CLO**
Annual NOx ($\mu g/m^3$)	1.79	1.75	3.54	12%
24hr NOx ($\mu g/m^3$)	32.4	60.2	92.6	123%

652. As set out in the table above, based on a worst case scenario of peak power generation and peak traffic movements, the proposal would not exceed the annual NOx critical level in relation to the Tinker Lane LWS. However, based on these combined worst case scenarios, the 24 hr NOx critical level for the Tinker Lane LWS would be exceeded. The applicant has stated in the Environmental Statement that the worst case scenario would not occur and that 24 hour NOx would actually be below the critical level. The applicant has submitted further information to substantiate this this statement.

653. The applicant explains that the peak emissions impact from vehicles would occur at the boundary of the Tinker Lane LWS and verge of the A634 when winds are from a north-easterly direction. However, due to dispersion NOx concentration decreases with distance and typically it would decrease by over 50% at distances greater than 25m from the side of the road.

654. In addition, the applicant highlights for the traffic emissions the above ‘worst case’ assessment was based on 36 HGV movements (during the construction and restoration phases) and 40 light vehicle movements (during the drilling phase). However, during the drilling phase there would actually be an average of 12 daily HGV movements. The applicant notes that emissions from light vehicles is much lower than from HGVs and states that the actual emissions and resultant impacts of NOx from traffic during the drilling phase would be less than 50% of that initially predicted in the worst case scenario. The applicant has also stated that the peak predicted 24hr NOx impacts from the onsite power generation plant would not occur at the roadside. As a result of these factors, the applicant has provided a more representative 24hr NOx combined impact at the Tinker Lane LWS, as set out in the table below:

Table 19 – Revised predicted combined 24-hour NOx impacts on Tinker Lane LWS

	Process Contribution			
	Roads	**Power**	**Combined**	**% of CL/CLO**
Road verge	~<16.2	~55	~<71.2	~<95%
Power Plant Peak	~<8.1	60.2	~<68.3	~<91%

655. The applicant states that the revised cumulative 24 hour NOx figures demonstrate that there would not be a significant effect on the Tinker Lane LWS as a result of emissions.

656. Natural England is satisfied that the proposed development would not damage or destroy the features for which Mattersey Hill Marsh SSSI has been designated. Nottinghamshire Wildlife Trust is of the view that the levels for nitrogen would be exceeded for both the critical load and critical level for Mattersey Hill Marsh SSSI and Tinker Lane LWS if operations take place for 12 months, but not if reduced to a third for the 4 months proposed. As such, NWT state that if drilling were to be limited to only 4 months they are satisfied there should not be a significant effect from NOx.

657. NCC Ecology highlight that the Tinker Lane LWS has been inappropriately categorised as hedgerow, rather than grassland, when considering critical load ranges. Whilst this is noted, the range given for hedgerow is 10-20 kgN/ha/yr and the relevant grassland range is 10-15 kgN/ha/yr. The applicant has assessed the critical load using the bottom of the range for hedgerow, which is the same as grassland. As such, whilst an incorrect habitat is listed, there is no error in the process contribution and its percentage of the critical load.

658. NCC Ecology has also noted that the applicant indicates that fen, marsh and swamp habitat is not sensitive to acidity but they have not justified this in the supporting text. Nevertheless, NCC Ecology note that the PC for NOx deposition is below the significance thresholds in relation to the Critical Load/level for each of the ecological receptors, when the 4 month operation and abatement measures are factored in, and recommended that these elements are conditioned.

659. Following the submission of additional information NCC Ecology note the applicant's conclusions that the 24-hour NOx impact on the Tinker Lane LWS would be below the 100% Critical Load/Level and therefore not 'significant pollution'. NCC Ecology recommend that advice be taken from the Environment Agency, but it should be noted that neither the Environment Agency nor the Bassetlaw Environmental Health team have raised concerns about the additional information.

660. NCC Ecology suggest that the Environment Agency are consulted on the air quality methodology and conclusions drawn. The Environment Agency has been consulted and confirm that the air quality assessment has not been considered as part of the planning application process, but that air quality would be assessed as part of the environmental permit process. The Environmental Permit was issued on 23 November 2016.

661. Concerns have been raised by groups and individuals regarding air quality impacts on wildlife, with particular reference to Mattersey Hill Marsh SSSI and

nitrogen deposition. A request that drilling is limited to 4 months has been made. It has also been stated that there would be even more air pollution if the application progressed beyond exploratory and appraisal activities.

662. In light of the above, the MPA is satisfied that there would not be an unacceptable impact on any designated ecological sites as a result of air quality, provided that drilling is limited to 4 months. This can be the subject of a condition. Future activities are not for consideration as part of this application.

Designations – Air Quality (Dust)

663. The applicant has undertaken an assessment of the impact from dust on sensitive receptors (up to 500m from the application site). Tinker Lane LWS is identified as the only ecological receptor with the potential for an impact to occur as a result of dust deposition.

664. The applicant states that as a result of the standoff distances to the LWS the risk of impact occurring during construction, drilling, evaluation and decommissioning is low. Nevertheless, mitigation measures would be implemented as set out in the air quality assessment. The applicant is of the view that effective suppression techniques together with monitoring and other control methods should ensure than any impacts arising from dust deposition are avoided or minimised.

665. Concerns have been raised in consultation responses that there is no mention of the effects of continued deposit of dust on local habitats and there is specific reference to dust impacts on Mattersey Hill Marsh SSSI.

666. NWT notes the impact that dust can have on plants, however, they highlight that the worst dust-generation would likely be for the few months of the construction period and that the applicant concludes that good dust suppression would mitigate this. NCC Ecology also raises no concerns provided that the Dust Management Plan is secured by condition.

667. In light of the above, the impacts of dust on ecology are not significant and the implementation of the Dust Management Plan would be secured by condition.

Hydrology

668. The applicant has considered indirect effects on ecosystems dependant on surface water. There are no surface water courses near to the application site. In the event of a spillage occurring on site the mitigation measures included in the site design would contain any spill and safeguard the local water environment. The applicant states that the application site would be bunded and underlain by an impermeable liner and that spill kits would be maintained on site. Materials that could pose a risk to the water environment would be stored in impermeable containers of a suitable size. The applicant therefore considers the impact on surface waters and surface water dependent ecosystems as negligible.

669. A number of groups have raised concerns in relation to surface water impacts on ecology, particularly from the risks associated with spillage of pollutants. There is also a request for robust hydrological modelling.

670. NWT states that in the absence of surface watercourses in the vicinity of the proposed development site, they are satisfied that pollution in the immediate area is low risk. However, NWT do raise concerns regarding groundwater and its potential impact on surface water wider afield. This is considered below in relation to hydrogeology. NCC Ecology notes that there are no watercourses on or near the site and that drainage would be contained. As such, they consider it unlikely that there would be impacts on surface water. The Environment Agency has issued the Environmental Permit and within the decision document in relation to surface water they note that they are satisfied that all appropriate measures will be in place to acceptably reduce any risk of contamination.

671. In light of the above, the MPA is satisfied that the hydrological modelling is sufficient and that the risks of spillages would be adequately mitigated. As such, the surface water risk to ecology is acceptable.

Hydrogeology

672. The applicant has considered the potential for indirect effects on groundwater and resultant impacts on groundwater-dependent ecosystems.

673. They note the potential exists for hydraulic continuity with groundwater that the proposed exploratory well would be drilled through. The sensitivity of Mattersey Hill Marsh SSSI is considered to be high and the sensitivity of Daneshill Nature Reserve and LWS is considered to be medium. However, given the distance from the application site and the natural dilution and attenuation of any pollution that could occur, the potential indirect impact as a consequence of groundwater from beneath the application site passing to the SSSI and Nature Reserve is assessed as negligible. As a result the applicant has assessed the significance of the effect as negligible at both receptors.

674. The potential for impacts on ecology as a result of groundwater contamination has been raised by a number of groups and individuals. There is particular concern about Mattersey Hill Marsh SSSI and the Daneshill Nature Reserve and LWS as these are groundwater-sensitive. There are concerns about the impact on the volume (through abstraction) and quality (as a result of contamination) of groundwater and it is suggested that the mitigation measures proposed are not sufficient to claim that there would be no adverse impacts. It is also suggested that the groundwater contamination assessment is insufficient and more robust hydrogeological modelling is requested.

675. Nottinghamshire Wildlife Trust has also raised concerns about potential impacts on groundwater, noting that there may be connectivity with Mattersey Hill Marsh SSSI and Daneshill Lakes LWS. NWT notes that the applicant is proposing a groundwater monitoring programme so that any potential impact on groundwater can be identified early. Should a variation from the baseline then be recorded, mitigation can be instigated which would reduce the impact on potential receptors. NWT highlight that the applicant has not outlined what the

mitigation measures or controls are and there is no information on lag time of effects and how quickly any reverse of impacts could be achieved.

676. In addition, NWT disagree with the applicant's assessment that the significance of effect is negligible at Mattersey Hill Marsh SSSI and Daneshill Lakes LWS, stating that whilst the applicant has asserted that their techniques would work in an exemplary manner, there is no evidence of where this has been done, and in real life circumstances it is the case that things can, and do, go wrong. As a result NWT request more details of where such activities have taken place in fractured and unpredictable geology without pollution incident occurring.

677. Natural England, the statutory body responsible for the protection of SSSIs, is satisfied that the proposed development would not damage or destroy the interest features for which Mattersey Hill Marsh has been designated.

678. In addition, the Environment Agency has issued an Environmental Permit for the site. Within the permit decision document the EA state the following in respect of groundwater:

"*The only potential source is the drilling muds. As stated above we believe this source is of a quantity and concentration so small as to obviate any present or future danger or deterioration in groundwater and when drilling through an aquifer the operator will be required to use water based muds only which further minimises the risk of pollution.*

Given this, and that the Application is for a straight forward stratigraphic investigation, it is considered that there need be no requirement for monitoring as a condition in the permit. It would be unreasonable to require the Operator to monitor groundwater for something they are unlikely to find".

679. The concerns made in representations and by NWT are noted. However, Natural England, the statutory body responsible for protecting SSSIs is satisfied that there would not be an impact on Mattersey Hill Marsh SSSI. Furthermore, the Environment Agency is satisfied that the risk of contamination is so low that monitoring is not required. Notwithstanding this, the applicant is proposing groundwater monitoring boreholes as part of the planning application anyway.

680. Nottinghamshire Wildlife Trust notes that the application mentions the importance of groundwater in the Nottingham Castle sandstone as base flows for the River Idle, but that the impacts of the development do not appear to have been assessed specifically for the River Idle. As a result, NWT state that as catchment hosts for the Idle, they are not satisfied that an adequate Water Framework Directive (WFD) assessment has been undertaken.

681. Whilst the applicant has not explicitly stated in the application that the River Idle has been considered, they do state in their list of potential receptors that they have considered larger surface watercourses shown to be in hydraulic continuity with Nottingham Castle Sandstone. The applicant has clarified that the River Idle was considered as part of this. The applicant has assessed the effect on surface watercourses (including the River Idle) as negligible (not significant) for all phases of the development.

682. A representation has suggested that water beetles and waterfowl on the River Idle would be affected. In light of the above, the risk of this is considered negligible (not significant).

Designations - Lighting

683. The applicant has undertaken a light spill assessment and modelled light contours from the proposed development. Lighting at the edge of the application site is predicted to be 0.5 lux.

684. Concerns have been raised by groups and in public representations that there could be light impact on designated ecological sites including Mattersey Hill Marsh, Daneshill Lakes LWS/LNR and Tinker Lane LWS.

685. Light impact on designated ecological sites have not been raised as an issue by Natural England, Nottinghamshire Wildlife Trust or NCC Ecology. Given that the nearest designated ecological site (Tinker Lane LWS) is 250m north of the application site and light spill would reach only 0.5 lux at the edge of the application site, no significant light impacts are predicted to occur at any designated ecological sites.

Designations – Noise and Vibration

686. Objections to the proposed development have been received on the basis that there could be noise and vibration impacts on designated ecological sites, with specific reference to Mattersey Hill Marsh SSSI, Daneshill LWS/LNR and Tinker Lane LWS.

687. Given the distance from the site, no significant noise impact is expected at Mattersey Hill Marsh SSSI or Daneshill LWS/LNR. It is noted that noise levels are predicted to be up to 45-50 dB at Tinker Lane LWS during drilling and up to 60-65dB during construction. However, Tinker Lane LWS is designated for its botanical value and, as such, noise levels would not impact upon the reason for its designation. Furthermore, noise at designated sites has not been raised as an issue by NCC Ecology, Natural England or Nottinghamshire Wildlife Trust.

Habitats

688. The applicant has undertaken a Phase 1 Habitat Survey as part of the ecological assessment. The habitats within the site fall into the category of being ‘undesignated’ and have been evaluated as being at the lowest level of ecological importance (site level only).

689. The development would result in the temporary loss of arable habitats extending to around 2.2ha, a short length of species-poor hedgerow and a small number of young trees. The applicant considers the effects to be of low ecological significance and would not involve habitats considered to be of a high priority for conservation.

690. Concern has been raised in consultation responses that the botanical survey was undertaken in September, which is not the best period to determine floral numbers and habitation, and therefore the floral counts are underestimated.

Indeed, Nottinghamshire Wildlife Trust also make this point, although they do go on to say that the habitats within the proposed development footprint are unlikely to be of LWS quality and that the loss of those habitats from a botanical perspective is unlikely to be significant.

691. NCC Ecology note that the development footprint is located almost entirely within an area of intensively managed arable farmland, although it would also affect small areas of semi-improved neutral grassland, which form part of the 'Arable Field Margin' and 'hedgerow' Section 41 habitats of principal importance. NCC Ecology consider the loss of this as minor, but request that a condition is used to require the protection of retained vegetation (hedgerow and trees) during construction and the reinstatement of habitats during restoration.

Birds

692. The ecological assessment reports that the Nottinghamshire Biological and Geological Records Centre (NBGRC) has been consulted and has returned records for Corn Bunting, Lesser Redpoll and Willow Tit within a 2km search area for the application site. None of these records related to the application site.

693. The applicant states that the National Biodiversity Network (NBN) has returned a relatively large list of birds, however, the resolution is at a 10km level and therefore the search encompasses former gravel pit sites such as Daneshill Lakes which have an ornithological interest due to the presence of open water.

694. The ecological assessment highlights that the application site comprises part of a field used to grow crops and trimmed hedgerow which are both typical of the wider area. It is reported that there are no features which could be of value to breeding birds such as ponds, marshy grassland or scrub. The applicant is of the view that due to the frequency and intensity of agricultural operations within the fields themselves any nesting and feeding activity by birds is most likely to take place within the field margins and hedgerow.

695. The applicant takes note of a young shelterbelt to the south-west of the application site and it is stated that this is likely to be used by a typical range of common birds associated with farmland such as carrion crow and wood pigeon for breeding between March and August.

696. The boundary hedgerow and margins which may provide opportunities for nesting and feeding would be retained and buffered. There would be the localised removal of a very short section of hedgerow and a small number of trees. The applicant states that if this were to take place during the nesting season, checks would be made by an experienced ecologist and if nests are present then works would cease until nesting has ceased and the young have fledged.

697. Overall, the applicant has assessed the breeding bird assemblage within the application site as being likely to be of ecological value at a site level only and due to the absence of predicted effects the applicant considers that further surveys in respect of breeding birds are not necessary to inform the assessment.

698. Nottinghamshire Wildlife Trust raise concerns about the lack of a breeding bird survey, highlighting that there is the potential presence of red list farmland Birds of Conservation Concern. Concern about the lack of breeding bird survey has also been raised in representations from the public and other organisations. NCC Ecology also highlights the lack of a breeding bird survey.

699. NCC Ecology accept that the site is likely to support a range of typical farmland birds, however it is highlighted that the desk study has recorded records of Corn Bunting (a rare and localised species in Nottinghamshire) within a 2km search area, whilst the shelter belt nearby provides suitable breeding opportunities for Hobby, a species protected under Schedule 1 of the Wildlife and Countryside Act (although it is of green list conservation category). In the absence of bird surveys it is not possible to determine whether either species is likely to be affected by the proposals, and NWT reflect this view.

700. There is particular concern from the public, groups/organisations and NWT that there could be an indirect impact arising from noise on birds. Attention is drawn to the fact that there would be elevated noise levels for the surrounding hedgerow and field margins and that parts of the shelter belt plantation would experience noise levels in the 55-60dB range during drilling and up to 70-75dB during construction. NWT also state that the plantation is quite an unusual feature in the intensively farmed landscape and therefore it cannot be assumed that birds, once disturbed, would be able to easily move elsewhere.

701. NCC Ecology highlight that it is evident that there would be elevated noise around the application site during both construction and operation and it is possible that this would give rise to impacts on breeding birds as a result of disturbance (sudden unexpected noise or masking territorial songs and calls). NCC Ecology also criticises the misleading reference to increases in noise of 1dB (evening) and 3dB (night), which is presumably as measured at the human receptors. Notwithstanding this, NCC Ecology is of the view that the increased noise is unlikely to give rise to significant impacts for the following reasons:

a) The application site, and the land surrounding it, is intensively managed arable farmland bounded by hedgerows; there are no areas of notable habitat within the area affected by elevated noise levels that might otherwise support significant populations of notable species.

b) Despite the absence of surveys, it is likely that only common and widespread (albeit declining) farmland bird species would be affected; the possible exception being Corn Bunting and Hobby.

c) Elevated noise would be experienced for a relatively short period of time, so impacts would be short lived and it cannot be expected that any significant, long term effects would occur.

702. NCC Ecology is of the view that should corn bunting be affected by noise, they would be displaced into similar habitat in the surrounding area.

703. NCC Ecology highlight the potential indirect noise impact on the shelter belt, which has been identified as providing a suitable breeding opportunity for Hobby. The applicant’s noise contours demonstrate that the shelterbelt would

experience noise levels of up to 70-75dB at its eastern side (closest to the application site) and 60-65dB at its western site, during construction and restoration. Based on the noisiest drilling rig, during drilling the shelterbelt would experience noise in the 55-60dB range at eastern side (closest to the application site) and 45-50dB at its western side. In considering these noise levels the NCC Ecologist has suggested a condition that development should only commence during the bird breeding season if a survey has been undertaken to confirm that breeding Hobby are not present.

704. The reasoning for such a condition is that if activity starts during the breeding bird season, it could result in a noise impact on birds (potentially Hobby) within the shelter belt which have commenced nesting. However, if activities were to commence outside of the breeding bird season, and then extend into the breeding bird season, birds that were sensitive to the noise would have been dissuaded from nesting in the affected areas in the first place.

705. It is important to recognise that such a condition would have to apply separately to the commencement of the construction, drilling and restoration phases as these would not necessarily run immediately one after the other.

706. It is noted that the arable field and headland would offer foraging for a range of farmland birds and nesting for a small number of ground nesting species. Given the widespread nature of the arable farmland in the area the loss is not considered significant. However, vegetation clearance should be controlled during the bird nesting season through condition.

707. The MPA disagrees with the statement by NWT that the plantation is quite an unusual feature in the intensively farmed landscape. There are other small wooded areas within the wider landscape (including 300m to the south-west, 750m to the east, 850m to the west, 900m to the south-west and 1km to the north-west). These could provide opportunities for birds, if disturbed, to relocate.

708. Given the lighting at the edge of the application site is predicted to be 0.5 lux it is considered unlikely that there would be any significant impact on birds resulting from light. Given that vibration is reported to be imperceptible when more than 20m from the drill it is not anticipated to result in any significant impact.

709. It is noted that concerns have been raised in representations about impacts from noise and light on Tawny Owl, Kestrel and Buzzard. These species have not been identified within the applicant's summary of protected and notable species and have not been raised as being of concern by NCC Ecology or NWT.

Bats

710. The applicant states that the field containing the application site is a habitat of negligible value to bats as a foraging resource and the loss of 2.2ha is not considered to be of ecological significance.

711. The applicant notes that the boundary hedgerows are species-poor and are trimmed to a low height. The hedgerows are being retained with the exception of

a short length being removed for the proposed access. The retained hedgerow would be protected by an 8m buffer and perimeter fencing and bunds.

712. For a four-month period the development would require artificial lighting for operational and security purposes, as drilling would take place on a 24-hour basis. The applicant highlights that the Lux contour plan shows that artificial light spill and indirect illumination of hedgerow would be largely avoided.

713. Overall, the applicant is of the view that due to the absence of predicted effects and the poor quality foraging resource further surveys in respect of bats are not necessary.

714. NWT notes the absence of bat roosts in the area. However, they raise concern about the lack of bat activity survey. In the absence of a survey NWT state that it is not possible to determine whether bats would be affected by noise, vibration or light. Impacts on bats as a result of noise and light are also raised by the public and organisations in consultation responses and it is suggested that more surveying should be undertaken.

715. NCC Ecology accepts that the site and the nearby shelterbelt do not provide significant roosting opportunities. With regard to light impact, NCC Ecology refers to the light modelling undertaken by the applicant which shows lux contours emanating from the site. The 0.5 lux contour is shown as being retained almost entirely within the development footprint and would not impinge on the hedgerows to the south or east (except to a small degree around the site entrance). On this basis, NCC Ecology is of the view that there would not be any significant light impact as a result of the proposals.

716. Given that NCC Ecology is of the view that adjacent hedgerow would not suffer unacceptable light impact it is unlikely that the more distant shelter belt plantation would be unacceptably impacted. Notwithstanding this, it is noted that lighting is indicative at this stage and it is therefore recommended that before development begins a detailed light assessment using the chosen rig is submitted to ensure that light levels are no greater than those modelled.

717. NCC Ecology has given further consideration to noise impacts on foraging bats and reference is made to a study which states that echo-locating bats appear to be at relatively low risk of direct impacts of anthropogenic noise due to bats using frequencies that are high above the dominant frequencies of the main sources of anthropogenic noise (e.g. road traffic and aircraft). NCC Ecology also highlights that roosting bats are widely recorded in association with noisy environments such as church bell towers, road and rail bridges and in proximity to airport runways. The noisiest activities would take place during the daytime only (construction and restoration) and would not therefore affect foraging and commuting bats. Overall, NCC Ecology states that the temporary and short term increase in noise levels surrounding the application would be unlikely to have a significant impact on bats.

718. In light of the above, whilst is it noted that the applicant has not undertaken bat activity surveys, it is considered that the impacts associated with noise and light on bats would be such that there would be no significant impact on foraging or commuting.

719. It is noted that a very small section of hedgerow (circa 4m) would be removed during the widening of the site access. This is not considered significant from a bat commuting and foraging perspective and the rest of the field hedgerow would be retained and protected from the application site by fencing/soil bund and an offset buffer of approximately 8m.

Reptiles

720. The applicant has consulted the Nottinghamshire Biological and Geological Records Centre (NBGRC) and National Biodiversity Network (NBN), which returned records for the more common reptile species in the area. The extended Phase 1 Survey concluded that the roadside verge grassland could provide a habitat for reptiles such as slow worm. As a result, the applicant has undertaken a reptile survey which did not record the presence of any reptiles. NCC and NWT raise no concerns with the results of the reptile survey.

Amphibians

721. The applicant has consulted the NGBRC and NBN, which returned no records of Great Crested Newt within 2km of the site. The applicant's search of aerial photography has not located any ponds within 500m of the application site and terrestrial habitats are described as poor. The applicant reports that the presence of a single common adult toad was recorded during the reptile survey. However, they are of the view that no further surveys are required.

722. NWT highlights that a common toad was recorded and states that toads are a Section 41 Species of Principal Importance. Therefore, more information should be provided about where the toad was found and an effort should be made to determine whether there is a toad population and whether there would be impact on a toad population as a result of habitat removal.

723. Parish Councils have suggested that amphibians may be underreported.

724. NCC Ecology notes that a single common toad was recorded, but does not raise any habitat concerns. As the applicant has highlighted there are no recorded ponds within 500m of the application site and the habitats for amphibians is poor. Furthermore, the reptile survey (during which the toad was recorded) involved setting up 50 refugia and visiting them on six separate occasions. During this surveying period a single toad was observed. As such, it is not unreasonable to view its presence as transitory.

725. The intensively managed farmland does not represent suitable habitat for toads. The single common toad was found in grassland adjacent to the application site. The presence of a toad population is highly unlikely. Even in the unlikely event that the toad was not transitory and there is a small population present, the area of grassland to be lost either side of the access (a couple of metres) is small enough to not have a significant impact on habitat.

Other Species

726. There are no waterbodies or watercourses within or nearby the site to support water vole.

727. The applicant reports that the area represents suboptimal habitat for badgers and no field evidence was found during the Phase 1 habitat survey. NCC Ecology and NWT accept this, although NWT state that as badger activity can vary from season to season this should be reviewed before any development takes place. Whilst NWT's view is noted, such surveys should only be required where there is a reasonably likelihood of a species being found. Given the sub-optimal habitat this is not considered to be the case.

728. The applicant notes that no site is without invertebrate interest, however, they are of the view that it is highly unlikely that the applicant site would support any protected, rare or notable species due to the intensive agricultural management which takes place. NCC Ecology raises no concern in relation to invertebrates and NWT states that there would be a small loss of invertebrate habitat as a result of widening the access track. Given that the habitat loss would be small and the presence of protected, rare or notable species is highly unlikely, this loss is not considered significant.

Biodiversity Enhancements

729. Natural England highlights that the application may provide opportunities to incorporate features into the design which are beneficial to wildlife and the authority should consider securing measures to enhance biodiversity if it is minded to grant planning permission. This approach is in accordance with Paragraph 118 of the NPPF.

730. The development is for a temporary period and would be restored to its original state following completion of the works. The existing site is of low biodiversity value and due to the nature of the proposed operations there is limited opportunity for biodiversity enhancement. However, NCC Landscape has recommended that a condition is used to secure site mitigation for adverse impacts on landscape character and that the roadside hedge if it is managed from the outset to increase in its height and fill any gaps prior to development. This could provide some, albeit very limited, biodiversity enhancement to the hedgerow in the specific areas that are managed.

Site Selection

731. Specifically in relation to ecology, Frack Free Nottinghamshire has questioned the applicant's consideration of alternatives and stated that no other individual sites were examined and that constraints identified do not appear to have been weighted. Whilst this is noted there is no requirement for the applicant to demonstrate that the 'best' site in ecological terms has been chosen. The ultimate question is whether the development is acceptable, taking account *inter alia* of its ecological effects.

Other

732. Concern has been raised that there could be an impact on small mammals as a result of the proposed development. Reference has also been made to hedgehogs. The concerns particularly relate to noise and vibration and there is concern that disruption would prevent species from being able to breed and hibernate successfully. The intensively managed farmland that is subject to the

proposed development is widespread in the wider area. If there are small mammals present at the site they would easily be displaced into the wider area and to a distance at which noise and vibration does not disturb them.

733. There has been a general criticism among a number of consultation responses that the ecological assessments are inadequate. The MPA has consulted Natural England, Nottinghamshire Wildlife Trust and NCC Ecology and has satisfied itself with the assessments that have been undertaken.

734. The proposed development is not anticipated to have any significant material cumulative ecological impacts with any other permitted, proposed or foreseeable development.

Policy

735. Within the NPPF Chapter 11 'Conserving and enhancing the natural environment' sets out how the planning system should contribute to and enhance the natural and local environment. Paragraph 118 of the NPPF sets out the principles that local planning authorities should follow to conserve and enhance biodiversity. The relevant principles are set out below:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

- proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;

- opportunities to incorporate biodiversity in and around developments should be encouraged.

736. In light of the above assessment, there would not be significant ecological harm resulting from the development and it would not be likely to have an adverse impact on a SSSI or the broader network of SSSIs. Therefore, the proposal is in accordance with the first and second of the above NPPF principles.

737. The fourth principle (the third principle not being engaged here) encourages the incorporation of biodiversity in and around developments. As outlined above, due to the nature of the proposed development there is limited opportunity for this. However, hedgerow management and infilling gaps is supported by the NPPF.

738. Some objections have raised concerns that the proposed development conflicts with Paragraph 109 of the NPPF. Paragraph 109, whilst relevant, is not

development-specific and sets out how the planning system as a whole should contribute to and enhance the natural and local environment. It encourages, among other things, a recognition of the wider benefits of ecosystem services; minimising impacts on and providing net gains for biodiversity; and preventing unacceptable pollution. The proposed development does not conflict with the aims set out in Paragraph 109.

739. It is noted that in objections, reference has been made to Paragraph 143 of the NPPF. This paragraph sets out the matters to be covered in the preparation of local plans and is not application-specific.

740. Policy M3.17 of the Nottinghamshire Minerals Local Plan states that planning permission would not be granted for minerals development which would adversely affect the integrity or continuity of habitats or features identified as priorities in the UK and/or Nottinghamshire Local Biodiversity Action Plan (BAP). The area of the development is intensively managed farmland and does not comprise BAP habitat. It is recognised that a small section of hedgerow would be removed but this would not be to an extent that could reasonably be considered to affect the hedges' integrity. Therefore, the proposal is in accordance with this policy.

741. Policy M3.19 of the Nottinghamshire MLP takes a similar approach to the protection of SSSIs as the NPPF. It states that permission should not be granted for development which would have an adverse effect, directly or indirectly, on the special interest of a SSSI unless the reasons for the development outweigh the nature conservation considerations. In light of the above assessment the development is in accordance with this policy.

742. Policy M3.20 of the Nottinghamshire MLP seeks to protect regional and local designated sites, such as Local Wildlife Sites (LWS). The policy relates to development 'in' areas which are regional or local designated sites. The proposed development is near, but not within any such sites. As such, strictly the policy does not apply. Nevertheless, the development would not have an unacceptable impact on any LWS.

743. Section B of Policy DM9 of the Bassetlaw Core Strategy applies to biodiversity and geodiversity. The policy expects development proposals to take opportunities to restore or enhance habitats and species' populations and to demonstrate that they will not adversely affect or result in the loss of features of recognised importance, including amongst other things: SSSIs; Local Wildlife Sites; Local and UK BAP Habitats; and protected species. Development that will result in the loss of such features may be supported where replacement provision is made that is considered to be of equal or greater value than that which will be lost and which is likely to result in a net gain in biodiversity. The policy states where new development may have an adverse impact on such features, alternative scheme designs that minimise impact must be presented to the Council for consideration before the use of mitigation measures is considered. Where sufficient mitigation measures cannot be delivered, compensation measures must be provided as a last resort.

744. There is little opportunity for the development to directly restore or enhance habitats and species' populations. However, there would not be a loss of

features of recognised importance as defined by Bassetlaw District Council in Policy DM9. The development would not have an unacceptable adverse impact on any ecological features of recognised importance.

745. In line with Policy DM4 of the emerging Nottinghamshire Minerals Local Plan Submission Draft the development would not affect the integrity of a European Site; would not give rise to a significant adverse impact on a SSSI, would not give rise to the loss or deterioration of a LWS; and would not result in the loss of populations of a priority species or areas of priority habitat. Policy DM4 of the emerging MLP also seeks to enhance Nottinghamshire's biological resources by retaining, protecting, restoring and enhancing features of biodiversity interest; make provision for habitat adaptation and species migration; and maintaining and enhancing ecological networks. As set out above, the proposed development is part of an intensively managed agricultural field and there is little opportunity for biodiversity enhancements. However, a condition to secure hedgerow management and gap filling would be supported by this policy.

746. In summary, from an ecological perspective the proposed development, with mitigation measures in place, would not have an unacceptable impact on any ecologically designated site, protected species or species of conservation concern.

Hydrology and Flood Risk

747. The Environmental Statement includes a chapter on geology and the water environment. Within this, consideration has been given to potential surface water impacts and flood risk.

748. The site is located on an elevated area above the River Ryton, approximately 2km to the west and the River Idle, approximately 4.2km to the east. The River Ryton is a tributary of the River Idle and discharges to the Idle just south of Bawtry.

749. To the east of the application site the ground drops to a relatively flat low-lying area which is drained via several drains and un-named watercourses which flow in a predominantly northerly direction, with outfalls to the River Idle to the east of Scrooby. The main drain in this area is known as the Ranskill Brook which is a minor watercourse which rises near to Daneshill Lakes and flows in a predominantly northerly direction to its confluence with the River Idle.

750. The applicant notes that River Basin Management Plans (RBMP) have been developed by the Environment Agency to assess the current and future state of all waterbodies including rivers, estuaries, lakes, coastal waters and groundwater in relation to the EU Water Framework Directive (WFD). It is noted that the application site falls within the Humber River Basin District. The original Humber RBMP was released in 2009 and an updated plan was published in 2015. The key waterbodies assessed by the Humber RBMP within the catchment of the proposed development were the River Ryton, Ranskill Brook and the Idle Tor Permo-Triassic Sandstone.

751. The applicant reports that the overall waterbody status is currently 'moderate' due to moderate levels of macrophytes (a type of aquatic plant) and

phytobenthos (algae) and elevated phosphate levels within the watercourse. The overall hydromorphology of the watercourse has improved since 2009 and now supports good conditions. The Environment Agency has set a target of maintaining a 'moderate' ecological status by 2027. Ranskill Brook has an overall status of 'good' which has improved from moderate since 2009.

752. There are a total of 23 licensed surface water abstractions within a 5km radius of the application site. Abstractions are mostly from the River Ryton and River Idle and are primarily for agricultural purposes. There are also 35 consented discharges within a 5km radius. The nearest abstraction is from the River Ryton approximately 2km to the south-west and the nearest discharge is approximately 1.1km to the east of the application site.

753. With regard to flood risk the application site is located entirely within Flood Risk Zone 1 (Low Probability). The site is on an elevated area of land with topography sloping away to the north, south and east. The groundwater risk is also said to be 'low' as available groundwater monitoring indicates that groundwater is located more than 10m below the site and there is limited seasonal variation of 0.5-1m per year. The table below sets out the applicant's assessment of flood risk.

Table 20 - Potential risks posed by flooding sources

Potential source	Potential flood risk to application site	Reason for decision.
Fluvial flooding	No	The site is located entirely within Flood Zone 1, low probability.
Tidal flooding	No	The site is remote from the coast.
Flood defence breech (failure)	No	There are no flood defences present within the vicinity of the site.
Flooding from rising / high groundwater	No	Little groundwater variation is recorded by long term groundwater monitoring boreholes.
Overland flow flooding	No	The site is located on an elevated position with ground levels sloping away to the north, south and east.
Flooding from artificial drainage systems	No	No other drainage systems are present up gradient of the application site.

754. The applicant concludes that the application site is not at risk of flooding. It is also highlighted that measures are proposed to collect and manage rainfall runoff shed from the site during and following development.

755. With regard to the potential contamination impacts the applicant has identified the key potential impacts as:

- The possible pollution of groundwater and surface water from the handling and use of drilling fluids and cuttings, suspended solids and other potential pollutants.

- The integrity of the well design and its ability to prevent the escape of drilling fluids, gas and formation fluids directly into groundwater and indirectly to surface water.

756. In order to prevent or reduce potential impact the applicant proposes a series of management and operational procedures including:

- The use of an Integrated Management System Manual which sets out the standard and procedures which the applicant is committed to uphold at all sites;

- The preparation of a monitoring plan which would state monitoring locations, chemicals to be monitored, sampling method and frequencies, set triggers and warnings for concentrations.

- Undertaking all statutory reporting obligations for the proposed development including data collection and reporting to the OGA, EA, HSE and the British Geological Survey (BGS).

- Production of a Construction Environment Management Plan (CEMP).

- Diesel tanks would have secondary containment which in addition to the sealed wellsite would ensure that any spillages would be contained within the wellsite. Refuelling would be undertaken within the sealed wellsite and spill kits would be available and staff trained to use them. There would also be an emergency spillage plan as part of the CEMP.

- Tool box talks would form part of the site operations and would be used to ensure all staff present were fully aware of potential impacts and procedures to be followed.

757. It is also highlighted that the well pad would be lined by an impermeable liner to provide a barrier between surface activities and groundwater. In addition, the site would be positively drained with runoff and any pollutants collected in a tank prior to disposal offsite at an appropriate facility. There would be bunding surrounding the well pad to contain any failure of the largest fluid containers. Materials which might pose a risk to the water environment (e.g. drilling fluid, cuttings, fuel, and waste welfare water) would be stored in impermeable containers.

758. The applicant has assessed the potential effects of the development in relation to surface water and flood risk for the three phases of the development (establishment, drilling and evaluation, and restoration).

759. With regard to the establishment phases the applicant assesses the sensitivity of surface water as high but as there are no surface water courses near to the application site and because much attenuation and dilution in groundwater would occur before any pollution would enter surface water, the resultant significance of effect on surface water is assessed as negligible. In addition, given the embedded mitigation and the absence of adjacent surface watercourses, direct surface water runoff in response to rainfall would result in a negligible impact on surface water quality or flood risk.

760. With regard to the drilling and evaluation stage the applicant highlights that there are no surface watercourses near the application site and there would be no direct discharge of pollution to surface water, and significant attenuation and

dilution of any pollution event would occur before a discharge (via surface or groundwater) is made to a surface watercourse. The applicant therefore considers the potential effects on surface waters and abstractions as being of negligible significance. With regard to flood risk the measures to collect and control surface water runoff would not increase flood risk offsite and, therefore, there is a negligible significance of effect.

761. In terms of restoration and decommissioning the applicant states that as for the establishment phase the impact on surface water quality and on surface water abstractions is assessed as having a negligible significance of effect. In relation to flood risk the restoration phase would restore the site to pre-development conditions and therefore replicate existing rainfall run-off rates. Therefore the significance of effect of this phase on flood risk is assessed as negligible.

762. The table below sets out the applicant's assessment of potential impact on surface water and flood risk.

Table 21 - Potential receptors and their sensitivity

Phase	Potential source of impact	Receptor	Sensitivity of receptor	Magnitude of impact*	Effect
Establishment	Pollution from spillages and from suspended solids generated by movement of soils	Surface watercourse	High	Negligible	Negligible (not significant)
	Increase in rate of runoff	Flood Risk	Minor	Negligible	Negligible (not significant)
Drilling and evaluation	Pollution from (a) spillages and handling site materials and/or (b) escape of drilling fluids / formation gas from the well	Surface watercourse	High	Negligible	Negligible (not significant)
	Increase in rate of runoff	Flood Risk	Minor	Negligible	Negligible (not significant)
Decommission and restoration	Pollution from (a) spillages and handling site materials and/or (b) escape of drilling fluids / formation gas from the well and/or (c) suspended solids from the re-instatement of soils.	Surface watercourse	High	Negligible	Negligible (not significant)
	Increase in rate of runoff	Flood Risk	Minor	Negligible	Negligible (not significant)

*Incorporating embedded environmental, design and management measures.

763. The Lead Local Flood Authority (LLFA) has been consulted on the application and are satisfied that the site is not affected by pluvial or fluvial flooding and the

information provided is sufficient to confirm that they have no objection to the proposed works.

764. The Environment Agency has reviewed the planning application from the perspective of controlled water protection with particular attention to the geology and water environment chapter. The Environment Agency raises no concerns with the application and is satisfied that the development can been granted planning permission subject to a condition relating to details for the proposed attenuation storage tank and details of how foul drainage would be dealt with.

765. NCC Ecology and Nottinghamshire Wildlife Trust highlight that there are no surface water courses nearby and consider the risk to surface water low.

766. Anglian Water has commented that the principal demand for water would be in drilling the well and providing potable water for ancillary works. They note that the water would be supplied by their network and are currently in discussions with the applicant about supply arrangements, which may include on-site storage. Anglian Water expect the proposal would require a connection to the network.

767. Whilst the Bassetlaw Environment Health team has raised no concerns in relation to pollution prevention and control, the formal consultation response from Bassetlaw District Council objected to the proposed development on the basis that the potential contamination risk has not been fully explored. In considering the applicant's assessment, and the consultation response from the Environment Agency, the MPA is satisfied that the contamination risk to surface water has been fully explored.

768. Public representations and a number of organisations have suggested that there could be impacts on surface water, with particular reference to spillages. It has also been suggested that surface water migrates to the east and pollution could be steered towards Daneshill Lakes, the River Idle and associated drains. It has been stated that due to potential impacts to surface water the development undermines the Water Framework Directive and more robust hydrological modelling should be undertaken. However, given the absence of surface water resources in proximity to the site the contamination risks to surface water are not considered significant, as set out above.

769. Some consultation responses have stated that the applicant does not know where water used in the drilling process would come from and there could be a reduction in the level of lakes nearby (e.g. Daneshill Lakes). These concerns are noted, however, the applicant states that water would be supplied by tanker and Anglian Water have confirmed that they are in discussions to supply the water. It is noted that Anglian Water have indicated that a connection may be made to their network, however, that is not what is stated in the planning application. In any event, local water abstraction is not proposed as part of this application.

770. NCC Reclamation has noted that the surface water scheme would be designed for a 1:100 year storm event and it is suggested that this may need to be designed to include for climate change and have a 30% surcharge on the design. Whilst it is recognised that it is good practice to futureproof development

against potential increase in precipitation as a result of climate change it should be recognised that the development is temporary in nature, limited to three years. Furthermore, the applicant has stated that the surface water system would be designed to contain run-off from 'at least' a 1:100 year storm event. In addition, a condition would be attached requiring approval of a drainage scheme and an attenuation storage tank, as requested by the Environment Agency, and this will confirm that there is suitable capacity.

Policy

771. The NPPF looks to prevent unacceptable risks from pollution and requires decisions to ensure that new development is appropriate for its location, with the effects of pollution on health, the natural environment and general amenity of the area to be taken into account (Paragraph 120). In addition, specifically in relation to determining minerals development the NPPF states at Paragraph 144 that local planning authorities should ensure that, amongst other things, there are no adverse impacts on the natural and historic environment.

772. Policy M3.8 of the Nottinghamshire MLP looks to protect the water environment and states that planning permission will not be granted where surface water flows would be detrimentally altered and that there should be no risks of pollution to ground or surface waters, unless engineering measures and/or operational management systems can adequately mitigate such risks. In addition, Policy DM2 of the emerging Nottinghamshire MLP seeks to prevent the detrimental alteration of surface water flows and the pollution of ground or surface waters.

773. Policy DM2 of the emerging MLP also supports development where it can be demonstrated that water resources, where required, will be used as efficiently as possible. The baseline case is that water required for operations would be tankered onto site during construction and operation, with waste water/fluid from the drilling process being removed from the site to a suitably permitted treatment works. The applicant states that there would be no recycling of water on site. As a result, the development is neutral in respect of this aspect of the policy.

774. In light of the above assessment, provided conditions are in place to ensure suitable surface water protection measures as recommended, it is considered that there would be no unacceptable impacts on surface water flows or quality. As such, the development is in accordance with the relevant sections of Paragraphs 120 and 144 of the NPPF; Policy M3.8 of the Nottinghamshire MLP; and Policy DM2 of the Emerging Nottinghamshire MLP.

775. Policy M3.9 of the Nottinghamshire MLP, Policy DM12 of the Bassetlaw Core Strategy and Policy DM2 of the emerging new MLP relate to water resources and flood risk. The proposed development is within a low flood risk area and there is no significant risk of flooding from fluvial sources; tidal sources; a flood defence breach; rising/high groundwater; overland flow; or artificial drainage systems. The development is accordance with all these policies.

Geology and Hydrogeology

776. The applicant has reviewed the Cranfield University Soilscapes website which indicates that the soils across the proposed development area are classified as 'freely draining slightly acid sandy soils'. The soils are typified as having a low fertility and are freely draining to underlying groundwater. The applicant has confirmed the free draining and sandy nature of the soils in a site walkover survey.

777. The applicant states that according British Geological Survey (BGS) mapping, no superficial deposits are shown to be present at the site and the bedrock is therefore anticipated to be close to the surface.

778. The BGS mapping studied by the applicant shows that the site is underlain by the Nottingham Castle Sandstone, comprising sandstones, mudstones, limestones, dolomite and conglomerates. The Nottingham Castle Sandstone in turn overlies Permian and Carboniferous strata. The anticipated vertical geological section for the proposed exploratory well is set out below:

Table 22 - Anticipated geology

Anticipated geological formations to be drilled	**Notes**	**Estimated depth – Total Vertical Depth Subsea - TVDSS (in metres)**
Sherwood sandstone		22-140 (+/- 5)
Zechstein group		140-288 (+/- 20)
Westphalian Coal Measure		288-1,360 (+/- 20-50)
Millstone grit	Secondary target	1,360-1,690 (+/- 150)
Bowland shale	Primary target	1,690-1,760 (+/- 250)
Carboniferous limestone		1,790 onwards (+/- 300)

779. The applicant highlights that the exploratory well has two main targets, the primary target being the Bowland Shale which is expected to be approximately 70m thick and the secondary target being the Millstone Grit Group and tight sands which are expected to be approximately 300m thick.

780. The applicant notes that the site falls within an area for which a licence was granted to remove or otherwise work coal using underground methods in 1994. The applicant has reviewed historic mining records and states that the proposed exploratory well would intersect a significant sequence of the Westphalian Coal Measure as evidenced from a Coal Mining Report, the Coal Authority Interactive Map Viewer and geological mapping. The applicant has reviewed these sources and states that the site is not within the zone of influence on the surface from past underground workings, neither is it in the zone of influence of any present underground workings, specifically:

- There are no known coal mine entries within 20 metres of the site boundary and there is no record of any gas emissions requiring action within the boundary of the site;

- The site is not within an area from which coal has been removed by opencast methods, is being removed or where a licence exists to extract coal by opencast methods in the future;

- There are no records of historic or current deep coal workings below the site.

781. Overall the applicant has concluded that the site has not been affected by historic mining and the proposed exploratory well would not intercept any current or historic areas of deep coal mining.

782. The applicant has summarised aquifer characteristics of each of the strata that would be drilled through. This is replicated in the table below.

Table 23 - Summary of aquifer designation

Age	Strata	Sub-strata	Aquifer classification	Aquifer description
Permian & Triassic	Sherwood Sandstone	Nottingham Castle Sandstone	Principal	Medium to coarse grained pebbly sandstone becoming very fine to medium grained sandstone at base. High intergranular flow with potentially high yields.
		Lenton Sandstone	Principal	
	Zechstein Group	Roxby Formation	Secondary B	Mudstones and siltstones with subordinate sandstones. Unit forms an aquitard between sandstone and limestone aquifers, some minor groundwater within any sandstone horizons.
	Magnesian Limestone	Brotherton Formation	Principal	Limestone aquifers divided by mudstones of the Edlington Formation which acts as a leaky aquitard between the two units. Groundwater flow predominantly through fracture flow within the limestone with significant regional variability.
		Edlington Formation	Secondary B	
		Cadeby Formation	Principal	
Carboniferous	Westphalian Coal Measures	Westphalian C	Secondary A	Extensive sequence of coal measures consisting of cyclical sandstone, siltstone, mudstone and coal seams.
		Westphalian B	Secondary A	Groundwater flow limited to the higher permeability sandstone and coal horizons, flow potentially altered by the presence of historic coal mining.
		Westphalian A	Secondary A	
	Millstone Grit	Millstone Grit	Secondary A	Fine to very coarse sandstones, interbedded with grey siltstones and mudstones. Intergranular flow primarily within the sandstone horizons.
	Bowland Shale	Bowland Shale	Secondary (undifferentiated)	Dark grey fissile and blocky mudstone with subordinate limestone and sandstone. Primarily unproductive strata, however limited groundwater potentially present with limestone and sandstone horizons
	Carboniferous Limestone	Carboniferous Limestone	Principal	Limestone aquifer with potentially high secondary permeability.

783. The applicant outlines that the near surface Nottingham Castle Sandstone (Sherwood Sandstone) is a regionally important ‘principal aquifer’ which provides both baseflow to watercourses in the area (River Idle and River Torne) and is an important source of potable water supplies. Groundwater flow within the Nottingham Castle and Lenton sandstones is predominantly intergranular with secondary flow possible within fractures and fissures associated with

localised faulting. Groundwater flow follows the regional dip in the strata, which dips to the east sloping beneath the Mercia Mudstone. Although the Nottingham Castle Formation and Lenton Sandstone are classified as two separate geological units, from a hydrological perspective the two strata act as a single unit and are classed as a single aquifer.

784. The Magnesian Limestone consists of two principal limestone aquifers (Brotherton Formation and Cadeby Formation) separated by low permeability mudstones. Groundwater flow within the Magnesian Limestone aquifer is predominantly by fracture flow, although there is some intergranular storage.

785. The applicant states that although groundwater is potentially present within the lower aquifer units (coal measures, Millstone Grit and Carboniferous Limestones) the depth of these units (in excess of 300m) negates the potential for there to be abstractions or receptors near to the site.

786. Groundwater monitoring data has been sourced by the applicant from the Environment Agency. The data is from six groundwater monitoring boreholes within 5km of the application site and it shows there is a seasonal variation between 0.5 and 1.0 metre. The groundwater level is reported to be 13mAOD, which is approximately 15m below ground level at the site.

787. The groundwater flow in the region is reported to be in a north-easterly direction and to the east of the site there is hydraulic connectivity between groundwater and surface water, particularly along the length of the River Idle and its tributaries. The applicant also reports that there is potential to the north-east and east of the site for groundwater in the Nottingham Castle Sandstone to be locally in hydraulic continuity with more recent superficial deposits and to provide baseflow to watercourses.

788. The applicant notes fishing lakes at Torworth Grange, located approximately 1km to the north-east of the application site, which are reported to be in hydraulic continuity with groundwater.

789. The applicant reports that there is no groundwater level monitoring for the limestone aquifer however prior investigations to the Permian Limestone indicates that the strata dips gently eastwards and groundwater follows this direction, although it can be affected locally by faults.

790. Within 5km of the application site there are a total of 27 groundwater abstractions and 23 surface water abstractions. Within 2km of the site there are five licensed groundwater abstractions. It is reported that most of the abstractions are for agricultural purposes and all within the 5km radius are installed within the sandstones of either the Nottingham Castle Sandstone or Lenton Sandstone.

791. The closest groundwater abstraction downstream of the application site is located 0.9km north-east, and is used for spray irrigation. There is a nearer abstraction at Jubilee Farm (0.8km) although this is not located downstream.

792. Severn Trent has a groundwater abstraction licence for two boreholes at Barnby Moor for potable water. These boreholes are located more than 2km south-east

of the application site and are not downgradient of the proposed development. The application site is outside of the Source Protection Zones 1 and 2 for this licence.

793. There are also reported to be three private water supplies within a 5km radius of the application site, all of which are groundwater sourced and supplied by the Nottingham Castle Sandstone. All three are west or north-west of the application site, thus not downgradient and the closest is located 2.3km distant.

794. The applicant notes that the proposed exploratory well is located within a Zone 3 (Total Catchment) Source Protection Zone (SPZ). This zone applies to the entire Nottingham Castle Sandstone aquifer and reflects the large number of abstractions within the aquifer and its high vulnerability. The Idle and Torne Catchment Abstraction Management System (CAMS) Licensing strategy indicates that the Nottingham Castle Sandstone is over-abstracted and there is no water available for future licensing.

795. With regard to groundwater quality the applicant states that there is no monitoring data available for the Nottingham Castle Sandstone aquifer or underlying aquifers. However, the regional aquifer has been assessed in the Humber River Basin Management Plan (RBMP). It is reported that both the chemical and quantitative quality of the regional groundwater is classified as poor due to the large number of groundwater abstractions impacting on water availability and overall poor groundwater quality. The latest RBMP indicated that the groundwater is unlikely to meet its target of achieving a good status by 2027.

796. The applicant's management and operational procedures for protecting surface water, as set out in the preceding section, apply equally to the protection of groundwater.

797. The applicant states that in consultation with the County Council and the Environment Agency they would establish and implement a baseline monitoring programme in advance of works being undertaken at the site and the exploratory well being drilled. The monitoring programme would allow groundwater quality, levels and ground gas to be recorded upstream and down of the site. The applicant suggests that the programme could be secured by an appropriately worded pre-development planning condition. The applicant also states that the frequency of monitoring and range of determinants monitored would be agreed with the County Council and the Environment Agency, and would continue into the construction, operation and decommissioning phases of the site.

798. The applicant states that the monitoring programme would allow early identification of any potential impacts on groundwater (and indirectly to surface water) from the proposed site, so that in the unlikely event that there is a variation from baseline conditions, mitigation can be instigated which would reduce the potential impact upon receptors.

799. The design of the well pad with impermeable layers, as discussed in the preceding section, would prevent vertical migration into groundwater from any accidental spillage on site.

800. The applicant has outlined that the risk of potentially polluting materials to groundwater (and indirectly to surface water) would be minimised to as low as reasonably practicable by good practice well design and construction, best available techniques and working to best practice guidance and regulations including:

- The Borehole Sites and Operations Regulations (1995);
- The Offshore Installations and Wells (Design and Construction, etc.) Regulation 1996;
- Oil and Gas UK Well Lifecycle Integrity Guidelines (Issue 3, March 2016);
- UKOOG UK Onshore shale gas well guidelines (Issue 3, 2015);
- Guidelines for the Abandonment of Wells (Issue 5, July 2015);
- Guidelines on Qualification of Materials for the Abandonment of Wells, Issue 2, October 2015; and
- American Petroleum Institute Standards (API) - where applicable.

801. The applicant reports that the design of the well would engage best available techniques and would provide sufficient barriers (steel and cement) between the well and groundwater, to reduce any risk to as low as reasonably practicable. The well design and drilling programme would be submitted to an independent well examiner for review. The inspector must be ‘independent’ and ‘competent’ as defined by the Oil and Gas UK industry guidance. Any concerns that the examiner may have would be discussed, remedied and agreed between the operator and the well examiner. Following well examination the design and programme would be submitted to the Health and Safety Executive (HSE) under a 21 day notification regulator requirement. The HSE would review and comment if they have any concerns. Well consent is acquired from the Oil and Gas Authority (OGA). Following this, well operations would commence. This process is in line with the Borehole Sites and Operations Regulations and the Offshore Installations and Wells (Design and Construction, etc.) Regulation 1996.

802. The application states that steel casing would be used to construct the well and would be cemented in the well in stages to protect groundwater and maintain well integrity. Cement would be pumped in a slurry form inside the well casing. This then rises up through the annular space between the outer face of the casing and the site of the exploratory well, where it sets. The applicant highlights that casing strings are pressure tested during installation to confirm full integrity and the results are recorded and maintained.

803. When drilling through the principal aquifers (Nottingham Castle Sandstone, Lenton Sandstone and Magnesian Limestone) the applicant would use water-based drilling fluids and no hazardous substances would be used. After isolating by casing and cement grout, a low toxicity oil-based drilling mud would be used to drill through the deposits below the Magnesian Limestone. The composition of the drilling mud would be agreed with the Environment Agency.

804. To reduce the risk of unplanned escape of well fluids to as low as reasonably practicable a suitably pressure-rated wellhead would be installed on the well within the well cellar. The wellhead would remain on the well for its full lifecycle duration. During drilling operations a blowout preventer would be installed for drilling sections below the Sherwood Sandstone to provide secondary well control. Primary well control is by means of a hydrostatic mud column.

805. The application states that the likelihood of lost circulation (of drilling fluid) would be considered, risk assessed and mitigated to as low as reasonably practicable during the well design process. The well design and programme would be reviewed by an independent well examiner and submitted to HSE. Details of any lost circulation materials that could be used during construction would be included in the Environmental Permitting process and agreed with the Environment Agency.

806. The applicant has assessed the potential effects of the three phases (establishment, drilling and evaluation, and restoration and decommissioning) of the proposed development. The results of the assessment are summarised in the table below.

Table 24 - Potential receptors and their sensitivity

Phase	Potential source of impact	Receptor	Sensitivity of receptor	Magnitude of impact*	Effect
Establishment	Pollution from spillages and from suspended solids generated by movement of soils	Nottingham Castle Sandstone	High	Minor	Minor (Not Significant)
		Lenton Sandstone	High	Negligible	Negligible (not significant)
		Magnesian Limestone	High	Negligible	Negligible (not significant)
		Mattersey Hill Marsh SSSI	High	Negligible	Negligible (not significant)
		Daneshill LNR	Medium	Negligible	Negligible (not significant)
Drilling and evaluation	Pollution from (a) spillages and handling site materials and/or (b) escape of drilling fluids / formation gas from the well	Nottingham Castle Sandstone	High	Minor	Minor (Not Significant)
		Lenton Sandstone	High	Minor	Minor (Not Significant)
		Magnesian Limestone	High	Minor	Minor (Not Significant)
		Mattersey Hill Marsh SSSI	High	Negligible	Negligible (not significant)
		Daneshill LNR	Medium	Negligible	Negligible (not significant)
Decommission and restoration	Pollution from (a) spillages and handling site materials and/or (b) escape of drilling fluids / formation gas from the well and/or (c)	Nottingham Castle Sandstone	High	Minor	Minor (Not Significant)
		Lenton Sandstone	High	Minor	Minor (Not Significant)
		Magnesian Limestone	High	Minor	Minor (Not Significant)
		Mattersey Hill Marsh SSSI	High	Negligible	Negligible (not significant)

	suspended solids from the re-instatement of soils.	Daneshill LNR	Medium	Negligible	Negligible (not significant)

*Incorporating embedded environmental, design and management measures.

807. The Environment Agency has not raised an objection to the proposed development, subject to conditions relating to surface water attenuation tank details and foul sewage details. Subject to these conditions the Environment Agency is satisfied that planning permission could be granted for the proposed development as submitted.

808. The Health and Safety Executive has not objected to the proposed development. It has stated that all wells must be drilled to recognised industry standards and cased using steel and cement to ensure the risk of an unplanned leak of fluids is as low as reasonably practicable. It is highlighted that near the surface, where there is nearby groundwater or an aquifer, there are normally three layers of steel casing. The operator would conduct a range of checks on the well to test for leaks. In addition, suitable well control equipment must be provided to protect against the risk of a release of fluids from the well.

809. The Health and Safety Executive have outlined the regulatory regime for which they are responsible and under which operators have to work. This includes the Health and Safety at Work Act 1974; the Borehole Sites and Operations Regulations 1995 (BSOR); and the Offshore Installations and Wells (Design and Construction) Regulations 1996 (DCR) – which includes specific requirements for all wells, whether onshore or off. In addition, they note that an operator must appoint an independent well examiner who has an important quality control role in ensuring the well is designed, constructed, operated and abandoned to industry and company standards and that regulatory requirements have been met.

810. The HSE highlight that for operators to comply with the BSOR, information on the design and construction of the well must be submitted to them, including:

- The design of the well;
- Equipment to be used;
- Programme of work;
- Location, depth and direction of the borehole;
- Its relationship with other wells and mines;
- The geology of the drilling site; and
- Risks identified with the work and how these would be managed.

811. The HSE outline that to comply with the DCR the operator must report to the HSE every week during the construction of the well and during work to abandon the well. HSE state that this provides them with assurances that the operator is

constructing and operating the well as described in the notification, and if not they can take appropriate action. The weekly report gives details of all work that has taken place since the previous report including:

- Well integrity tests;
- The depth and diameter of the borehole;
- The depth and diameter of the well casing;
- Details of the drill fluid density which allows the inspector to gauge the pressure in the well and identify any stability issues.

812. Anglian Water is the water undertaker covering the area for the proposed development. They highlight that groundwater protection primarily falls under the remit of the HSE and the EA. Nevertheless, they have reviewed the application with specific reference to the Geology and Water Environment Chapter of the Environmental Statement. Anglian Water has noted the key potential impacts on groundwater and how these would be avoided, prevented, reduced or offset. They also note the programme of baseline monitoring and the measures to mitigate loss of potentially polluting materials. Overall, Anglian Water considers that there are sufficient safeguards to ensure that the risk of groundwater contamination is managed. It states that the strict regulatory regime, the proposed mitigation measures and monitoring activity at the well site would ensure that this proposal would not have an adverse impact.

813. The Coal Authority has considered the planning application and notes that whilst it falls within the defined coalfield, it is located outside the defined Development High Risk Area. As such, there are no recorded coal mining hazards at shallow depth affecting the site. The Coal Authority records indicate that the site falls within the licence area for past deep underground coal mining activity. They are, therefore, pleased that the applicant has considered the potential risk of this within the application and that based upon a review of available sources the applicant has been able to conclude that the drilling activities would not intersect any deep coal mine workings as there are not recorded coal mine workings under the site.

814. NCC Reclamation supports the proposed monitoring programme and recommends that this should commence prior to site works and extend during the drilling operations and beyond the restoration of the site.

815. Many of the objections received have raised concerns about potential contamination from the proposed development and the resulting impacts that this could have, including Bassetlaw District Council which has stated the potential contamination risk has not been fully explored. It has been highlighted that the site is underlain by a major sandstone aquifer which is an abstraction source for drinking and agricultural water. Representations note that the site is within a Source Protection Zone 3 and the area is categorised as ‘high vulnerability’. It is also noted that there is Source Protection Zones 1 and 2, to the east of Barnby Moor. There are concerns that if there is a well contamination incident it would result in the contamination of the aquifer. It has also been

claimed that all wells leak over time. This could result in contamination of water resources and resulting impacts on drinking water, local farming and food.

816. It has been noted by a number of parties that groundwater movement is in an easterly direction and there are concerns that this could result in contamination of Mattersey Hill Marsh SSSI, Daneshill Lakes LWS and the River Idle. There are also general concerns that the assessment work is not adequate and Nottinghamshire Wildlife Trust requests more information about where such techniques have been used without pollution incident.

817. There are concerns that contamination could go undetected for months or years and if contaminated, there is no method of decontaminating aquifers.

818. The concerns regarding groundwater contamination are noted and the MPA places great importance on its protection, noting the importance of aquifers, particularly the Nottingham Castle Sandstone, as a source for drinking and agricultural water, as well as its connectivity with ecologically designated sites. However, it must be recognised that the Environment Agency with a statutory responsibility for protecting controlled water, has not objected. In addition, the water provider for the area, Anglian Water, responsible for drinking water, has not objected. Also, Natural England, the statutory body for the protection of nationally designated sites (i.e. Mattersey Hill Marsh SSSI) has not objected. These bodies have all considered the risk to groundwater and are of the view that the measures in place to protect it are satisfactory.

819. Furthermore, an Environmental Permit has been issued by the Environment Agency and within the decision document it states:

"We consider that the use of the proposed drilling muds will comply with the groundwater activity exclusion under the EPR 2010 (paragraph 3.3(b) of Schedule 22) [Environmental Permitting (England and Wales) Regulations 2010] *in that any discharge to groundwater that may occur would be of a quantity and concentration so small as to obviate any present or future danger of deterioration in the quality of any receiving groundwater and that a permit will not be required.*

The only potential contamination source is the drilling muds. As stated above we believe this source is of a quantity and concentration so small as to obviate any present or future danger of deterioration of groundwater and when drilling through any aquifer the operator will be required to use water based muds only which will further minimise the risk of pollution.

Given this, and that the Application is for a straight forward stratigraphic investigation, it is considered that there need be no requirement for monitoring as a condition in the permit. It would be unreasonable to require the Operator to monitor groundwater and surface water for something they are unlikely to find."

820. Given the above, the MPA is satisfied that there would not be an unacceptable risk to groundwater and the potential contamination risk has been fully explored.

821. There have been some concerns about the applicant's proposed programme of monitoring. NWT and the public have raised concerns that the applicant has

highlighted the benefits of monitoring such as the early identification of potential impacts which would allow mitigation measures to be put in place. NWT state that no details of any such mitigation measures or controls are described or proposed and there is no information on the lag time of effects and how quickly any reverse of the impacts could be achieved, if at all. However, as the Environment Agency state, the mud used in drilling is of a quantity and concentration so small as to obviate any present or future danger of deterioration of groundwater.

822. Torworth Parish Council has requested that independent testing of water is undertaken from the nearest existing borehole, to create a baseline to test the other boreholes. The nearest borehole is at Jubilee Farm, approximately 0.8km from the application site. In groundwater terms the borehole is up-gradient from the proposed site, so groundwater would flow away from the Jubilee Farm borehole. In any event, testing water in a borehole 0.8km from the site would not necessarily represent the groundwater conditions at the site and, as such, it is not considered appropriate.

823. Within the Environmental Statement the applicant has stated that, in consultation with Nottinghamshire County Council and the Environment Agency, they would establish and implement a baseline monitoring programme in advance of works being undertaken at the site and the exploratory well being drilled. The applicant states that the monitoring would continue into construction, operation and decommissioning phases of the site, and the frequency and range of monitoring would be agreed with Nottinghamshire County Council and the Environment Agency and could be secured by an appropriately worded pre-development planning condition. A number of organisations have noted this proposal including Public Health England, NCC Reclamation and Anglian Water; which states that this is important for the early identification of any unforeseen impacts on groundwater from the development.

824. The applicant has suggested the use of a pre-development planning condition to secure a baseline monitoring programme, however, the MPA is of the view that such a condition would not meet the tests set out in the NPPF which requires conditions to be *inter alia* ‘necessary’ and ‘reasonable’. The MPA has come to the view that such a condition would not be necessary or reasonable due to the position of the Environment Agency in their Environmental Permit decision document; that the only potential contamination source is the drilling muds and this source is of a quantity and concentration so small as to obviate any present or future danger of deterioration of groundwater, and that it would be unreasonable to require the operator to monitor groundwater and surface water for something they are unlikely to find.

825. A number of consultation responses have also requested that the groundwater monitoring is carried out by an independent body and is made publicly available. It is also requested that monitoring is carried out at the nearest abstraction sites in the vicinity. The monitoring would be undertaken by the operator, or a company employed by the operator to undertake the task. The applicant may choose to submit the results to the Environment Agency for review, and such submissions would likely be available to the public. Monitoring at the abstraction

sites has not been deemed necessary by the Environment Agency or Anglian Water.

826. Representations have raised concerns about the proposed Pressure Determination Test (PDT), and confirmation has been sought that this process would use fresh water only. The applicant confirms in the planning application that the PDT involves fresh water totalling approximately $3m^3$.

827. NWT notes that the Environmental Statement assesses groundwater in relation to the Nottingham Castle Sandstone as base flows for the River Idle, but the potential impacts of the proposed development do not appear to have been specifically assessed for the River Idle. As catchment hosts for the Idle, NWT are therefore not satisfied that an adequate Water Framework Directive (WFD) assessment has been undertaken.

828. NWT accept the risk of pollution to surface waters in the immediate area is low. As such, the only contamination pathway to the River Idle is via groundwater. Given that the applicant has assessed the significance of effect on the Nottingham Castle Sandstone (base flow for the River Idle) as Minor (not significant) the effect from the proposed development would not, realistically be any different. However, the applicant has also included in their assessment surface watercourses (as set out in the preceding section of this report) and the significance of effect is negligible (not significant).

829. A number of consultation responses have referenced the EU Water Framework Directive (WFD) and stated that the proposed development is not in accordance with its requirements. However, the applicant has undertaken an assessment of the Water Framework Directive classification of key waterbodies within the catchment of the proposed exploratory well. The significance of effect on all receptors is minor or negligible. Furthermore, the Environment Agency in issuing its Environmental Permit notes that they are required to implement the EU Water Framework Directive and ensure that all relevant quality standards are met. The Environment Agency confirms that they have had regard to these and they are satisfied that the imposition of conditions on the permit would operate in a way which protects the environment and human health.

830. As set out in the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 there is a duty on public bodies (such as NCC) to have regard to river basin management plans and supplementary plans in exercising their functions so far as affecting a river basin district. The proposed development falls in the area covered by the 'Humber river basin district river basin management plan' which was updated in December 2015. The document sets out the current state of the water environment; pressures affecting the water environment; environmental objectives for protecting and improving the waters; programme of measures, and actions needed to achieve the objectives; and progress since the 2009 plan. The Water Framework Directive environmental objectives are set out in Section 2.2 of the river basin management plan as:

- To prevent deterioration of the status of surface waters and groundwater;
- To achieve objectives and standards for protected areas;

- To achieve good status for all water bodies or, for heavily modified water bodies and artificial water bodies, good ecological potential and good surface water chemical status;

- To reverse any significant and sustained upwards trend in pollutant concentrations in groundwater;

- The cessation of discharges, emissions and losses of priority hazardous substances into surface waters;

- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants.

831. The plan also contains more specific ecological objectives for example relating to the specific ecological or chemical status of surface water bodies and the deadlines by which these should be achieved.

832. Within the river basin district there are catchment partnerships to encourage local action to protect and enhance the water environment. The proposed development is located in the Idle and Torne catchment, with the Idle catchment partnership led by Nottinghamshire Wildlife Trust and the Torne catchment partnership led by Yorkshire Wildlife Trust. Within this catchment the priority river basin management issues are identified as: rural diffuse pollution; urban point source and diffuse pollution; and hydro-morphological issues relating to land drainage. The River Basin Management Plan identifies that the contribution to environmental outcomes for 2021 that the two partnerships have made include:

a) projects on Rainworth Water and the Rivers Meden and Ryton to reduce phosphate and triclosan. It will also create Biodiversity Action Plan priority riparian habitats to improve ecological status;

b) engagement, monitoring and Sites of Special Scientific Interest (SSSI) re-wetting interventions on tenanted farms in Sandall Beat Park and the Sandbeck Estate. Wetland and riparian habitat will also be created and restored through bank stabilisation;

c) Clumber Lake scoping and a silt survey and modelling on the lower River Idle.

833. In addition, future aims have been identified and, depending on funding levels, include: works at Keadby Pumping Station, Hatfield Chase Ditches and Mill Dam; the employment of a full time catchment officer; tackling large-scale historical issues relating to heavy metal pollution; selective de-silting of the River Idle and implementation of the River Idle Washlands SSSI water level management plan.

834. Having considered the hydrological and hydrogeological impacts of the proposed development, the MPA has come to the conclusion that there would not be a conflict with the objectives for protecting and improving the waters and with the programme of measures and actions needed to achieve the objectives set out in the river basin management plan. Furthermore the development

would not have a material impact on the Idle and Torne Catchment partners' contribution to environmental outcomes for 2021, or their future aims (as outlined above). The MPA has therefore had regard to the river basin management plan in line with the requirements of the Water Framework Directive.

835. There have been many consultation responses objecting because the applicant has not undertaken 3D seismic surveys to inform their proposed exploration. There is no planning requirement for operators to undertake such surveys, indeed, the Planning Practice Guidance specifically states that "it is a matter for individual operators to determine how much preliminary data is necessary before undertaking exploratory drilling" (Paragraph 096 Reference ID: 27-096-20140306).

836. In relation to the concern about the applicant having not undertaken any 3D seismic surveys, a number of organisations and individual representations have raised concerns about old coal mine workings in the area. It is highlighted that there are a number of historic coal mines in the locality and earth tremors have been felt as well as sink holes appearing in nearby villages. There is concern that the drilling and subsequent PDT could result in old mine workings collapsing causing subsidence and sink holes. It is suggested that more assessment should be undertaken in this regard (e.g. a 3D seismic survey). Bassetlaw Against Fracking suggest that there may be unmapped coal workings in the area (based on anecdotal evidence from former mine workers). There is concern about damage to the geological structures and that there may be unknown faults present. It is also suggested that there should be a pre-drilling survey of properties so that if subsidence occurs that results in damage, repair can be undertaken.

837. The location, depth and direction of the borehole and the geological conditions and proximity to other boreholes and mines would be assessed by the HSE, as set out above. The mitigation of seismic risks is undertaken through the licensing consent regime, for which the OGA is responsible and this includes a seismic assessment of the geology of the area to establish geological conditions, risk of seismic activity and mitigation measures to be put in place. However, in general, seismic activity is not a risk that is normally associated with exploratory works and no concerns have been raised in the consultation responses from the HSE and the Coal Authority. In light of this, a pre-drilling condition survey of buildings is not appropriate.

838. Friends of the Earth have noted that the Coal Authority only state that they are not aware of any workings within 20 metres of the site and FoE consider that their records could be incomplete. However, it should be noted that the applicant has assessed underground coal mining risk and concluded that drilling would not intersect old mine workings. The Coal Authority has reviewed this information and raised no concerns.

839. A request has been made that mining maps are made available to the public. Such maps do not form part of the planning application. However, the relevant bodies have been satisfied with the information that has been submitted.

840. Concerns have been raised in relation to the PDT and that there may be a significant amount of flow-back water containing radioactive material, heavy metals and carcinogenic hydrocarbons, and such materials could migrate along fault lines. The PDT would involve injection of some 3 cubic metres of water at a 'low rate' for a short duration (estimated to be one to two hours) to create a 'pressure pulse'. Down-hole memory gauges would be left in place for up to 20 days to record data and are then retrieved and analysed. The applicant has clarified that the purpose of the PDT is not to stimulate gas flow, but to test the strength of the rock and observe the downhole formation pressure. There would not be a significant amount of flow-back fluid and no radioactive substance permit is required, as confirmed in the Environment Permit decision document. Given that such a small quantity of water is to be used and the purpose is not to stimulate gas flow the possibility of radioactive material migrating along fault lines is not considered significant.

841. A consultation response questions, in relation to the PTD, what a 'low rate' is in terms of water injection. Indeed, this is something not specifically outlined in the application. In any event, the specifics of such an operation would be controlled by the HSE, and the MPA would not seek to control such details.

Policy

842. Policy M3.8 of the Nottinghamshire MLP seeks to ensure that minerals development will only be granted permission where there are no risks to ground water, unless engineering measures and/or operational management systems can adequately mitigate such risks. Policy DM2 of the emerging Nottinghamshire MLP also seeks to ensure that there are no risks of polluting ground water. In light of the above assessment, the proposed development is considered to be in accordance with both these policies.

843. The NPPF provides further guidance on pollution in Chapter 11: Conserving and Enhancing the Natural Environment. Paragraph 120 states that to prevent unacceptable risks from pollution, planning decisions should ensure that new development is appropriate for its location and that the effects of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution should be taken into account.

844. Paragraph 121 of the NPPF states planning decisions should also ensure that the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation. Also that adequate site investigation information, prepared by a competent person, is presented.

845. In considering the proposed development against the requirements of the NPPF the MPA is satisfied that from a geological and hydrogeological perspective the proposed development is appropriate for its location and that there would not be unacceptable impacts on health, the natural environment or general amenity. The MPA is satisfied that there are no ground conditions or land instability, from natural hazards or former activities such as mining or pollution arising from previous uses which would make the site unsuitable for development. As such,

from a geological and hydrogeological perspective the development is in line with Paragraphs 120 and 121 of the NPPF.

846. In coming to the above conclusion the MPA has engaged with other regulatory bodies involved in shale gas exploration including the HSE, the Environment Agency and the Coal Authority. None of these have raised an objection to the proposed development and it is recognised that the Environment Agency has granted a mining waste permit for the proposed development. Nottinghamshire County Council assumes that these regimes will operate effectively and this position is in line with the guidance set out in Paragraph 122 of the NPPF.

847. In summary, there are considerable concerns raised by the public and certain local and interest groups about the geological and hydrogeological impact, particularly in relation to contamination. Many of the concerns raised relate to matters which are controlled and assessed outside of the planning process and are the responsibility of other bodies (e.g. Environment Agency or HSE). Nevertheless, the MPA has consulted with the bodies, no objections have been received and the MPA is required to work on the basis that other regulatory regimes will operate effectively. In light of this, the proposed development is in accordance with Policy M3.8 of the Nottinghamshire MLP, Policy DM2 of the emerging Nottinghamshire MLP Submission Draft and Paragraphs 120-122 of the NPPF.

<u>Contamination</u>

848. The applicant has reviewed historic maps of the application site between 1885 and 1961 which do not show any development at the site. The applicant has also undertaken a walkover survey of the site and confirmed that the site is undeveloped and is used for arable farming.

849. A former Ministry of Defence facility has been considered in the review of the site history as this was highlighted to the applicant at the scoping stage. The applicant has acknowledged this and noted that the former MOD site is 1.8km from the application site.

850. Overall, the applicant states that as the site has not been previously developed and noting the distance from the site to areas of historic and current development, it is considered very unlikely that any existing ground or groundwater pollution is present at the site.

851. NCC Reclamations raise no objection to the proposed development. However, it does recommend that in constructing the site baseline conditions should be recorded in a validation report (to include chemical composition of ground conditions) to ensure that upon restoration the site is contamination free.

852. It is noted that the consultation response from Bassetlaw District Council states that the potential contamination risk has not been fully explored. In addition, public consultation responses have stated that there would be soil pollution. However, the advice from the Bassetlaw Environmental Health Officer raises no concerns in relation to pollution prevention and control, or contaminated land.

853. In considering the condition of the land and the potential for existing contamination, the MPA agrees with the applicant's statement that there is unlikely to be any existing ground or groundwater pollution present at the site. It is considered that the proposed site management and operational measures alongside the impermeably lined and bunded design of the wellpad, is suitable to ensure that there would not be an unacceptable risk of contamination from the proposed development.

854. Objections have been made about the transportation of chemicals, waste and potentially contaminated water to and from the site. It has been highlighted that HGVs carrying such materials would pass the Primary School of St Mary and St Martin. There are concerns that spillages could occur. With regard to spillage, the transportation of waste is tightly regulated and all businesses that collect and transport waste are required to have a waste carrier licence. This is regulated by the Environment Agency and, in line with the NPPF, the MPA should assume that such a regime will operate effectively.

855. With regard to ground contamination and planning policies, Policy M3.8 of the Nottinghamshire MLP and Policy DM2 of the emerging MLP apply to the proposed development in that they seek to protect ground and surface waters. As discussed in the hydrology and hydrogeology sections of this report, with the appropriate mitigation measures in place, the proposed development would not have an unacceptable impact on ground and surface waters and these measures would also protect and prevent the contamination of soils. The development is therefore in accordance with these policies.

856. In addition, Paragraphs 120 and 121 of the NPPF seek to prevent unacceptable risks from pollution to ensure that development is appropriate for its location. Planning decisions should also take account of ground conditions including pollution arising from previous uses and any proposals for mitigation. In this respect there is no evidence of former uses of the site. Nevertheless, it is recommended that a condition is used to ensure that soil sampling is undertaken prior to development and during restoration to ensure that the site is uncontaminated upon restoration. In addition, it is recommended that a condition is used to ensure that works cease and further investigation is undertaken in the event that unexpected contamination is discovered. These measures are in accordance with the NPPF. Notwithstanding this, the NPPF does state that where a site is affected by contamination, responsibility for securing a safe development rests with the developer and/or landowner.

Air Quality

857. The applicant has undertaken an Air Quality Assessment to support the planning application. The assessment has considered potential construction dust, road vehicle emissions and combustion emissions from onsite power generation plant.

858. The most recent Bassetlaw District Council air quality report is the 2015 Updating and Screening Assessment report. Bassetlaw District Council has no Air Quality Management Areas within their administrative area.

859. With regard to dust the applicant has identified potentially dust generating activities as:

- Site construction phase – stripping and storage of soils and formation bunds; material import and export; temporary stockpiling of materials; excavation of wellhead cellar, drains and creation of wellsite platform with a layer of aggregate hardstanding; landscaping works; construction of new on-site facilities; and associated vehicle movements.

- Drilling phase – internal vehicle movements;

- Evaluation phase – vehicle movements associated with removal of above ground equipment;

- Decommissioning and restoration phase – removal of hardstanding; restoration, including reinstatement of soils and subsequent seeding and planting; and removal of infrastructure and welfare facilities.

860. The applicant notes that the Institute of Air Quality Management (IAQM) guidance on dust assessments states that an assessment is required where:

- There is a human receptor within 350m of the site; or

- There is a human receptor within 50m of the access routes (up to 500m from the site entrance);

- There is an ecological receptor within 50m of the site; or

- An ecological receptor within 50m of the access routes (up to 500m from the site entrance).

861. The only threshold that has been triggered is in relation to ecological receptors where the Tinker Lane LWS is within 50m of the site access route (approximately 250m from the site). As such, the applicant has undertaken a dust assessment, the results of which are set out in the table below:

Table 25 - Risk of dust impact

Activity	Dust soiling	Human health – PM_{10}	Ecological
Earthworks	Low	Low	Low
Construction	Negligible	Negligible	Negligible
Track out	Low	Low	Low
Demolition	Low	Low	Low

862. The applicant concludes that given the large standoff distances to receptors the risk of impact during construction, drilling, evaluation and decommissioning is considered to be low. Nevertheless, they propose a series of mitigation measures in accordance with best practice, as set out in the table below.

Table 26 - Dust mitigation measures

Activity	Dust control measure
General measures	Develop and implement a stakeholder communication plan that includes community engagements before work commences onsite.
	Display the name and contact details of person(s) accountable for air quality

	and dust issues on the site boundary and head office contact details.
	Undertake regular site inspections to monitor dust. Record all complaints and exceptional incidents and take appropriate action to minimise emissions.
	Record all dust and air quality complaints, identify causes and take appropriate measures. Make the complaints log available to the local authority.
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
	Spillages should be cleaned as soon as possible and are not allowed to dry out.
Earthworks	Stabilise screening bund as soon as practicable; by profiling and seeding.
	Locate stockpiles taking into account the direction of prevailing wind from the south west.
	Minimise drop heights.
	Avoid removal of topsoil and subsoil during adverse weather conditions.
Construction	Ensure sand and other aggregates are stored in bunded areas and not allowed to dry out where possible.
	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
	Only use cutting, grinding or sawing equipment in conjunction with dust suppression techniques such as water sprays or local extraction.
Demolition / Decommissioning	Ensure effective water suppression is used during demolition operations.
Track out	All vehicles to switch off engines; no idling vehicles.
	Ensure adequate water supply for effective dust mitigation.
	Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transporting loads.
	Access, local roads and haul road to be cleaned using water assisted dust sweeper or similar.
	Minimise movement of traffic around site where possible.
	Fixed speed limits around the site of 15mph.
	Inspect hardstanding for integrity and instigate necessary repairs to the surface as soon as reasonably practicable and record in site log book.

863. The ‘Air Quality Strategy for England, Scotland, Wales and Northern Ireland’ (AQS) 2007 contains air quality objectives based on the protection of both human health and vegetation. The AQS objectives used in the applicant’s assessment are shown in the table below.

Table 27 - Air quality strategy objectives

Pollutant	Standard	Measured as	Equivalent percentile
Nitrogen dioxide (NO^2)	40 µg/m^3	Annual mean	-
	200 µg/m^3	1 hour mean	99.79th percentile of 1-hour means (equivalent to 18 1-hour exceedances)
Particulate matter with an aerodynamic diameter of less than 10µm (PM_{10}) (gravimetric)	40 µg/m^3	Annual mean	-
	50 µg/m^3	24 hour mean	90.41st percentile of 24-hour means (equivalent to 35, 24 hour exceedances)
Particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$)	25 µg/m^3	Annual mean (target data 2020)	-

(gravimetric)			
Carbon Monoxide (CO)	10,000 µg/m^3	Maximum daily running 8-hour mean	-
Benzene (as surrogate for unburnt hydrocarbons)	5 µg/m^3	Annual mean	Annual mean

864. With regard to traffic emissions the applicant has considered a total of 15 receptors along the proposed traffic route. In relation to emissions from the site the applicant has identified 17 sensitive receptor locations.

865. The predicted annual mean NO_2 contributions resulting from traffic emissions would range between a <1% change to a 1.23% change as a percentage of the Air Quality Objective (AQO). Emissions levels would remain within the AQO levels (40 µg/m^3) at all receptor locations identified, with the highest level predicted being 31.47 µg/m^3. Furthermore, the applicant identifies that modelling is based on a worst case scenario where the maximum number of vehicles occurs throughout the year and would be 100% spilt north and south in Blyth. This would not be the case and levels would actually be lower.

866. With regard to hourly NO_2 the applicant highlights guidance which states that exceedance of the NO_2 1-hour mean is unlikely to occur where the annual mean is below 60 µg/m^3. Given the highest concentration is 31.47 µg/m^3 the short term AQO is highly unlikely to be exceeded.

867. The predicted annual mean $PM_{2.5}$ contributions resulting from traffic emissions would range between a 0.02% to a 0.08% change as a percentage of the Air Quality Objective (AQO). Emissions levels would remain within the AQO levels (25 µg/m^3) at all receptor locations identified, with the highest level predicted being 10.9 µg/m^3. As such, there would be no exceedance of $PM_{2.5}$ AQO at any receptor as a result of traffic emissions.

868. In considering PM_{10} concentration the applicant states that there would be an increase of 0.02 µg/m^3, which when combined with background levels would result in a concentration of 17.3 µg/m^3. Overall, the applicant assessed the development as being unlikely to approach 35 days at or above 50 µg/m^3 which is the 24 hour PM_{10} AQO.

869. The applicant states that the unmitigated impact of combustion emissions from the onsite power generation plant would not exceed AQOs at the receptor locations, however, in order to reduce the impacts, particularly of NOx and NO_2, the operators have identified additional abatement measures. The abatement would reduce NOx emissions by 80% and as a consequence reduce PM_{10} by 40%, Carbon Monoxide (CO) emissions by 90% and unburnt hydrocarbon emissions by 70%. In light of the mitigation the site based emissions are set out below.

870. The predicted mitigated 1-hour average NO_2 contributions resulting from site operations would range between 4.29 and 17.24 µg/m^3. Emissions levels would remain within the AQO levels (200 µg/m^3) at all receptor locations identified, with the highest predicted being 38.23 µg/m^3. As such, there would not be an

exceedance of the 1-hour average NO_2 concentrations resulting from site operations.

871. The predicted mitigated annual NO_2 contributions resulting from site operations would range between 0.10 and 1.33 $\mu g/m^3$ at the sensitive receptors. Emissions levels would remain within the AQO levels (40 $\mu g/m^3$) at all receptors with the highest predicted level being 11.82 $\mu g/m^3$. As such, there would not be an exceedance of the annual NO_2 concentrations resulting from site operations.

872. The predicted mitigated 24 hour PM_{10} contribution resulting from the site operations would range between 0.02 and 0.11 $\mu g/m^3$ at the sensitive receptors. Emissions levels would remain within the AQO levels (50 $\mu g/m^3$) at all receptors with the highest predicted concentration reaching 23.21 $\mu g/m^3$. As such, there would not be an exceedance of the 24 hour PM_{10} concentrations resulting from site operations.

873. The predicted mitigated annual $PM_{2.5}$ contribution resulting from the site operations would range between 0.00 and 0.06 $\mu g/m^3$ at the sensitive receptors. Emissions levels would remain within the AQO levels (25 $\mu g/m^3$) at all receptors with the highest predicted concentration reaching 9.91 $\mu g/m^3$. As such, there would not be an exceedance of the annual $PM_{2.5}$ concentrations resulting from site operations.

874. The predicted mitigated 8 hour CO contribution resulting from the site operations would range between 1.31 $\mu g/m^3$ at the sensitive receptors. Emissions levels would be <0.1% of the AQO at all receptors.

875. The predicted mitigated annual benzene contribution resulting from the site operations would range between 0.00 and 0.01 $\mu g/m^3$ at all sensitive receptors. As a percentage of the AQO the highest contribution would be 0.2%.

876. With regard to combined impacts, the applicant has predicted mitigated annual NO_2 contributions from site traffic and onsite generation, which would range between 0.23 and 0.65 $\mu g/m^3$. Emissions levels would remain within the AQO levels (40 $\mu g/m^3$) at all receptors with the highest predicted concentration reaching 11.20 $\mu g/m^3$. As such, there would not be an exceedance of the annual PM_{10} concentrations resulting from the combination of traffic and site operations.

877. The applicant has also predicted the combined impact of annual $PM_{2.5}$ contributions from site traffic and onsite generation, which would range between 0.01 and 0.03 $\mu g/m^3$. Emissions levels would remain within the AQO levels (25 $\mu g/m^3$) at all receptors with the highest predicted concentration reaching 9.95 $\mu g/m^3$. As such, there would not be an exceedance of the annual $PM_{2.5}$ concentrations resulting from traffic and site operations.

878. In conclusion, the applicant states that the emissions of pollutants would result in NO_2 concentrations at two receptors in the centre of Blyth receiving impacts classed as ‘negligible’ or ‘slight adverse’. The predicted impacts of plant onsite did not result in any exceedance of the relevant AQO at sensitive receptor properties. In addition, there would be no significant effects from emissions from onsite power generation and road vehicles. Moreover, the applicant has over-predicted emissions, basing assessments on a full year. The period of drilling,

with associated worst case vehicle movements, would be for significantly less than this and, as a result, emissions would be lower than those predicted.

879. The Bassetlaw Environment Health Officer has raised no objections in relation to air quality.

880. It is noted that the Environment Agency has also confirmed that it has not reviewed the air quality assessment as part of the planning process but it states that it will be assessed as part of the Environmental Permitting process. Within the Environmental Permit decision document the Environment Agency states:

"*We carefully considered emissions to air during the determination of the application, as the site is not located in an Air Quality Management Area (AQMA) and the proposed operational activities are not expected to impact on the air quality we are satisfied that these measures to minimise the risk of fugitive emissions, together with condition 3.1 provide acceptable controls*".

881. Condition 3.1 of the Environmental Permit states that there shall be no point source emissions to water, air or land. Notwithstanding this, the EA do state that the largest source of emissions would be from vehicles and generators that are not covered by the Environmental Permit.

882. Public Health England has reviewed the planning application and note that the applicant has considered the potential air quality impact on nearby residential sensitive receptors using AERMOD dispersion modelling software. The potential combined effects of combustion emissions from both the mitigated onsite power generation plant and road vehicles has been assessed for receptors affected by both air emission sources. PHE acknowledges the that the drilling phase is predicted to run for 4 months and therefore the actual impacts would be lower than the 12-month predicted values. PHE also notes that modelling for the onsite power generation plant emissions predicted no significant long term nitrogen dioxide (NO_2) impacts, while short-term levels at the two closest receptor locations were at a maximum of 30.2% and 43.1% of the hourly Air Quality Objective, based upon a one-year modelling period, while the actual drilling phase would be 4 months. The modelling concludes that the emissions are within air quality standards protective of health at the nearby residential receptors.

883. Concerns about emissions have been raised by groups and in individual representations stating that there would be air pollution from operations on the site including the drilling and associated equipment, from vehicles travelling to and from the site, and leakage from the well. Concern has been raised in relation to the following emissions: ozone, particulates, volatile organic compounds, hydrocarbons, radon, nitrogen dioxide and the venting and flaring of methane. It has been claimed that these would impact on public health, wildlife and farming, and air quality standards would be breached. These concerns are noted, however, the applicant has assessed relevant air quality standards and the development would not breach these at assessed sensitive receptors. With regard to fugitive emissions such as methane the Environment Agency notes in their decision document for the Environmental Permit that there would be monitoring and abatement measures, including mud weight and a blow-out preventer and they are satisfied that these measures would minimise

the risk of fugitive emissions. There would be no venting or flaring of methane as part of the proposed development.

884. Concerns have been raised about the risk of odours from fugitive gas emissions. As set out above there are a series of measures in place, controlled under the Environmental Permit, to reduce the risk of fugitive emissions. The Environment Agency has not considered odour to be a particular concern in their Environmental Permit decision document, but they have included a condition in the permit which enables them to require the operator to submit a specific odour management plan, in the event that odour becomes a problem.

885. It has been stated that air quality has been inadequately assessed, with concern raised in representations that the manipulation and falsification of true fuel economy figures by vehicle manufacturers puts a level of doubt over emissions data used in the applicant's assessment. Even if vehicle emissions data for individual vehicles was above that which has been modelled, the models assess peak vehicle movements for a full year. However, vehicle movements (36 HGVs and 20 light vehicles) would occur for a maximum of 7 weeks in any year and the average would be no higher than an average of 36 daily movements (16 HGV and 20 light vehicles) in at any other period. No concerns in this regard have been raised by the Bassetlaw Environmental Health Officer or Public Health England.

886. It has been suggested in consultation responses that the short term nature of the application should not be used to diminish the emissions impact. Modelling has been based on full year impacts, however, in reality drilling would only take place for up to 4 months and peak traffic movements would occur for no more than 7 weeks during construction and again during restoration. As such, it is entirely reasonable to accept that actual emissions are likely to be lower than those modelled. In any event, the modelled emissions are within acceptable limits.

887. With regard to emissions and impacts on public health it is stated that the effects of air pollution are greater in children than adults and there is concern for children attending local schools. The applicant has assessed emission levels against national air quality standard measures, which are set for the whole population, not just adults. The assessments demonstrate that these Air Quality Objectives would not be exceeded.

888. There are concerns about emissions impacts on wildlife. This is assessed in detail in the ecology section of this report, however, in short there would not be an unacceptable impact at any designated ecological site.

889. Public representations have been made stating that there would be an air quality impact on farming. It is recognised that the development is surrounded by arable agriculture. It is possible that there could be some short-term impacts in the immediate surroundings, although these have not been assessed and the MPA is not aware of any air quality standards applicable to arable crops. Notwithstanding this, given that the emissions from the development would not have an unacceptable impact on a designated site (Tinker Lane LWS) located circa 250m away, the impact on farming beyond the immediate area is unlikely to be significant. Furthermore, any impacts would be short term.

890. There are a number of concerns about dust arising from on-site operations and the movement of HGVs. In line with this there have been a number of suggestions made in representations that a water bowser should be available to dampen down the site as and when necessary and that vehicles should be sheeted. The MPA considers it unlikely for a significant impact to occur at residential or ecological receptors and the measures that the applicant has set out to reduce and mitigate dust impact would be incorporated in a condition. This includes, among a number of measures, the use of water suppression and covering vehicles.

891. A number of parties have requested that, if planning permission is granted, there should be the continuous monitoring of air quality levels during and after development. The applicant has modelled the emissions impact at a range of receptors and the predicted concentrations are substantially below the Air Quality Objectives, even when based on worst case operating scenarios that would not take place. In light of this, securing air quality monitoring by condition would not pass the tests of reasonableness for attaching planning conditions, as set out in the NPPF.

892. The potential for cumulative air quality impacts has been raised and specific reference has been made to the A1, Robin Hood Airport and the Finningley and Rossington Regeneration Route (FARRS). Any emissions from the A1 and Robin Hood Airport will have been included in baseline air quality levels and there would not, therefore, be any additional cumulative impact. With regard to FARRS, it opened on 29th February 2016, so the baseline data is unlikely to have factored it in. However, at approximately 13.5km from the application site it is considered unlikely to have a significant cumulative impact.

893. Policy M3.7 of the Nottinghamshire MLP states that planning permission for minerals development will only be granted where dust generation will not lead to an unacceptable impact. It is the view of the MPA that the potential for any significant levels of dust would be limited to the construction and restoration phases of the development and this can be suitably controlled through the imposition of the dust measures outlined in the Environmental Statement. This can be controlled by condition and would be in accordance with Paragraph 144 of the NPPF.

894. The proposed development would not create, or exacerbate existing, air quality issues. As such the development is in accordance with the relevant section of Policy DM3 of the BCS.

895. The emissions from the proposed development and associated vehicle movements would be within acceptable levels. As such, the development is in accordance with Policy DM1 of the emerging new Nottinghamshire MLP.

896. Air quality impact on designated ecological sites has been considered in the ecology section of this report above.

<u>Lighting</u>

897. The proposed development would require lighting associated with the development for health and safety, security and 24 hour working requirements.

898. Working hours for the construction, evaluation and decommissioning and restoration phases would be 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. There would be no working on Sundays or Bank Holidays. Phase 2 (drilling) works would be undertaken 7 days per week, 24 hours per day and therefore lighting would be in continuous use during the hours of darkness.

899. The applicant has provided an indicative lighting design (see Plan 13) based on the selection of the Boldon 92 drilling rig, the tallest rig at circa 60m in height. However, the final selection of lighting and positioning would be determined by drill rig selection. The lighting that is proposed for use includes the following:

- Horizontal CEAG 2 x 36w fluorescent strip lights (350 lumens);
- Victor titan lights mounted on rig;
- Security lighting with PIR mounted on cabins;
- Bollard light with light direct downwards;
- Freestanding 3 metre high fluorescent lighting facing inwards on site and pointing downwards 500w;
- Pole mounted LED lighting, downwards facing, height approximately 5m;
- Low intensity aviation light.

900. The applicant has plotted the Lux lighting spill associated with the indicative lighting on the Bolden 92 drilling rig. This shows that lighting at the boundary of the application site would be up to 1.0 lux and for the most part would be <0.5 lux.

901. With regard to sky glow the light spill assessment states that when all luminaires are on at full intensity the post-curfew (23:00-07:00) levels are expected to be exceeded. However, based on the distances to residential receptors this is unlikely to cause an issue to local residents.

902. Within the Landscape and Visual Impact Assessment the applicant notes that the lux levels at the site would meet the requirements of an existing rural / low district brightness situation (based on the criteria set out in the Institute of Lighting Professionals: Guidance Notes for Reduction of Obtrusive Lighting GN01:2011). The LVIA states that this is mainly due to the use of 2.5m hording around the perimeter of the site. It is also noted that the linear luminaires on the rig may contribute to sky glow although this is not deemed to result in potentially significant landscape and visual effects due to their temporary and short term nature. For nearby properties the illuminance values would present no issues to residents due to the distance from the site.

903. No concerns relating to lighting have been raised by the Bassetlaw Environmental Health Officer or NCC Landscape.

904. A number of representations have been received objecting to the proposed development on the basis that it would have an unacceptable light impact. It is stated that light from the development during darkness would be intrusive and disturbing to residents, businesses (including a cattery) and wildlife, and would be prominent across the landscape.

905. The light spill assessment and lux contour plots demonstrate that there would not be unacceptable or intrusive light impact on residential properties or businesses. It is noted, however, that the development would result in post-curfew (23:00-07:00) sky-glow exceedance and the development, specifically the drill rig, would be a visible lit feature at night time. Whilst there is some harm attributed to this, the most significant light generating element of development would be present for up four months. The temporary nature of the drilling element of the development leads the MPA to conclude that the sky glow light impact of the development would not be significant.

906. The impact of light on wildlife has been assessed in the ecology section of this report, however, in short there would not be an unacceptable impact.

907. Policy M3.3 of the Nottinghamshire MLP states that planning permission for minerals development will only be granted where any adverse visual impact can be kept to an acceptable level. Measures should be taken to avoid unacceptable light intrusion caused by extraneous light from the development. In addition, Paragraph 125 of the NPPF states that by encouraging good design, planning decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation. In light of the above assessment, the MPA considers the light levels from the proposed development would not result in significant harm, although some visual impact is acknowledged. However, in the knowledge that a detailed lighting design would vary depending on the rig to be selected it is recommended that a condition is used to secure a detailed lighting scheme which ensures that lighting at the nearest sensitive receptors accords with the relevant criteria set out in the ILP Guidance, and that the 0.5 lux contour does not exceed that set out in the applicant's assessment.

908. Part B) v. of Policy DM3 of the Bassetlaw Core Strategy seeks to ensure that development does not create or exacerbate existing environmental or highway safety problems. As set out above, whilst there would be a degree of visual impact there would not be unacceptable harm.

909. The light spill from the proposed development would be within acceptable levels and the potential adverse impact on amenity would be adequately mitigated. As such, the development is in accordance with Policy DM11 of the emerging Nottinghamshire MLP.

Public Rights of Way

910. The nearest public rights of way are the Torworth Byway Open to All Traffic (BOAT) which is located approximately 450m to the north and the Barnby Moor Bridleway 1 located approximately 625m to the south. Given the distance from the proposed development site there would be no direct impacts on any public rights of way.

911. The NCC Countryside Access Team has provided a consultation response and report that the proposed development would not affect any public rights of way.

912. The applicant has undertaken a landscape and visual impact assessment. The assessment has considered the impact from a total of 11 viewpoints. Viewpoints 1, 3, 7, 8 and 11 are located at rights of way. The applicant has assessed that there would be no more than moderate effects at these viewpoints.

913. The Landscape and Visual Impact Assessment, which includes viewpoints from public rights of way, has been considered by NCC Landscape. Overall, they conclude that on balance, due largely to the temporary nature of the development the application is acceptable with regard to landscape character and visual impact.

914. Given that the proposed development would have no direct impact on public rights of way Policy M3.26 of the Nottinghamshire MLP does not apply.

915. Policy DM13 of the BCS relates to sustainable transport and expects development proposals to provide linkages or develop new footways, cycle paths and bridleways. Given the nature of the proposed development the application of these requirements would not be appropriate.

916. Paragraph 75 of the NPPF states that planning policies should protect and enhance public rights of way and access. Policy DM7 of the emerging MLP supports proposals where it can be demonstrated that there would not be an unacceptable impact on the existing rights of way network. There would be no direct impact on any rights of way. There would be a moderate visual impact, however, such impacts would be temporary and are not considered to be unacceptable.

Socio-Economic Impacts

917. Within the Environmental Statement the applicant has included a brief section on the economy and employment. The applicant notes that there is a history of oil and coal bed methane production in the County so the exploitation of the County's oil and gas resources is not a new feature of the local economy and local expertise in goods, services and employment is likely to exist. The applicant highlights that, as a subsidiary of a British onshore oil and gas explorer and developer, they already extract oil and gas from within Nottinghamshire at the Gainsborough/Beckingham oil field.

918. The applicant notes that the development would be short term and temporary in nature and would not generate significant levels of employment over a long period. However, they consider that greater knowledge of the potential of the local geology to produce shale gas could lead to significant longer term economic benefits for both the local area and the nation.

919. Overall, the applicant predicts a small beneficial effect on the local economy as a result of jobs, use of local supplies and investment that would be provided by the proposed development. However, the applicant highlights the potential for significant longer term beneficial impacts for the local and national economy

from the development that may result from the data that can be obtained from the proposed development.

920. There would be a level of job creation associated with the proposed development. The applicant has indicated that this would be in the region of 25-30 employees.

921. It has been claimed in consultation responses that the proposed development would have an adverse impact on businesses. These concerns are noted, however, the operations associated with the proposed development and the impacts that have been assessed (e.g. noise, traffic, contamination, visual impact and emissions) are not considered to result in any unacceptable impacts on local business operations.

922. There are concerns regarding the industrialisation of a rural area. Objections are also raised on the basis that the proposal would reduce visitors to the area and therefore impact tourism and leisure activities. It is noted that the area has historic value in its links to the Pilgrim Fathers and there is tourism potential with this link which would be adversely affected by the proposed development. The proposed development site is not a tourist attraction and would therefore have no direct impact on tourism. From a visual perspective there would be temporary impacts on the surrounding area, including the rights of way network. This impact would be moderate adverse at worst. Such impacts would be temporary. Whilst it is not possible to quantify the impact that this proposal may have on tourism the area is not widely regarded as a tourism destination and the overall impact is judged not to be significant.

923. Specific concern has been raised by a number of parties about the longer term economic impacts which may stem from this development (such as future boreholes or fracking) and there is objection to the industrialisation of the countryside, which would have a net negative effect on the local economy. It is also suggested that if weight is given to the longer term potential benefits of fracking (such as energy supply and production), then the longer term impacts of fracking should also be considered. The MPA has assessed this application on the merits of this application alone and no weight is given to future development which may, or may not, occur.

924. Objections have referred to the DEFRA report “Draft Shale Gas Rural Economy Impacts Paper” and the reduction in visitors and tourists and associated local economy impacts. The paper summarises the economic impacts of shale gas on rural communities as likely to be positive for jobs, services and energy, and broadly neutral for tourism. With regard to the social impacts of shale gas on rural communities the paper summarises a negative but localised impact of congestion and housing impacts and a broadly neutral impact on services. However, the paper is at a high level and does not consider specific impacts associated with this particular development. Furthermore, a covering note issued with the release of the paper states that the paper “*is an early draft of an internal document; is not analytically robust. Work on it has since been discontinued*”. Little weight is attached to the paper.

925. Concern is raised that the proposed development would affect property values. This is not a material consideration.

926. It has also been suggested that some residents may withhold council tax if property value is lost as a result of the development. The threat of withheld council tax is not a material consideration and any failure to pay council tax would be dealt with under the appropriate procedures.

927. The issue of blight has been raised and there is concern that properties would become difficult to sell as a result of the development. Planning is concerned with land use and the protection of property values is not a material consideration.

928. It has also been suggested there would be an increase in property and health insurance premiums. There is no evidence to support these suggested consequences.

929. Objections have been raised on the basis that the creation of new jobs is a myth and any jobs that would be created would not be well paid or long term, with little benefit to local people. There would be a number of jobs created but whether local people are employed is unknown and not within the remit of the planning authority to control. There may be some indirect economic impacts arising from employees taking up temporary residence, and spending money, in the area. However, the number of employees is not large and the jobs would be temporary.

930. It has been claimed the development would result in council tax increases to pay for damaged roads and bridges. There is no evidence to suggest the development would cause any damage over and above normal wear and tear that is expected of roads.

931. Bassetlaw Against Fracking states the NPPF requires a balance to be struck between economic growth and ensuring new development does not have an adverse impact on existing or future communities. It is the view of Bassetlaw Against Fracking that the economic benefits do not outweigh the adverse impacts. The MPA agrees that in considering the planning application a balance is to be struck and this will be undertaken at the conclusion of the report when considering all issues in the round.

932. Some public consultation responses provide support for the proposed development on the basis that shale gas can be an important contributor to energy self-sufficiency and security, which is particularly important in light of the view to leave the European Union. It is also stated that the exploitation of shale gas has significant economic benefits including reduced energy prices. The support primarily relates to a functioning shale gas industry, or at the least the shale gas extraction and production stage. As the proposed development is exploratory only and no shale gas is to be extracted the suggested benefits of future development subject to separate planning applications cannot be given weight at this stage.

933. Policy DM7 of the Bassetlaw Core Strategy relates to securing economic development. Part A) of the policy relates to future development proposals and gives support to development which would:

i. harness the educational and research potential of North Nottinghamshire College; and/or

ii. guarantee employment programmes for local residents that provide opportunities for training and development and will contribute to raised workforce skills levels within the District; and/or

iii. deliver, or contribute to, opportunities for the growth of indigenous businesses; and/or

iv. bring significant, good quality inward investment opportunities to the District; and/or

v. support and utilise growth opportunities in connection with Robin Hood Airport.

934. The policy does not give reasons to refuse a development, it only provides support where the above criteria are met. The proposed development may bring inward investment opportunities to the district, although there is no guarantee of this. In addition, as the proposed development is for exploratory drilling and is temporary in nature, any inward investment is unlikely to be significant. No other criteria apply to the proposed development. As such, this aspect of the policy is of little relevance.

935. Part B) of Policy DM7 relates to existing sites. Given that the proposed development is on greenfield land, the section of the policy does not apply.

936. Part 2 of Policy SP2 of the emerging MLP states that development should prioritise the avoidance of adverse social, economic and environmental impacts. In light of the above, it is considered that there would be no significant adverse social or economic impacts. It is possible that adverse perceptions arising from the development could occur, but such matters are not measureable and not considered to be significant. There could also be some economic benefits arising from the proposal, but again these would likely be temporary and are not considered to be significant.

937. Paragraph 144 of the NPPF sets out considerations for planning authorities when determining minerals planning applications. It states that great weight should be given to the benefits of minerals extraction, including to the economy. Whilst is it acknowledged that the economic benefits of exploratory drilling are likely to be small, great weight should be given to them.

938. In light of the above, the proposed development is not judged to have a significant adverse socio-economic impact. There may be some impact on leisure and tourism arising from moderate visual impact but it is not considered significant and would be temporary. There would be no significant material impacts on business operations from the development, and whilst there may be impacts arising from perception this is not evidence-based or quantifiable.

939. There would be some job creation. There may be some economic benefit to local business from supply chain spend and the presence of workers spending money in the area, although this spend is unlikely to be significant and would be

for a temporary period. Nevertheless, the NPPF is clear that great weight should be given to this.

Health Impacts

940. The applicant has a brief section within the Environmental Statemented titled 'health'. This states that comprehensive assessments in respect of traffic, air quality, noise and vibration, and water have been carried out. Within these assessments no significant adverse effects have been identified and the applicant states that subject to the mitigation measures proposed within the Environmental Statement, they consider that the proposed development would not have a significant adverse effect on the health of the local population.

941. The Bassetlaw Environmental Health Officer did not raise any concerns in relation to air quality; extraction/ventilation; lighting; pollution prevention and control; contaminated land; food hygiene; or health and safety.

942. NCC Public Health noted that they are not aware of any public health information about the local population to suggest an exceptional vulnerability amongst people likely to be affected by any emissions from the proposed development.

943. Public Health England has reviewed the proposed development. They make particular reference to the consideration of emissions and have no significant concerns related to the proposal. Notwithstanding this, they highlight the need for environmental monitoring so that any unexpected impact from operations would be detected and investigated promptly and results presented with comparison to relevant health-based standards, where applicable and encourage the Environment Agency, as the regulator, to validate the suitability of the applicant's proposals for environmental monitoring.

944. It should also be noted that objections have not been raised by NCC Highways, NCC Noise, NCC Reclamation, the Environment Agency, Health and Safety Executive and Anglian Water.

945. Many consultation responses have raised health-related concerns about the proposed development. The concerns relate to a wide range of issues including safety on the road and transport of chemicals and waste material; noise and vibration; air quality; lighting; contamination; and geology. References are made to damaging public health and exacerbating existing health problems such as sleep disturbance; stress; respiratory illnesses; nausea; birth defects; organ damage; nervous system problems; blood disorders; cancer and mental health issues. It is also stated that these issues would result in strain on the NHS and GP surgeries and loss of working days. Impacts relating to safety on the road and transport of chemicals and waste material; noise and vibration; air quality; lighting; contamination; and geology are assessed in detail in preceding sections of this report and the development would not result in an unacceptable impact to public health.

946. Whilst the development would not result in an unacceptable impact to public health, the MPA acknowledges that there is a public perception that such impacts are possible. Such a perception could result in increased anxiety for

people in the surrounding area, which may cause or exacerbate anxiety related health issues. It is recognised that fear and anxiety about possible health impacts is capable of being a material consideration. However, it has to be considered in the context of the responses from the relevant health agencies and bodies involved in regulating the proposed development, none of which have objected. In this regard, the anxieties are not supported by evidence of actual impacts.

947. The MPA has given consideration to whether a Health Impact Assessment (HIA) should be requested for the proposed development. Consideration has been given to this request, however, whilst not under the banner of a 'Health Impact Assessment', an assessment of the health impacts associated with the proposed development has been undertaken through the planning process. Neither the NCC Public Health, nor Public Health England has requested a HIA. In light of the above, no separate HIA is considered necessary. This approach follows that adopted for another recent shale gas exploration planning application that the County Council has dealt with.

948. Consultation responses have made reference to a report undertaken by Medact (an organisation formed by health professionals to raise awareness and speak out on health issues) which notes risks associated with fracking and states that the regulatory system for fracking is insufficiently clear, complete or robust and suggests that the most logical and rational conclusion is to abandon the current policy of encouraging unconventional shale gas extraction in the UK. Firstly, the report considers fracking and this proposed development is exploratory drilling. Furthermore, as set out above the impacts associated with this specific development have been considered and there would be no unacceptable impact on health.

949. Frack Free Nottinghamshire has also submitted a compilation of newspaper articles which relate to wastewater wells in Oklahoma; health risks near fracking sites; fracking being banned in Victoria, Australia; and what was at the time of their submission, the ongoing judicial review of North Yorkshire's decision to grant planning permission for fracking near Kirby Misperton. The articles do not relate to the application that is being considered.

950. There has been criticism that the planning application lacks information regarding emergency procedures. It has also been requested that a site health and safety document should be made available to the Parish Councils of Torworth, Blyth and Barnby Moor, and input from these parish councils should be included in its formulation.

951. It is noted that the applicant states within the Environmental Statement that the Site Health and Safety document would set out the approach to safely manage and regain control of an emergency situation and would include the following:

- Point of contact and liaison with emergency services;
- Escape and rescue plan;
- Fire protection plan;

- Emergency warnings and evacuation procedures, including a pre-defined exclusion zone;

- Management of access and traffic to ensure emergency services can gain access to the incident; and

- Provision of medical assistance.

952. The provision of a site health and safety document is welcomed, however, the MPA is not responsible for on-going health and safety of the site; this is the responsibility of the site operator and is controlled by the Health and Safety Executive. In light of this, to secure such a document by condition would not meet the 'relevant to planning' aspect of the tests for conditions set out in the NPPF.

953. The impacts of the proposed development relating to noise, light, surface and ground water, contamination and air quality have been assessed against the relevant development plan policies within the respective sections of this report. The proposed development is deemed to accord with all public health aspects of the relevant policies.

954. One of the three dimensions of sustainable development is social and gives rise to the need for the planning system to support strong, healthy and vibrant communities. Health features in various sections of the NPPF including the need to take the effects of pollution on health into account (Paragraph 120); the need to minimise and mitigate impacts on health and quality of life arising from noise (Paragraph 125); and with regard to mineral development ensure that there are no unacceptable adverse impacts on human health (Paragraph 144). The proposed development is considered to be in accordance with the health-related aspects of the NPPF.

<u>Climate Change</u>

955. The applicant has not assessed the proposal in relation to climate change impacts.

956. Objections to the proposed development have been raised on the basis of climate change. Reference is made to the proposed development being contrary to various legislation, policies, guidance and decisions including:

a) Section 182 of the Planning Act 2008;

b) Policy M3.1 of the Nottinghamshire Minerals Local Plan.

c) Spatial Objective SO6 and Policy DM10 of the Bassetlaw Core Strategy;

d) Policy SP4 of the emerging Nottinghamshire Minerals Local Plan;

e) Paragraphs 6, 93 and 94 of the NPPF;

f) The outcomes of the Paris Climate Change summit; and

g) The Secretary of State's appeal decision on peat extraction at Chat Moss which stated the development would be contrary to relevant policies on climate change; and

h) The Climate Change Committee document 'The compatibility of the UK onshore petroleum with meeting the UK's carbon budgets'.

957. Section 182 of the Planning Act 2008 states "*Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute towards the mitigation of, and adaptation to, climate change*". Section 182 relates to development plan documents, rather than the decision-making process. The decision on this application will be made in line with the relevant development plan documents which, as a whole, include polices to secure that development of land use contribute towards the mitigation of and adaptation to climate change.

958. Policy DM4 of the Bassetlaw Core Strategy includes a section relating to carbon reduction within the General Design Principles part of the policy. It states that new development will need to demonstrate that careful consideration has been given to minimising CO2 emissions and measures that will allow all new buildings in Bassetlaw to adapt to climate change. In considering the development against Policy DM4, it is not considered there is anything further that can be required of the proposal to minimise any impact on the causes of climate change.

959. Policy DM10 of the Bassetlaw Core Strategy comprises four parts: carbon reduction; district heating and co-location; major development and community energy schemes. Part A of the policy provides support to renewable and low carbon energy development. As the proposed development is not for renewable or low carbon energy no support is offered by this policy. Part B relates to district heating and co-location and is therefore not applicable. Part C relates to major development and expects proposals to deliver low-carbon and renewable energy infrastructure in line with the assessments of feasibility and overall viability. Given the nature of the proposal, a temporary exploratory borehole, the delivery of low carbon and renewable energy infrastructure is not applicable. Part D relates to community energy schemes and does not apply to the proposal development.

960. Policy SP4 of the new emerging Nottinghamshire MLP relates to climate change and states that all minerals development should minimise their impact on the causes of climate change. Where applicable, development should assist in the reduction of vulnerability and provide resilience to the impacts of climate change by:

a) Being located, designed and operated to help reduce greenhouse gas emissions, withstand unavoidable climate change impacts and move towards a low-carbon economy;

b) Avoiding areas of vulnerability to climate change and flood risk. Where avoidance is not possible, impacts should be fully mitigated;

c) Developing restoration schemes which will contribute to addressing future climate change adaptation, including through biodiversity and habitat creation, carbon storage and flood alleviation.

961. In considering the requirements of Policy SP4, it is not considered that anything further can be required of the proposal to help reduce greenhouse gas emissions, to withstand unavoidable climate change impacts, or to move towards a low-carbon economy. Part B of the Policy looks to avoid areas of vulnerability to climate change and flood risk. In this instance the development is located in the lowest flood risk zone. With regard to Part C of the Policy the restoration of the site would be back to its existing use and, as such, would not be a contribution to addressing future climate change adaptation.

962. Paragraph 6 of the NPPF outlines that the purpose of the planning system is to contribute to the achievement of sustainable development. The policies in paragraphs 18-219 of the NPPF, constitute the Government's view on what sustainable development means in practice for the planning system. Paragraphs 93 and 94 of the NPPF highlight 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, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development. It also highlights that planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations.

963. Strategic Objective 6 of the Bassetlaw Core Strategy seeks to ensure that all new development addresses the causes and effects of climate change, as appropriate, by reducing or mitigating flood risk; realising opportunities to utilise renewable and low carbon energy sources and/or infrastructure, alongside sustainable design and construction; taking opportunities to achieve sustainable transport solutions; and making use of Sustainable Drainage Systems.

964. In relation to Paragraphs 6, 93 and 94 of the NPPF and SO6 of the BCS, as set out above it is not considered that anything further can be required of the proposal to minimise any impact on the causes of climate change. In light of this, it is important to balance the climate change impact of the development, and all other identified issues, with the benefits of the development. This is the approach advocated in Paragraph 6 of the NPPF, which states that the Government's view on sustainable development is set out across the NPPF, when read as a whole. In this regard, the climate change impact of the development, as an exploration activity, would be limited to vehicle movements and drilling of the exploration well. Emissions from such activities are generally regarded as small.

965. When considering the vulnerability of the development it is located in the lowest flood risk zone and is temporary in nature. As such, the development is not considered to be particularly sensitive or vulnerable to climate change.

966. Reference has been made to the Paris Climate Change summit and Agreement, and that the proposed development conflicts with these. The Paris

Agreement came into force on 4th November 2016, with the United Kingdom ratifying the agreement on 18th November 2016. The agreement aims to reduce the threat of climate change by:

a) Holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels.

b) Increasing the ability to adapt to the adverse impacts of climate change;

c) Making finance flows consistent with a pathway towards low greenhouse gas emissions.

967. The mechanism by which the aims of the Agreement are implemented is through national policies adopted across the participating parties. In this regard, this application will be determined in line with relevant climate change polices set out in the development plan and any relevant material considerations.

968. With reference to material considerations, a number of objections have referenced the Climate Change Committee document 'The compatibility of the UK onshore petroleum with meeting the UK's carbon budgets' which states that onshore petroleum extraction on a significant scale is not compatible with UK climate change targets unless three tests are met:

- Test 1: Well development, production and decommissioning emissions must be strictly limited.

- Test 2: Consumption – gas consumption must remain in line with carbon budgets requirements.

- Test 3: Accommodating shale gas production emissions within carbon budgets.

969. The report as a whole, and indeed the above tests, focus on actual extraction and production stages of development, however, with regard to exploration it does state:

"*Exploration emissions are generally small, relating to transporting the seismic equipment and drilling the exploration well. Small volumes of gas may be generated during the development of the well, most of which is likely, at a minimum, to be burned in a flare. There is, however, little information available on emissions associated with exploration. Most studies analysing the GHG* [Green House Gas] *emissions from exploiting onshore petroleum either ignore this phase or assume the emissions are negligible. It should not be taken as a given that emissions from exploration will be low, especially for any extended well tests. Appropriate mitigation techniques should be employed where practical*".

970. The Government's response to this section of the report agrees that appropriate emission mitigation techniques should be employed where practical during the exploration phase.

971. Whilst this proposed development is for exploration there would not be any well testing which would result in gas releases and there are no plans by the operator to vent methane. Indeed, the conditions of the Mining Waste Permit do not allow any point source emissions from the site. As such, emissions relating to this proposal would primarily be from the vehicle movements associated with the development and the drilling of the exploration well which, as stated in the Committee on Climate Changes report, are generally small.

972. It has been argued in representations that the three tests are not going to be met in the near future and as such significant shale gas production would not be compatible with climate change targets. Therefore, it would be appropriate on climate change grounds to reject shale gas exploration proposals. This argument is based around shale gas production on a significant scale. This proposal is for a single exploration well and is assessed on that basis.

973. Friends of the Earth has stated that the need for the application is lessened by having to tackle climate change. The need for the development is clear and set out in PPG and the Shale Gas and Oil Written Ministerial Statement which identify a 'pressing need' and a 'national need'. Having to tackle climate change does not lessen the 'need' identified in this guidance, however, the impact of this development on climate change (identified as being generally small) is weighed in the overall planning balance.

974. An objection has been raised on the basis that the applicant has not considered greenhouse gas emissions and that this information should form a request for further information. Indeed, the applicant has not considered greenhouse gas emissions, however, the MPA in determining the application has considered the impact of the development in relation to climate change.

975. Reference has been made to Secretary of State's appeal decision on peat extraction at Chat Moss which stated the development would be contrary to relevant policies on climate change. It has been stated that there is no guarantee that extraction of fossil fuels across regions balance themselves out and development would not fit within the UK's timescales for reducing carbon emissions from electricity generating power stations by 2030. It is important to reiterate that the proposed development is exploration only. As such, objections based on the extraction and subsequent use of fossil fuels do not apply to this development. As a result, the Chat Moss appeal decision has little bearing on the determination of this planning application with regard to climate change.

976. Bassetlaw Against Fracking has stated that the European Parliament has passed a resolution urging all member states not to proceed with fracking operations. In February 2016 a majority of MEPs voted in favour of a review of the EU biodiversity strategy which included a statement urging Member States not to authorise any new hydraulic fracturing operations in the EU. The vote was not legally binding. In any event, the proposed development being considered would not involve hydraulic fracturing.

977. In light of the above, it is acknowledged that there is little information available on emissions associated with exploration. However, the climate change emissions associated with this development are expected to be limited primarily to those from vehicles and drilling equipment which are temporary, considered

to be generally small, and are not deemed to be significant. From an emissions perspective the development is not contrary to policy or planning guidance.

Cumulative Impacts

978. Within the planning application the applicant has considered cumulative impacts within the Environmental Statement chapters on transport; air quality; noise; geology and the water environment; landscape and visual; ecology; and cultural heritage.

979. With regard to traffic the applicant has considered cumulative impacts associated with a solar farm permission at Jubilee Farm, Daneshill Landfill, an extension of time to an existing mineral operation at Scrooby South Quarry and potential future mineral allocations at Barnby Moor and Botany Bay, Retford.

980. With regard to the mineral allocations at Barnby Moor and Botany Bay the applicant considers the timescales to be such that they are unlikely to come forward at the same time as this proposed development. Therefore, there is unlikely to be a cumulative impact. In terms of the solar farm the applicant highlights that traffic would be at its highest during construction, resulting in approximately 10 movements per week for approximately 12 weeks. After this period traffic generation would be limited to quarterly maintenance visits. The applicant states that Scrooby South and Daneshill Landfill are existing developments and any traffic from these operations that uses the same route that would be used by traffic from the proposed exploratory well development has already been taken into account in baseline traffic counts.

981. A number of representations have been received raising concerns about cumulative traffic impacts, and specific reference has been raised in relation to large scale industrial and logistics development at Harworth (15/00971/OUT), Theivesdale Lane (Worksop) and the A1 junction (Blyth). Reference has also been made to there being cumulative traffic impacts with an “AD Plant Charcon”.

982. Highways England has specifically considered the proposed development cumulatively with the industrial development in Harworth (15/00971/OUT) and is of the view that there would not be any material change to the Strategic Road Network operation. Highways England has confirmed that this would be the case even if all 56 movements were to use the A1.

983. The Highways Authority has considered the proposed development from a cumulative perspective, specifically the employment park development in Harworth. It is reported that there would be the equivalent of 1 car approximately every 7 minutes in the busiest period. This is deemed to be unlikely to make a material difference to traffic conditions, and certainly not to a point where it could be demonstrated that the cumulative impact of development would be severe.

984. Reference has been made to development at the A1 junction. No further details have been given, but this is understood to be Symmetry Park, a 48 acre industrial/distribution park with up to 1,000,000 square feet for B1, B2 and B8 uses. This site is currently undeveloped and is being marketed. Given the

timescales that are needed to find users and then develop the site, it is considered unlikely there would be a cumulative impact with the proposed temporary exploratory borehole.

985. A representation has stated that there would be cumulative traffic impact with "AD Plant Charcon". Whilst no further details have been given, this is likely to be a reference to an anaerobic digestion facility operated by Tamar Energy at Sutton Grange Farm. This facility opened in 2014 and therefore any traffic associated with it will have already been taken into account in the baseline traffic assessment.

986. A representation has stated that there would be cumulative traffic impact with development at Theivesdale Lane. This is understood to be a reference to an outline application with some matters reserved for a mixed used development comprising 182 dwellings, clean/green tech Business Park, innovative data centre and ancillary storage use (Ref: 15/01477/OUT). The site is to the north-east of Worksop and approximately 10km by road from the application site. This application has not been determined, indeed a letter has recently been issued requesting an extension to the determination period until 28th February 2017. It is considered that, in the event that planning permission is granted, the delivery timescales for the development are such that there is unlikely to be a cumulative impact.

987. The applicant has not identified any specific developments with which there may be cumulative impacts on air quality, however, they do state that as combined annual impacts of NO_2 and $PM_{2.5}$ are less than 30% of the relevant air quality objective, there would not be any significant cumulative impacts.

988. Concerns have been raised in consultation responses about cumulative air quality impacts in relation to the A1, Robin Hood Airport and the Finningley and Rossington Regeneration Route (FARRS). Any emissions from the A1 and Robin Hood Airport will have been included in baseline air quality levels and there would not, therefore, be any additional cumulative impact. With regard to FARRS, it opened on 29th February 2016, so the baseline data is unlikely to have factored it in. However, at approximately 13.5km from the application site it is considered unlikely to have a cumulative impact.

989. The applicant has not identified any specific developments with which there may be cumulative impacts in relation to noise.

990. A representation has stated that noise levels from the A1 have been used to mitigate the impact from the development rather than considering the contributory, cumulative impact. Whilst this comment is noted, it is normal practice for existing noise sources to form the baseline against which noise from the development is assessed.

991. In relation to geology and the water environment the applicant states that given the nature of the proposed development and the absence of identified significant effects it is considered unlikely that the proposed development would give rise to significant cumulative effects.

992. With regard to landscape and visual impact the Environment Statement has considered the effects in conjunction with the consented solar farm at Jubilee Farm. The applicant states that of the representative viewpoints assessed in the landscape and visual chapter the only location where the two projects would be simultaneously visible would be at the junction between viewpoints 2 on the A634 and Graves Moor Lane, to the north. The applicant states that even though the two projects would be seen at this location as energy development/industrialisation, the broader character of the rolling agricultural landscape would remain unchanged.

993. The sequential impact is also acknowledged in that users of the A634 would pass by the proposed shale gas site and then the solar farm, or recreational users would catch glimpses of both developments as they move along the public rights of way network. The applicant considers this impact to be mitigated by limited visibility. Overall, the applicant is of the view that there would not be a significant cumulative visual impact.

994. In relation to ecology the applicant states that the potential for indirect effects on statutory and non-statutory sites and species in combination with other development in the area has been undertaken and having regard to the conclusions of the noise, air quality and water assessments, no significant adverse cumulative impacts are predicted to occur.

995. With regard to cumulative impacts on cultural heritage the applicant has considered the solar farm at Jubilee Farm in relation to archaeology. The applicant states that the effect of the proposed exploratory drilling development on archaeological remains, incorporating mitigation, is predicted to be slight adverse but not significant. Due to the granting of planning permission for the solar farm the applicant assumes that the effect of the solar farm on the archaeological features was considered to be similarly less than significant. In light of this, whilst the development would affect two different although possibly related features, the applicant considers that any cumulative effects would not be significant.

996. The applicant has also had regard to the landscape and visual impact assessment for the solar farm. This considered that at a greater distance than 50m from the development site to the north, east and south, changes to the landscape character would be of negligible scale and magnitude. Any cumulative visual effect would only last for four months and it is predicted that the effect would not be significant.

997. A number of representations have stated that the development would not stop at one well, instead it would lead to a shale gas field. It is requested that the cumulative impacts of developing fracking wells is taken into account. Planning permission has not been granted or sought for hydraulic fracturing or other exploration sites in proximity to the proposed development, which means that there are no cumulative impacts to consider. It is noted that planning permission has been granted for an exploratory well at a site off Springs Road, Misson. This is approximately 13.5km north of the proposed development and there would be no significant cumulative impacts.

998. The table below considers the cumulative impacts from different development in relation to various impacts.

Table 28 - Cumulative Impact Assessment

	Traffic	Air Quality	Noise and Vibration	Landscape and Visual Impact	Cultural Heritage
Solar Farm at Jubilee Farm	Traffic from construction would amount to an average of 10 movements per week. Traffic from operation would be limited to occasional maintenance visits – no significant cumulative impact.	Following construction no material air quality issues associated with the development – no cumulative impact.	Following construction there would be no significant noise or vibration generated by the solar farm – no cumulative impact.	There would be a degree of cumulative impact from two identified viewpoints. There would also be sequential views for users of the A634 and footpaths in the area – impact assessed as less than significant.	Both development would have an impact on existing archaeological features. This has been assessed as less than significant.
Extension to minerals operation at Scrooby South	This is an extension of time for an existing planning permission. It does not represent new vehicle movements.	Site is approximately 3.9km north-west. Cumulative impact highly unlikely.	Site is approximately 3.9km north-west. Cumulative impact highly unlikely.	The new development site is not of vertical significance – No cumulative impact.	Due to distance and nature of development no cumulative impact on the setting of heritage assets is expected.
Large scale commercial development at Harworth	There is sufficient capacity on the Strategic Highways Network and surrounding roads to accommodate traffic from both the Harworth and Tinker Lane developments.	Site is approximately 4.5km north-west - Cumulative impact highly unlikely.	Site is approximately 4.5km north-west - Cumulative impact highly unlikely.	The new development site is not of vertical significance – No cumulative impact.	Due to distance and nature of development no cumulative impact on the setting of heritage assets is expected.
Symmetry Park	Development is unlikely to be concurrent with the proposed temporary exploration works. In any event, there is considerable capacity within the road network.	Site is approximately 4km north-west - Cumulative impact highly unlikely.	Site is approximately 4km north-west - Cumulative impact highly unlikely.	Site is approximately 4km north-west - Cumulative impact highly unlikely.	Due to distance and nature of development no cumulative impact on the setting of heritage assets is expected.
Thievesdale Lane	Site is approximately 5km distant in a straight line, and approximately 9km distant by road. Due to the distance the cumulative impacts				

	associated with traffic, air quality, noise and vibration, landscape and visual impact and cultural heritage are not deemed to be significant. In any event, the application has not been determined and due to the timescales associated with determining and delivery of the development the potential for cumulative impacts is unlikely.
Potential future minerals allocations at Barnby Moor and Botany Bay	These sites are subject to allocations in the Nottinghamshire Minerals Local Plan submission draft. Should the plan be adopted and the sites allocated they would still have to be subject to planning applications before development. Due to the timescales they are unlikely to come online at the same time as this proposed development.
The A1(M)	This is not new development. The impact that this feature has in the area has been taken into account in the relevant assessments.
FARRS (Finningley and Rossington Regeneration Route Scheme)	At a distance of 13.5km from the application site no significant cumulative impacts are anticipated.
Robin Hood Airport	At a distance of over 11km from the application site no significant cumulative impacts are anticipated. In any event, the development is existing and any traffic, air quality and noise resulting from the airport will have formed part of the baseline against which the proposed development is assessed.
AD Plant Charcon	This is an existing development approximately 4.5km to the east of the application site. No significant cumulative landscape and visual or cultural heritage cumulative impacts are expected due to the distance and nature of the development. Any traffic, air quality and noise associated with the development will have formed part of the baseline against which the proposed development is assessed.
Daneshill Landfill	This is an existing development approximately 2.5km to the north-east of the application site. No significant cumulative landscape and visual or cultural heritage impacts are expected due to the distance and nature of the development. Any traffic, air quality and noise associated with the development will have formed part of the baseline against which the proposed development is assessed.

999. Policy M3.27 of the Nottinghamshire MLP states that planning permission will not be granted for development which would result cumulatively in a significant adverse impact on the environment and/or the amenity of local communities. Policy DM8 of the MLP Submission Draft also supports development where there would be no unacceptable cumulative impact. Paragraph 32 of the NPPF states that development should only be prevented on transport grounds where the residual cumulative impacts of the development are severe. In addition Paragraph 144 of the NPPF states that in granting planning permission for mineral development, there should be no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality. In light of the above, the proposed development would not result in any significant cumulative impacts and is in accordance with the relevant policies.

Restoration and Afteruse

1000. The applicant states that if the results of the exploration work indicate that further development is not viable, the exploratory well would be plugged and capped (using steel plugs and cement) and the wellhead removed in accordance with industry best available techniques. Primarily, this would take the form of setting various multiple cement plugs to isolate permeable formations from each other and from the surface (the exact location of the plugs being determined by the geology encountered). Once the plugs are set and confirmed sound the wellhead would be cut off below the ground, capped and recorded and the cellar backfilled.

1001. In respect of the monitoring boreholes, the headworks and the uppermost 0.5m of casing would be removed from each borehole and the boreholes plugged and capped in accordance with Environment Agency guidelines.

1002. The construction materials (aggregates, reinforced concrete, geotextile membranes), the services beneath the membranes and the remaining on-site infrastructure (site offices, security and fencing/gates) would all be removed from the site to be re-used, recycled or disposed of. The stockpiled soils would be replaced and the site restored to its previous agricultural use.

1003. Following restoration the land would be subject to a five year aftercare period to ensure that it is returned to full agricultural productivity.

1004. Restoration operating hours would be 07:00 – 19:00 Monday to Friday and 07:00-13:00 on Saturdays, with no working on a Sunday or Public and Bank Holidays. It is estimated that this phase would take eight weeks to complete. Maximum traffic movements would be 56 per day (36 HGV movements and 20 light vehicle movements).

1005. The PPG sets out guidance on what hydrocarbon issues Minerals Planning Authorities can leave to other regulatory regimes. With regard to well decommissioning/abandonment the PPG states that following exploration, the well is likely to be suspended and abandoned for a period of time. Health and safety legislation requires that its design and construction is such that, so far as is reasonably practicable, there is no unplanned escape of fluids from it. The

minerals planning authority is responsible for ensuring the wells are abandoned and the site is restored (Paragraph: 112 Reference ID: 27-036-20140306).

1006. Separately, the PPG states that the responsibility for the restoration and aftercare of mineral sites, including financial responsibility, lies with the minerals operator and, in the case of default, with the landowner (Paragraph: 036 Reference ID: 27-036-20140306).

1007. These two sections of the PPG mean that the restoration of the site, both physically and financially, is the responsibility of the minerals operator; in this case, Dart Energy. However, it is the responsibility of the Minerals Planning Authority to ensure that Dart Energy abandon the wells and restore the site. If, for whatever reason, Dart Energy were to default, the responsibility for restoration lies with the landowner and the Minerals Planning Authority has the power to enforce this.

1008. Notwithstanding the restoration responsibilities of the MPA, the manner in which the borehole is to be abandoned is governed by health and safety legislation, as stated in the PPG, and overseen by the HSE. Indeed, the HSE note in their consultation response that the operator must report to HSE every week during construction of the well and during work to abandon the well. This provides HSE with assurance that the operator is constructing and operating the well as described in the notification. If they are not, HSE can take the appropriate regulatory action. The operator must also appoint an independent well examiner who has an important quality control role in ensuring that the well is designed, constructed, operated and abandoned to industry and company standards and that regulatory requirements are met.

1009. The Environment Agency note in their Environmental Permit decision document that they have considered the risk of the company leaving the well in a state of disrepair and are satisfied that the appropriate measures to prevent this would be in place. In addition, the Environment Agency go on to state that at the point when the operator wishes to decommission the well they would have to carry out any necessary works to make the well safe and prevent any leakage that could cause environmental damage. The Health and Safety Executive have detailed legal requirements relating to this stage of the well life, which the operator would have to comply with. The Environment Agency would be involved in this process to ensure that any groundwater is protected during the abandonment process and for the future. The operator would have to provide sufficient evidence to satisfy the Environment Agency that the decommissioned well would not cause any ongoing or future impact on the environment before surrender of the permit would be accepted. Monitoring at the site would continue into the post-decommissioning period and would have to demonstrate that no impact has occurred and that there are no ongoing environmental issues. Well site restoration would be the subject of a separate waste management plan submitted by the operator as part of any permit application to surrender the Mining Waste Permit.

1010. NCC Reclamation has raised no objection to the proposed development, but request a condition to extend monitoring beyond the drilling process so that the site is confirmed free from contamination upon restoration.

1011. A number of representations from individuals and organisations (including Blyth Parish Council, Frack Free Nottinghamshire and Nottingham Friends of the Earth) have raised concerns about the financial position of Dart Energy and their parent company IGas. Reference has also been made to IGas' falling share price. Concerns are raised about the company folding part way through the operations and not being able to fulfil the restoration requirements for the site. A number of parties have suggested that a restoration bond would be appropriate to cover such an eventuality, although others have suggested that it would be more appropriate to refuse the application, or at least delay a decision until IGas has signed and conformed to the legal agreement for the Springs Road, Misson development.

1012. Paragraph 144 of the NPPF includes guidance on restoration and bonds, stating when determining planning applications, local planning authorities 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*".

1013. In this regard, it would be appropriate for a condition to be attached to any planning permission granted requiring the abandonment of the well and the restoration of the site. This would be in line with the NPPF and would allow the MPA to fulfil its responsibilities in ensuring well abandonment and site restoration in line with the PPG. However, it is then necessary to consider whether there are exceptional circumstances for which a financial guarantee to underpin such a condition can be justified.

1014. The Planning Practice Guidance provides supplementary guidance on funding site restoration or aftercare, stating that Minerals Planning Authorities should address any concerns about the funding of site restoration principally through appropriately worded planning conditions (Paragraph: 047 Reference ID: 27-047-20140306). The PPG goes on to state that a financial guarantee to cover restoration and aftercare would normally only be justified in exceptional circumstances (Paragraph: 048 Reference ID: 27-048-20140306), which is in line with the NPPF. The PPG sets out that exceptional circumstances include:

- "*Very long-term new projects where progressive reclamation is not practicable, such as an extremely large limestone quarry*".
- "*Where a novel approach or technique is to be used, but the minerals planning authority considers it is justifiable to give permission for the development*".
- "*Where there is reliable evidence of the likelihood of either financial or technical failure, but these concerns are not such as to justify refusal of the permission*".

1015. At a total of three years the development is not a very long term project in the way that an extremely large limestone quarry is, which may take decades to complete. A financial guarantee is not justified on this point.

1016. The development is a single vertical exploratory borehole (not a horizontal borehole as indicated by Frack Free Nottinghamshire), many of which have been drilled, and subsequently restored, over the years in the UK and indeed in Nottinghamshire. The restoration of the development does not constitute a novel approach or technique and no reliable evidence has been provided on the likelihood of technical failure. A financial guarantee is not justified on these points.

1017. On the third point, many parties have raised concerns about the possibility of financial failure. The MPA is of the view that the principle of the development is acceptable in this location and planning permission is associated with the land rather than a specific operator/applicant, so to refuse the application on the grounds of the applicant's finances would be unjustified. As such, there is possible justification for a financial bond on this point and further consideration is warranted.

1018. The first consideration is whether there is 'reliable' evidence of the likelihood of financial failure. In this regard, attention has been drawn by a number of parties to the falling share price of IGas, which is the parent company of Dart Energy. Indeed, IGas' share price was around 146.5 (GBX) in June 2014 and has fallen to around 11.8 (GBX) in January 2017. The initial drop in share price largely reflects the drop in oil prices in mid-2014. Although oil prices have recovered somewhat since a low at the start of 2016, the IGas share price has remained relatively low. Nevertheless, the MPA does not consider the fluctuation of a company's share price alone to be sufficient evidence that there is a likelihood of financial failure.

1019. Notwithstanding the above, IGas' own regulatory news does identify some ongoing financial matters. IGas report in a company update released on 29th December 2016 that:

"The Company has recently met with certain of the Company's bondholders and potential strategic investors to discuss its capital restructuring options and valuation of the Company, as it continues to assess options which will allow a new capital structure for the Company that is sustainable in the current oil price environment and enables IGas to capitalise on value accretive opportunities.

IGas confirms it is now in well progressed discussions with one potential strategic investor. Discussions with this strategic investor and other stakeholders and investors are ongoing and there can be no certainty that an agreement will be reached or that a transaction will be forthcoming (a "Potential Transaction").

The Company continues to hold significant cash resources of c.US$32 million as at 22 December 2016. As previously announced, the Company expects that it will remain compliant with its daily liquidity covenant until late March 2017, based on current forecasts.

As previously disclosed, the Company confirms that its current forecasts project non-compliance with its leverage covenants as at 31 December 2016. The Company's position, following receipt of legal advice, remains that in the event of a breach of the leverage covenants, an equity cure provision exists within the

bond agreements, such that a breach can be cured within 25 business days of the delivery of the compliance certificate for that period. For the twelve months ending 31 December 2016, the compliance certificate must be delivered by 30 April 2017, and accordingly the latest date for any equity cure would be early June 2017.

The board expects completion of the Potential Transaction would remedy any leverage covenant breaches as at 31 December 2016 and remedy the forecast breach of the daily liquidity covenants."

1020. More recently, on 1 March, IGas announced a proposed investment of US$35 million by a private equity company, Kerogen Capital, which, according to its own website, specialises "in the international oil and gas sector" and "manages over US$2 billion across multiple funds". It is understood the deal is subject to the approval of IGas' shareholders and bondholders so there is no guarantee that it will go through.

1021. The MPA notes the 'significant cash resources' held by IGas, and the ongoing discussions with a potential investor, albeit that there is no certainty that an agreement will be reached. Nevertheless, the MPA also notes the ongoing concerns about daily liquidity, and it is on this basis that a bond to secure restoration could be justified.

1022. Notwithstanding the above, it is very important to recognise the other regulatory bodies involved in the control of such development, and the roles that they have. Particularly important is the Oil and Gas Authority (OGA) which requires licensees to meet certain financial criteria to demonstrate that they have the financial capacity to exploit the exclusive rights granted by the licence. With regard to well consent for exploration and appraisal wells the OGA's Financial Guidance states:

"OGA's policy requirement is to ensure that no well consents are issued unless we are satisfied that the licensee(s) has(have) access to sufficient funds to meet its(their) share of the actual drilling costs, the plugging and abandonment of the well if it is proven to be "dry" or otherwise non-viable and a minimum contingency of 50% of the drilling costs. The sum of all these is referred to hereafter as the "Well Costs".

"Additionally, S75 of the Energy Act 2008 added a provision to the Petroleum Act 1998 that grants to the Secretary of State the power to require financial information and documents from a company that has drilled, or started to drill, a well. OGA will analyse that information and decide whether or not it is satisfied that the company will later be able to plug and abandon the well. Where OGA is not sufficiently confident of this, OGA is empowered to require the company to take further action that will bring the necessary level of confidence, and while the action is not specified it might include the creation of financial security such as a Letter of Credit for the required amount under OGA's control. This power applies equally to all wells, whether onshore or offshore, drilled under a Petroleum Act licence or a Gas Storage Licence. OGA will routinely check the applicant's financial capacity in the context of considering a well consent. If not satisfied of the applicant's financial capacity OGA may be prepared to consent

whilst making clear that we will invoke the Secretary of State's powers from the Petroleum Act if the applicant chooses to act on that consent and drill".

1023. The OGA undertake financial checks on licensees before issuing a PEDL and, in light of the above, additional checks are undertaken when a well consent is granted. Furthermore, the OGA has powers under the Energy Act to require financial information from a company once it has started drilling and require the company to take further action to give the OGA confidence that the well would be plugged and abandoned. Indeed, the OGA's requirement for sufficient funds does not just extend over the operator, but to the licensees, in this case Dart Energy (East England) Limited as the lead licence holders, Engie E&P UK Limited, Ineos Upstream Limited and IGas PLC. In light of the very specific role undertaken by and powers afforded to the OGA, there are substantial measures in place which would prevent the likelihood of financial failure leading to an operator leaving a well without suitable plugging and abandonment. Despite representations from Frack Free Nottinghamshire recommending that the MPA reviews the applicant's financial position, it is considered that these matters are already dealt with by the OGA. It is therefore very difficult for the MPA to recommend that a restoration bond is required for the well on the grounds of likely financial failure when there are specific measures to prevent likely financial failure, which extend beyond the applicant (Dart Energy) and its parent company (IGas).

1024. However, the MPA is of the view that the financial responsibility and powers held by the OGA apply to the well and its plugging and abandonment only. There is no evidence that these powers apply to the remainder of the well pad and associated infrastructure. Furthermore, the ability of the MPA to enforce restoration extends to the operator and, in the case of default, to the landowner. The MPA has no powers to require other companies on the PEDL to undertake restoration. Accordingly, it would be reasonable given the ongoing financial issues for a restoration bond to be applied to the surface level aspects of the development, to ensure removal of the well pad and infrastructure, and the return of the site to agriculture. In this respect the MPA is satisfied that there are exceptional circumstances to warrant seeking a financial guarantee for surface level restoration only.

1025. It is noted that the above position differs from the decision on the Misson Springs exploratory boreholes application, where a restoration bond for all activities was included in Committee's resolution. The above recommendation is based on the latest publicly available financial information about the applicant and the latest regulatory financial guidance available from the Oil and Gas Authority, as set out above.

1026. Policy M5.3 of the Nottinghamshire MLP prevents the retention of haul roads and hard standing following exploratory drilling except where they provide clear agricultural or other benefits. In this case the applicant is not seeking to retain any haul roads or hard standing following restoration. The development is therefore in accordance with this policy.

1027. Policy M13.7 of the Nottinghamshire MLP states that where planning permission is granted, conditions will be imposed requiring the site to be restored back to its

original use as soon as practical once the development is no longer required. Conditions requiring the restoration of the site would be entirely in accordance with this policy.

1028. In addition to the above, the claim for judicial review lodged by Friends of the Earth and Frack Free Ryedale of the decision by North Yorkshire County Council to grant planning permission to Third Energy UK Gas Limited to carry out hydraulic fracturing at a site near Kirby Misperton, North Yorkshire, is noted

1029. One of the grounds for lodging the judicial review focused on the absence of the provision of a financial bond, and advice that the Committee Members had been given in this regard.

1030. In granting planning permission for hydraulic fracturing, North Yorkshire did not require a financial bond, but did grant planning permission subject to a number of restoration conditions including one which requires the approved restoration and aftercare measures to provide for any necessary financial commitment required of the applicant to secure the scheme. The following reason was given for this condition: "*The securing of a financial commitment is considered necessary in this instance by virtue of the need to have the security that funds would be in place should a circumstance arise that the restoration and/or after-care of the site should fall to the 'public purse*'."

1031. The judge concluded that the relevant conditions gave a considerable degree of protection to residents and that the Council acted lawfully in imposing the conditions in its discretion and deciding not to seek a financial bond.

1032. Whilst the Third Energy case relates to the same industry as that being considered here, it is important to highlight that it involved a different development, in a different location and would be undertaken by a different operator. It is not simply a case of applying the approach upheld in the judicial review directly in this case; it is necessary to come to a judgement on the circumstances of this particular case.

1033. It is the view of the MPA that, in this instance, it would be appropriate to secure the recommended surface level restoration bond through a Section 106 legal agreement, rather than condition. This is because the wording of the NPPF does not discuss the use of conditions themselves to secure financial guarantees, but instead refers to the use of bonds or other financial guarantees to <u>underpin</u> planning conditions, thus supporting the approach of using a mechanism (i.e. Section 106 Agreement) separate to the restoration condition(s).

<u>Section 106 Agreement</u>

1034. As set out in detail above, it is recommended that should planning permission be granted, it is subject to a Section 106 Agreement securing a financial bond for the surface level restoration of the site.

1035. Concern has been raised that vehicles associated with the proposed development would not adhere to the route that has been set out, with it being suggested that HGVs may travel through villages to the east (e.g. Barnby Moor

and Ranskill) or along unsuitable roads (e.g. Graves Moor Land and Baulk Lane).

1036. The Highways Authority has not raised any concerns in relation to the proposed route, stating that it has no issue with the amount of traffic the development would generate. The Highways Authority has not specifically identified the need for a routeing agreement. Notwithstanding this, the MPA notes that there are minor roads in the area which would likely be unsuitable for large vehicles and, furthermore, the potential impact of traffic on the road network outside of the proposed route has not been assessed. It is noted that the applicant itself has, as part of the planning application, stated that HGVs would be restricted to the A634 and B6045, where they would gain access to the A1/A1(M) to the north and south of Blyth.

1037. In light of the above, it is recommended that a Section 106 Agreement is used to secure the routeing of vehicles to and from the site, so as to prevent traffic impacts on other routes, which have not be subject to full assessment. This approach would be in accordance with Policy M3.14 of the Nottinghamshire MLP.

1038. Alongside the routeing agreement, it is considered appropriate to secure the submission of a driver code of conduct through a Section 106 Agreement. This would ensure the appropriate and courteous use of the roads by vehicles associated with the proposed development travelling to and from the site. A Section 106 Agreement is the appropriate mechanism for this as it relates to activity outside of the site and cannot, therefore, be controlled by condition.

1039. Finally, it is clear that there is significant community interest in, and concern about, the proposed development. The applicant has sought to engage with the community through the application process and has facilitated a Community Liaison Group. The MPA considers the continued involvement of the community though the course of the development an essential measure in fostering relations. To this end, it is recommended that a liaison group is secured through a Section 106 Agreement.

Other Considerations

1040. Many groups (including Bassetlaw District Council and Parish Councils) and individuals have objected to the proposed development on the basis that the applicant has undertaken unauthorised development, by siting security cabins at the site. There is significant concern that given the company has not operated in line with planning regulations at this stage, there is the possibility that there may be breaches of planning control if planning permission is granted.

1041. The situation regarding the Security Cabins is set out in the ‘background’ section towards the beginning of this report (Paragraphs 16-23), but in short the existing cabins on-site do not benefit from planning permission and are unauthorised. However, the applicant has sought to regularise the unauthorised development through the submission of a planning application. Should planning permission be granted, the development would no longer be unauthorised. If planning permission is refused, the County Council will require the removal of

the cabins and will consider appropriate enforcement action, if necessary, to ensure this.

1042. The MPA strongly disapproves of the approach taken by the applicant in siting cabins without planning permission. However, if the development is an acceptable use of the land, the fact that there is currently unauthorised development is not a reason to refuse planning permission.

1043. Concern has been raised that planning conditions have been contravened by the operator at previous drilling sites within the County. This proposed development has been assessed on its own merits and not on what has taken place at other developments within the County.

1044. There is also concern that the County Council would not be able to provide 24/7 observation. The MPA has a monitoring and enforcement team and should planning permission be granted, regular monitoring visits would be undertaken to ensure that the applicant is acting in accordance with the planning permission. Whilst monitoring would not take place 24/7, the MPA would respond in the event that any breaches of condition are reported, as is the case with all development.

1045. Bassetlaw District Council has included in its reasons for objecting to the proposed development, that there has been a lack of full consultation with local cycling clubs and local residents. There have also been representations from the public that claim that the application has not been advertised properly or extensively enough.

1046. Engagement, openness and transparency in applications is encouraged by the MPA and in planning guidance. Indeed, paragraph 188 of the NPPF states "early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties. Good quality pre-application discussion enables better coordination between public and private resources and improved outcomes for the community". It is the MPA's view that the applicant has positively and proactively engaged with the public by:

a) Sending letters to around 2,000 local residents providing an overview of the development and inviting them to attend a public exhibition;

b) Placing adverts in the local media (Retford Times and Doncaster Star);

c) Setting up a dedicated Tinker Lane development web-site;

d) Holding a public exhibition;

e) Holding a meeting with local Parish Councils;

f) Setting up and facilitating a Community Liaison Group;

g) Face-to-face meetings and telephone calls with individual residents;

h) Publishing a follow-up newsletter;

i) Meetings with interested parties (Retford Probus Club, the Federation of Small Businesses and Country Landowners Association);

j) Sending information packs to County Councillors;

k) Briefing the local MP.

1047. In addition to the above, the County Council has publicised the application by means of 32 site notices, press notices and neighbour notification letters sent to the nearest occupiers. This is in accordance with the County Council's Statement of Community Involvement. The normal consultation period is 21 days, however, for this application the County Council extended public consultation to eight weeks. In addition, the County Council has updated the public on the progress of the application through its dedicated shale gas 'latest news' web-pages and through press releases. The MPA therefore considers that there has been widespread publicity about the application, contrary to the suggestion from Bassetlaw District Council.

1048. Concern has been raised that there would be a loss of agricultural land. Indeed, the proposed development is located on what is currently agricultural land and this would be lost for the duration of the development. The applicant has undertaken an agricultural land classification study, which identifies that 54% of the land (circa 1.3ha) is Grade 3a and the remainder is Grade 3b. Grade 3a falls into the Best and Most Versatile Agricultural Land (BMVAL).

1049. The NPPF seeks to protect BMVAL and states that where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality. Policy M3.16 of the Minerals Local Plan states that planning permission will only be granted for development in BMVAL where it can be demonstrated that proposals will not affect the long-term agricultural potential of the land; or there is no available alternative; or the available land that is of lower value has sustainability considerations which outweigh the agricultural land quality. Policy DM3 of the Nottinghamshire MLP Submission Draft has a similar approach to that in the MLP. There is also support for measures to ensure that soil quality is adequately protected.

1050. Overall, in the context of the wider agricultural landscape, the area of BMVAL that would be developed is not significant. In addition, the proposal is temporary and upon restoration the site would return to agricultural use. A 5-year aftercare period would ensure that it returns to full agricultural productivity. As a result the development would not affect the long term agricultural potential of the land. The development is therefore in accordance with the NPPF, Policy M3.16 of the MLP and Policy DM3 of the emerging MLP Submission Draft.

1051. Noting the height of the drill rig, consideration is given to aviation safety. Robin Hood Airport, the Civil Aviation Authority, National Air Traffic Service and Netherthorpe Airfield have been consulted. No objections have been raised. It is noted a low intensity light would be mounted on the top of the drill rig for aviation safety purposes. Robin Hood Airport, whilst not objecting, does recommend that flood lighting should not create a distraction to pilots. In considering this, it is noted that lighting would be angled downwards to minimise lighting impact on

surrounding areas. It is considered highly unlikely that there would be any significant distraction to pilots from lighting at the site.

1052. It has been suggested that the proposed development undermines Nottinghamshire's Sustainable Community Strategy 2010-2020, although objections have not identified the proposed development as conflicting with a specific part of the Strategy. The document outlines the key priorities for the County which are identified as a greener Nottinghamshire; a place where Nottinghamshire's children achieve their full potential; a safer Nottinghamshire; health and wellbeing for all; a more prosperous Nottinghamshire; and making Nottinghamshire's communities stronger. In line with the assessment of this application, the proposed development would not result in any unacceptable conflict with any of the Strategy's key priorities.

1053. It has been questioned whether the terms of the application consent would be transferable. The Section 106 and conditions attached to the planning permission would apply to any party undertaking the development.

1054. Public representations have stated that granting this application would set a precedent for future fracking applications, and granting this application would inevitably lead to more. Any future application(s) would be assessed on their own merits and do not form part of the decision-making process on this application.

1055. Concern has been raised about the applicant's links with a chemical company called INEOS, specifically what they may use shale gas for and their health and safety record. Concern has also been expressed about a Government research grant regarding fracking safety. This application is for exploratory drilling only, not production, and is assessed based on the acceptability of the development in this location, not by reference to the particular applicant's corporate associations or the appropriateness of Government grants.

1056. Objections have been made on the basis that there is a history of mining in Nottinghamshire and the County should not have to suffer more. The impact of the proposed development cumulatively with other development has been considered and there are no significant issues.

1057. Objections have stated that the County Council should not rely on other bodies and organisations to undertaken their duties without fault, as this is a new industry and the regulators lack expertise and resources. Whilst these concerns are noted, the NPPF guides planning authorities and recommends the avoidance of regulatory duplication. Case law has established that planning authorities are entitled to leave detailed judgements on appropriate matters within the purview of other statutory bodies.

1058. There is criticism that the site has been named Tinker Lane, but the site is not located on Tinker Lane. This is correct and the proposed development is located off the A634, approximately 600m north-east of Tinker Lane at its closest point. It is recognised that the applicant has referred to the proposed well 'Tinker Lane 1 Exploratory Well' and the site has colloquially become known as Tinker Lane, however, these terms are not used in the description of development or the site address details on the planning application forms.

1059. It has been questioned why three years is needed for an exploration project and it is suggested that this is too long. The construction, drilling and restoration of the site could take place in less than three years. However, a period of up to two years for evaluation has been factored in by the applicant. Should planning permission be granted, it would allow up to three years for the development, but there would be nothing to prevent the development being undertaken and the site restored in a shorter period.

1060. It has been suggested that the proposed development is not using a proven technique. The proposal is for an exploratory borehole. Exploratory boreholes have been drilled around the UK for decades, including in Nottinghamshire. This is not unproven technology.

1061. It has been suggested that the only reason this well is being drilled is to show the licensing authority that Dart Energy are prospecting so that their licence is not lost. The determination of the application is based on the acceptability of the development. Whether or not the applicant has to demonstrate that they are prospecting in line with their licence requirement is not a planning consideration.

1062. A suggestion has been made that the applicant has a responsible person on site 24/7 who can liaise with local people and respond effectively should issues arise. During the drilling period there would be a 24/7 presence on site, but given the acceptability of the development it is difficult to justify a planning condition to control this. Nevertheless, such a measure would be good practice and contribute to enhancing community relations. As such, it is recommended that an informative is added to any planning permission recommending this.

1063. Representations have been received from the public stating that Councillors making the decision are not well enough informed. A number of shale gas specific events have been organised for, and attended by, Members of the Planning and Licensing Committee, including two events organised by the Planning Advisory Service and a regulators' event involving the Oil and Gas Authority, the Health and Safety Executive, the Environment Agency and Public Health England. This has provided Members with a thorough background to shale gas and associated development. Notwithstanding this, the relevant information on which Members will make a decision on the application is contained within this committee report.

1064. There is concern about the Government's 'ad hoc' approach to energy generation development and it is suggested that applications such as this should be a national Government decision. The proposed development is being determined at a local level and in line with Government energy policy at this time.

1065. A representation has highlighted the Integrated Management System (IMS) manual which the applicant has submitted with the planning application. The IMS sets the company's standards and procedures which they are committed to uphold. However, concern is raised because Dart/IGas are a small company and many aspects would be contracted out and provided by consultants (indeed, the planning application has been submitted by a consultancy – SLR). The concern relates to the fact that the IMS states that it does not strictly apply to contractors. Therefore, it is suggested that the County Council demands that

the assessment procedures that Dart apply to their major contractors meets the aspirations of Dart's own IMS and that NCC are given a copy of that assessment otherwise all assurances that relate to the IMS are worthless.

1066. The fact that the IMS does not strictly apply to contractors is noted, although it is also noted that the IMS states that where IGas works in partnership with other operators, the scope of the project that relates to IGas will comply with the intent of the IGas IMS.

1067. In any event, the IMS is an internal document for the benefit of the company itself, and it has not been submitted to meet a requirement under planning or Environment Impact Assessment regulations. Where the planning authority deems controls to be necessary, these would form conditions attached to the planning permission and/or part of the Section 106 Agreement and will apply to all parties undertaking operations whether that is Dart Energy, IGas or any other third party contractor.

1068. Concern has been raised about an inconsistency between drawings submitted as part of the planning application and that submitted as part of the Environmental Permit application, even though the drawings are given the same reference number.

1069. The drawing referred to is Drawing Ref: TL9/4 'Generalised Vertical Section and Proposed Exploratory Well Construction Details'. Although both drawings were labelled as the same version of the drawing, the one submitted as part of the planning application refers to a total depth of 3,300m (as stated in the applicant's description of development) and the drawing submitted as part of the Environmental Permit application refers to a total depth of 1,810m. This discrepancy is discussed in the Environment Permit decision document which states:

"*The discrepancy was due to the operator applying first for the planning permission when the depth of the wellbore was not finalised, therefore a maximum depth of 3300m was indicated to allow for full range.*

Prior to the submission of the Mining Waste permit the target depth was finalised at 1810m.

The operator submitted a new version of the drawing referenced as version 2."

1070. No change has been made to the planning application to reflect the fact that the applicant intends to drill to 1,810m rather than 3,330m. The planning application has been assessed on the basis that the development involves drilling to a maximum depth of 3,300m, and is deemed acceptable on this basis. It is entirely acceptable for the operator to drill to a depth shallower than that identified as the maximum depth to which they would drill. In this respect, no change to the planning application is necessary.

1071. There has been some support for the development with a representation referring to the use of safe and established technology. The MPA is satisfied that, with suitable controls in place, the development is safe and acceptable.

1072. Many of the public representations to this application have objected for reasons linked to fracking, as set out in the public representations section of this report. This includes concerns about the long-term plans for the well site; how many wells may be drilled in the future; and how much fracking may be required. It has been stated that it is disingenuous not to consider the longer term consequences of fracking as the proposed development foreshadows commercial hydraulic fracking for gas extraction. It is also claimed that neither Dart, nor IGas has much experience of extracting shale gas. Fracking forms no part of this application and the proposals have been assessed on their own merits. No further consideration is given to such comments.

1073. Severn Trent Water has not objected to the application but recommends that two informatives be attached to any permission granted regarding the use or reuse of any sewer connections, and the protection of any public sewers in the area. These matters are considered acceptable and would be attached to any planning permission granted as informatives.

Conclusions

1074. The proposed development is a hydrocarbon well site for the drilling of an exploratory hydrocarbon well. Planning permission is sought for a temporary period of three years.

1075. The County Council has received a substantial number of objections to the proposed development. At the time of writing a total of 797 representations have been received, with 793 objecting to the proposed development and 4 in support. In addition, there has been a petition objecting to the proposal with 1063 signatures. In addition, a number of local and national groups have objected to the proposal. All representations have been taken into account in coming to the recommendation.

1076. Policy M5.1 (Mineral Exploration) of the Nottinghamshire Minerals Local Plan (MLP) is the key policy against which the development is assessed. The policy states that mineral exploration will be permitted subject to satisfactory environmental, amenity and reclamation safeguards. Policy DM18 (Mineral Exploration) of the emerging Nottinghamshire Minerals Local Plan submission draft (eMLP) reiterates this position. In addition Policy MP12 (Hydrocarbon Minerals) of the Nottinghamshire eMLP supports hydrocarbon exploration where impacts on the environment or residential amenity are not unacceptable. The safeguards in place have been assessed as sufficient and the impacts would not be unacceptable. The proposed development is in accordance with these policies.

1077. The National Planning Policy Framework (NPPF) gives great weight to the benefits of mineral extraction, including to the economy. Planning Practice Guidance (PPG) identifies a pressing need to establish, through exploratory drilling, whether or not there are sufficient recoverable quantities of unconventional hydrocarbons, such as shale gas, present to facilitate economically viable full scale production.

1078. Policy M5.2 (Deep Boreholes in Sensitive Areas) of the Nottinghamshire MLP relates to exploratory deep boreholes located in environmentally sensitive

areas. The proposal is not in an environmentally sensitive area and therefore development is not contrary to Policy M5.2.

1079. The proposal would not use an unnecessary amount of mineral. There would be environmental impacts associated with the development, however, these have been assessed as being acceptable. The proposed development would involve mitigation measures to ensure sensitive working and the site would be restored to its pre-development state. The development would not have any significant impact on nature conservation areas. Working practices and restoration of the site would return the site to agricultural use and there would be no unnecessary sterilisation of mineral resources. As such, the development would be in accordance with the sustainable development objectives of Policy M2.1 (Sustainable Development Objectives) of the MLP.

1080. Sufficient information has been submitted to enable the MPA to come to a balanced assessment of all relevant factors, in line with Policy M3.1 (Information in Support of Planning Applications) of the MLP.

1081. The proposed development would not unduly affect any other underground mineral resources within the County and is therefore in accordance with Policy M13.6 (Boreholes – Conflicts with other Underground Minerals) of the MLP.

1082. Policy DM1 (Economic Development in the Countryside) of the Bassetlaw Core Strategy (BCS) relates to economic development in the countryside. The design of the development is functional and there is little that can reasonably be done to minimise its visual impact. The scale, design and form of the proposal is such that it allows the necessary drilling to be undertaken and there is little opportunity for architectural merit. The proposed development would not create significant, or materially exacerbate existing, environmental or highway safety problems.

1083. Traffic associated with the proposed development would not have an unacceptable impact on the surrounding highways network and measures would be put in place to prevent traffic from using unacceptable routes. In addition mitigation measures through the use of conditions would control mud and deleterious material from contaminating the highway. Given the absence of mineral extraction there is little opportunity for bulk transport of minerals using non-road methods. The proposed development is in accordance with Policies M3.12 (Highways Safety and Protection), M3.13 (Vehicular Movements), M3.14 (Vehicular Routing) and M3.15 (Bulk Transport of Minerals) of the Nottinghamshire MLP; and Policy DM9 (Highways Safety and Vehicle Movements/Routeing) of the eMLP.

1084. In addition to the above, the NPPF makes it clear that development should only be prevented or refused on transport grounds where the residual cumulative impacts of the development are severe. The cumulative transport impacts of the development are not severe.

1085. In order to ensure that vehicles would not use unapproved routes, a Section 106 legal agreement would be used to secure a routeing agreement. In addition, a driver code of conduct would be secured through the use of a Section 106 agreement to ensure the appropriate use of roads by all drivers. This approach

is in accordance with Policy M3.14 (Vehicular Routeing) of the Nottinghamshire MLP and DM11 (Planning Obligations) of the eMLP.

1086. There would be a degree of harm to heritage assets, specifically the setting of designated heritage assets at Bishopfield House, Mattersey Hill, the Mantles, Torworth and Barnby Moor. The impact at each of these locations is for a duration of four months and the significance has been assessed as very slight harm. The NPPF requires any harm to designated heritage assets to have clear and convincing justification. In this case, the justification is great weight given to mineral extraction in the NPPF and the "pressing need" to establish whether or not there are sufficient recoverable quantities of unconventional hydrocarbons as set out in the PPG.

1087. It is also noted that there would be moderate and permanent harm to the field system ditch and very slight harm to the overall field system, which is widespread through the study area. The loss of a small part of the brickwork plan field system which is widespread through the study area and is of medium significance is not significant enough to prevent the development.

1088. Whilst the harm to the setting of a heritage asset and ditch system is noted, in light of the above the proposed development would not be unacceptable and is in accordance with Policies M3.24 (Archaeology), M3.25 (Listed Buildings, Conservation Areas, Historic Battlefields, and Historic Parks and Gardens) of the Nottinghamshire MLP; and Policy DM6 (Historic Environment) of the eMLP.

1089. Policy DM8 (The Historic Environment) of the BCS identifies a presumption against development that would be detrimental to the significance of a heritage asset. The proposal is in conflict with this policy by way of impact on the setting of a heritage asset. However, this policy does not allow for a balancing of significance verses harm or for the consideration of a clear and convincing justification, in line with Paragraph 132 of the NPPF. As such, reduced weight is attributed to this policy in line with the guidance set out in paragraph 215 of the NPPF.

1090. Policy M3.5 (Noise) of the Nottinghamshire MLP states that development will only be granted where noise emissions outside of the boundary of the mineral workings do not exceed acceptable levels; and recommends the use of conditions. Policy DM1 (Protecting Local Amenity) of the eMLP supports minerals development where it can be demonstrated that adverse impacts on amenity, including noise, can be avoided and/or adequately mitigated. In addition, the PPG sets out specific noise criteria for minerals operations. It is noted that night time noise levels would be exceeded at two of the residential receptors (Beech Farm and Jubilee Farm). However, the existing baseline noise already exceeds night time noise criteria at these locations, and the additional noise from the proposed development is considered imperceptible. Noise at other times is within acceptable limits. In light of the above, subject to conditions, the proposed development is in accordance with Policy M3.5 of the Nottinghamshire MLP and DM1 of the Nottinghamshire eMLP.

1091. There are no policies in the development plan specifically in relation to vibration (other than for blasting). The proposed development does not involve blasting and there would be no perceptible vibration from drilling activities. It is noted that

large volumes of HGV traffic can have an adverse impact in terms of vibration. However, the proposed development would result in an average of 36 HGV movements, at its peak, over a 10 hour working day (3-4 per hour). This level of HGV traffic would not result in unacceptable adverse vibration.

1092. There would be a degree of visual impact from lighting, particularly during drilling operations. However, the light levels reaching residential properties would be secured by condition to ensure they are within acceptable levels. The development would be in accordance with the lighting aspect of Policy DM1 (Protecting Local Amenity) of the eMLP.

1093. The substantial drill rig would have a visual impact (including from lighting), however, given its relatively short duration of nine months, the impact is not considered to be unacceptable and is in accordance with Policy M3.3 (Visual Intrusion) of the Nottinghamshire MLP. Given the nature of the drill rig, little can be done to screen the taller elements of the development, however, hedge management may provide some additional screening for the lower elements of the development, in line with Policy M3.4 (Screening) of the Nottinghamshire MLP.

1094. Impact on landscape character has been considered against Policies M3.22 (Landscape Character) of the Nottinghamshire MLP and DM1 (Protecting Local Amenity) of the Nottinghamshire eMLP. The temporary nature of the development is an ameliorative measure which reduces the impact to an acceptable level. In addition, the temporary and reversible nature of the development means that it is not contrary to the landscape element of Policy DM9 (Green Infrastructure; Biodiversity & Geodiveristy; Landscape; Open Space & Sports Facilities) of the BCS.

1095. With regard to available alternatives it has to be recognised that wherever a development such as this is located there would almost certainly be landscape impacts as a result of the height of the drill rig. In addition, the need for the proposed development and its temporary nature are factors which allow the development to meet Policy DM5 (Landscape Character) of the Nottinghamshire eMLP.

1096. The proposed development would not have any significant impact on designated ecological sites, protected species or habitat. As such, the development is in accordance with Paragraph 118 of the NPPF; Policy M3.17 (Biodiversity), M3.19 (Sites of Special Scientific Interest); Policy M3.20 (Regional and Local Designated Sites) of the Nottinghamshire Minerals Local Plan; Section B of Policy DM9 of the Bassetlaw Core Strategy; and Policy DM4 (Protection and Enhancement of Biodiversity and Geodiversity) of the eMLP.

1097. The proposed development would not have an unacceptable risk to ground water or surface water flows, levels or quality. The development is in accordance with Policies M3.8 (Water Environment) of the Nottinghamshire MLP and the relevant section of DM2 (Water Environment and Flood Risk) of the eMLP.

1098. The proposed development is in a low flood risk area. It would not cause an unacceptable impact on flood flows and flood storage capacity, or on the

integrity or function of flood defences and local land drainage systems. In addition, the development would lead to no material increase in flood risks to communities; flood risk reduction measures would be incorporated in the design of the development; and the use of Sustainable Drainage Systems is not relevant to this proposal given the need for a sealed drainage system. As such, the development meets the relevant requirements of Policy M3.9 (Flooding) of the MLP; Policy DM12 (Flood Risk, Sewerage and Drainage) of the BCS; and Policies SP4 (Climate Change) and DM2 (Water Resources and Flood Risk) of the eMLP.

1099. Subject to the implementation of the dust management plan the proposed development would not result in unacceptable impacts. Paragraph 144 of the NPPF also recommends that unavoidable dust and particle emissions are controlled, mitigated or removed at source. The implementation of the dust management plan would assist with meeting this requirement. Emission impacts associated with vehicles, plant and equipment have been assessed as acceptable. The development is in accordance with Policy M3.7 (Dust) of the Nottinghamshire MLP; and Policy DM1 (Protecting Local Amenity) of the eMLP.

1100. The development would not result in any direct impact on public rights of way and therefore Policy M3.26 (Public Access) of the Nottinghamshire MLP does not apply. Policy DM13 (Sustainable Transport) of the BCS expects development proposals to provide linkages or develop new footways, cycle paths and bridleways, however, this policy is not considered relevant. Paragraph 75 of the NPPF states that planning policies should protect and enhance public rights of way and access. Policy DM7 of the eMLP supports proposals where it can be demonstrated that there would not be an unacceptable impact on the existing rights of way network. There would be no direct impact on any rights of way. There would be some adverse visual impact, however, such impacts would be temporary and are not considered to be unacceptable.

1101. The proposed development is not judged to have a significant adverse socio-economic impact. There may be some impact on leisure and tourism arising from visual impact but it is not considered significant and would be temporary. There would be no actual material impacts on business operations from the development, and whilst there may be impacts arising from perception this is not quantifiable and specific evidence has not been provided. Some jobs would be created and there may be some economic benefit to local business through supply chain spend and from the presence of workers, although this spend is unlikely to be significant and would be for a temporary period. Nevertheless, the NPPF is clear that great weight should be given to this.

1102. The proposed development has been assessed to be in accordance with the public health aspects of relevant policies and the NPPF.

1103. The specific contribution of climate change emissions has not been assessed by the applicant, however, the MPA is of the view that emissions would be generally small and limited primarily to those from vehicles and drilling equipment. There is no hydraulic fracturing (appraisal or production) as part of this application and therefore there would be no emissions relating to this. This

position is supported by the Committee on Climate Change document on 'The compatibility of the UK onshore petroleum with meeting the UK's carbon budgets'. As such, the proposal is not considered to run contrary to the NPPF and the environmental role that planning plays, as set out in Paragraph 7.

1104. There are other potential developments in the surrounding area with which cumulative impacts are possible, however, such impacts would not be significant. As such, the development is in accordance with Policy M3.27 (Cumulative Impacts) of the Nottinghamshire MLP and Policy DM8 (Cumulative Impact) of the Nottinghamshire eMLP.

1105. Following completion of the development the site would be restored back to its original condition, in line with Policy M13.7 of the MLP and Paragraph 144 of the NPPF.

1106. In light of the above, there is support for the principle of exploratory drilling in the Nottinghamshire Minerals Local Plan and emerging Nottinghamshire Minerals Local Plan. There is also considerable support for the development in the National Planning Policy Framework and Planning Practice Guidance.

1107. Consideration has been given to impacts relating to traffic and transport; heritage; noise and vibration; ecology; lighting; visual impact, landscape character; ground and surface water; contamination; flood risk; air quality; rights of way; socio-economic impacts; public health; climate change and cumulative impacts. All have been assessed as being acceptable, or as not being significant and outweighed by the great weight and support that is given to this type of development.

1108. In line with the above, the proposed development is in accordance with the Development Plan and there are no material considerations which indicate that a decision should be made other than in accordance with the policies within the Development Plan. Therefore, subject to the conditions set out in Appendix 1, which would ensure that major adverse effects are avoided, reduced and offset, it is recommended that planning permission is granted.

Other Options Considered

1109. The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (Schedule 4, Part I, Paragraph 2) requires Environmental Statements to include an outline of the main alternatives studied by the applicant and an indication of the reasons for the choice made, taking into account the environmental effects.

1110. The applicant has undertaken a site assessment of alternatives as part of the Environmental Statement and within this they have outlined the methodology for choosing the site. The applicant states that the Tinker Lane site has been assessed as the main choice as it is directly accessible from an A-class road; it is not located within any statutory ecological designations; the site is significantly in excess of 200m from residential and other sensitive properties; and the site is not crossed by a public right of way.

1111. A total of four drill rigs have been considered in the Environmental Statement, these include the Bolden 92 (BDF Rig 92), the Deutag Bentec T 208, the Bentec T-49 and the PR Marriot Drillmec HH220. The applicant states that it is not commercially possible at this stage in the project to state which drilling rig would be used as this would be subject to planning permission being granted and drill rig availability at the time.

Statutory and Policy Implications

1112. This report has been compiled after consideration of implications in respect of finance, the public sector equality duty, human resources, crime and disorder, human rights, the safeguarding of children, sustainability and the environment, and those using the service and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

Financial Implications

1113. Any planning permission granted would be subject to a Section 106 Agreement. Reasonable legal costs incurred by the County Council associated with drawing up and/or reviewing this agreement shall be met by the applicant. This is standard practice.

Crime and Disorder Implications

1114. The development would be sited within a compound which includes dual security fencing so that the development would have primary and secondary security fencing. In addition the site would have CCTV, security lighting and security personnel.

1115. Exploratory drilling and hydrocarbon development has resulted in protests, unauthorised encampments and anti-social behaviour in the vicinity of the development at other locations in the UK, including in Nottinghamshire. In granting planning permission there is a risk that similar situations could arise. It is fundamental to highlight that this should not be a consideration in determining the application, as set out in case law.

Human Rights Implications

1116. Representations have been received stating the proposed development would contravene human rights. It has been stated that the development would compromise human rights to life, security of persons and bodily integrity, rights to health, reliable and supportive environment and rights to clean water.

1117. Relevant issues arising out of consideration of the Human Rights Act have been assessed. Rights under Article 8 (Right to Respect for Private and Family Life) have been considered and have the potential to be affected due to noise, lighting and air quality. However, these impacts are considered to be within the limits of acceptability and are outweighed by the benefits of the proposal. Members need to consider whether the benefits outweigh the potential impacts

and reference should be made to the Observations section above in this consideration.

1118. Article 1 of the First Protocol (Protection of Property) and Article 6.1 (Right to a Fair Trial) have also been considered. In this case, however, there are no impacts of any substance and therefore no interference with rights safeguarded under these articles.

Implications for Sustainability and the Environment

1119. The proposed development would have benefits in helping to establish, through exploratory drilling, whether or not there are sufficient recoverable quantities of hydrocarbons present to facilitate economically viable full scale production. There would be no significant impact on any designated ecological sites.

Service User, Equalities and Safeguarding of Children Implications

1120. No implications.

Statement of Positive and Proactive Engagement

1121. In determining this application the Minerals Planning Authority has worked positively and proactively with the applicant by entering into pre-application discussions; scoping the application; and encouraging pre-application community engagement which the applicant complied with by setting up and facilitating a Community Liaison Group; distributing letters; creating a dedicated website; undertaking public exhibitions and corresponding with County and Parish Councillors, MPs, community and business groups, and statutory consultees. The proposals and the content of the Environmental Statement have been assessed against relevant Development Plan policies, the National Planning Policy Framework and Planning Practice Guidance and European Regulations. The Minerals Planning Authority has identified all material considerations; forwarded relevant consultation responses that may have been received in a timely manner; considered any valid representations received; liaised with consultees to resolve issues and progressed towards a determination of the application. Issues of clarification have been raised with the applicant, such as impacts in relation to ecology and hydrogeology. The applicant has been given advance sight of the draft planning conditions and the Minerals Planning Authority has also engaged positively in discussing the preparation of the draft s106 Agreement. This approach has been in accordance with the requirement set out in the National Planning Policy Framework.

RECOMMENDATIONS

1122. It is RECOMMENDED that the Corporate Director – Place be instructed to enter into a legal agreement under Section 106 of the Town and Country Planning Act 1990 (as amended) to secure:

a) A designated route for all HGVs using the site; and

b) A driver code of conduct; and

c) A financial bond to underpin the surface level restoration of the site; and

d) The establishment and continuation of a liaison group for the life of the development.

1123. It is FURTHER RECOMMENDED that subject to the completion of the legal agreement before the 21st May 2017 or another date which may be agreed by the Team Manager Development Management in consultation with the Chairman and the Vice Chairman, the Corporate Director – Place be authorised to grant planning permission for the above development subject to the conditions set out in Appendix 1 of this report. In the event that the legal agreement is not signed by the 21st May 2017, or within any subsequent extension of decision time agreed with the Minerals Planning Authority, it is RECOMMENDED that the Corporate Director – Place be authorised to refuse planning permission on the grounds that the development fails to provide for the measures identified in the Heads of Terms of the Section 106 legal agreement within a reasonable period of time.

ADRIAN SMITH

Corporate Director – Place

Constitutional Comments

Planning and Licensing Committee is the appropriate body to consider the contents of this report.

[RHC 16/2/2017]

Comments of the Service Director - Finance

There are no specific financial implications arising directly from the report.

[RWK 20/02/2017]

Background Papers Available for Inspection

The application file available for public inspection by virtue of the Local Government (Access to Information) Act 1985.

Electoral Division(s) and Member(s) Affected

Misson - Councillor Liz Yates

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