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**IGAS ENERGY PLC** 

STORRINGTON OILWELL SITE, PULBOROUGH ROAD, COOTHAM, STORRINGTO SUSSEX, RH20 4HP

INDO TO ALLOW CEMPER 2032 SECTION 73 APPLICATION TO VARY CONDITION NO 3 APPLICATION REFERENCE WSCC/050/13/SR TO **PRODUCTION FROM THE SITE UNTIL 31 DECEM** 

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### **Document Control**

Project:

EXTENSION OF LIFE, STORRINGTON OILWELL SITE, PULBOROUGH ROAD

Client:

**IGAS ENERGY PLC** 

Job Number:

A104205

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Signed

Issue

Date

Status

1

25-08-2017

For Client Review

2

04-09-2017

For submission to WSCC

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### September 2017



September 2017

Page No.

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West Sussex County Council

- Decision Notice WSCC/050/13/SR
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### 1.0 INTRODUCTION

- 1.1 WYG has been instructed by IGas Energy PLC ('the Applicant') to submit a planning application under Section 73 of the Town and Country Planning Act 1990, for the proposed continuation of conventional mineral extraction operations, for a further period of 15 years (to December 2032) at the Storrington site.
- 1.2 West Sussex County Council is the mineral planning authority for the Storrington Oilwell site, which operates under planning consent WSCC/050/13/SR.
- 1.3 The current conventional oil operations at the site are of a temporary nature and existing planning conditions require cessation of operations and restoration of the site by the 31<sup>st</sup> December 2017 or within 6 months of the completion of extraction, whichever is the sooner. As there is a remaining mineral reserve in the reservoir, an application is hereby submitted that seeks to extend the temporary life of the site for a further temporary period of 15 years.
- 1.4 Current operations and those hereby proposed to continue are conventional extraction methods. The proposal does not introduce hydraulic fracturing as a means of stimulation.
- 1.5 As such, this application seeks the variation of conditions 3 and 4 of consent WSCC/050/13/SR, which currently require the cessation of operations, followed by site restoration and the removal of all plant and machinery from the site, respectively, by 31<sup>st</sup> December 2017.
- 1.6 In addition to this Planning Statement, the Application comprises the following documents:
  - Application Form and Certificates;
  - Application Fee (£195);
  - Site Location Plan;
  - Site Layout Plan;
  - Noise Assessment;
  - Decision Notice for consent WSCC/050/13/SR
- 1.7 The application is submitted following a number of other similar extension applications, recently approved on IGas sites in surrounding authority areas, including South Downs National Park Authority and Hampshire County Council. In all these cases, it was considered

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that IGas operations had resulted in no environmental impacts and as such, the continuation of such operations would have no material impact and would be in the national interest.

- 1.8 There are reserves remaining in the Storrington Reservoir and it is in the national interest that extraction be allowed to continue, as it has without issue for over 20 years. Production levels have diminished since the oilfield commenced in the 1990's but the field still produces a steady 46 barrels of oil per day (bopd). As such an application is hereby submitted that seeks to extend the temporary life of the site for a further temporary period of 15 years.
- extensi Lts will continue The proposal hereby submitted does not include any extension or intensification of activity 1.9 at the site and any potential environmental impacts will continue to be mitigated as they are

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### 2.0 SITE LOCATION AND DESCRIPTION

2.1 The Storrington Oilwell site is located on the eastern side of the A283 Pulborough Road, to the northwest of Cootham and west of Storrington. The wellsite extends to some 2.8 hectares in area, forming a trapezoid shape roughly parallel to A283. The location of the facility is shown at Figure 1 as follows:

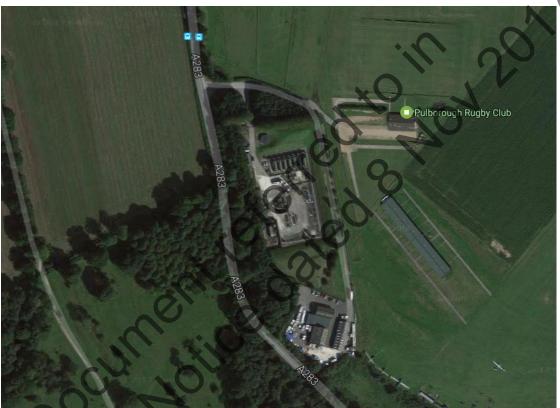


- Source: Google Maps
- 2.2 The A283 forms the eastern boundary of the National Park, which extends to the west of the road in the form of agricultural fields and woodland. Further to the southwest lies Parham House and Gardens, set in extensive parkland (SSSI and Grade 2 listed Park and Gardens).
- 2.3 Dense, mature hedgerow and woodland is present either side of the A283 in this location, ensuring no views into or out of the oilwell site, from the National Park or the road.
- 2.4 An access road runs from the A283, along the northern boundary and down the eastern boundary, providing access to the oilwell site, Pulborough Rugby Club and some commercial buildings forming the wider part of Charity Farm.
- 2.5 The rugby club and pitches lie to the northeast of the site, Charity Farm lies to the south and Parham Airfield lies to the east, from which Southdown Gliding Club operate.

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2.6 The oilwell site is bunded on the northern, eastern and southern sides, with the aforementioned dense vegetation along the western boundary. A dense area of woodland has been planted at the northern end, between the boundary fence and access road, and additional trees have been planted along the eastern boundary too, fully enclosing the site. the site layout is as follows:

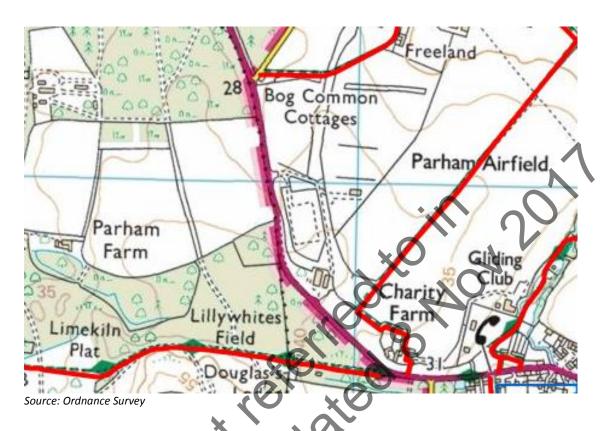


Source: Google Maps

- 2.7 The nearest residential properties are well separated from the application site, with the nearest being Charity Farmhouse, 330m to the southeast, Bog Common Cottages, 320m to the north and Douglas's Lodge, within the grounds of Parham House and Gardens, some 300m to the south.
- 2.8 A number of public rights of way are active within the vicinity of the site, the closest (Footpath 2636) being a footpath which crosses the airfield to the east. Footpath 2637 runs to the south of the wellsite and to the north of Charity Farm also in a north easterly direction across the airfield. Public rights of way in the area are indicated on the following map, with footpaths identified in red, bridleways in purple and restricted byways in green.

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2.9 The wellsite contains a sealed platform containing three wells with 'nodding donkeys' and one well for the re-injection of water. The pad also contains various equipment including a fire water tank, water injection pump, processing plant (for gas separation and treatment), seven horizontal storage tanks (for oil and water), substations and switch rooms, and a five meter flare. There is a site office alongside the entrance and a workshop beyond this. The perimeter of the wellsite is secured by a 6ft high mesh security fence. The site layout is shown at Appendix A.

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### 3.0 PLANNING HISTORY

- 3.1 Initial work began at the site in 1985, when planning consent was granted for exploratory boreholes. Further planning consent was achieved in 1986 for the appraisal of hydrocarbons at the site and the drilling of additional boreholes. Further to this, additional consents have been achieved to develop the site for the production of hydrocarbons, set out as follows:
  - SR/1/94: Retention and further development of oilfield for production purposes. Granted 15 December 1994, with an expiry date of 31 December 2010.
  - SR/68/96: Variation of condition 3 of SR/1/94 to authorise the development of the site to an amended design and the production of oil and gas to an amended phasing of operation. Granted by Committee on 8 April 1997, with an expiry date of 31 December 2012.
  - SR/88/98: Installation of additional ground flare of similar design and construction as existing flare. Granted by Committee on 26 March 1999, with an expiry date of 31 December 2012. The flare to which this permission relates has now been removed.
  - SR/57/00: Two gas turbine generators, switch room, transformer and associated equipment. Granted by Committee on 8 November 2000, with an expiry date of 31 December 2012. The generators to which this permission relates were not installed.
  - WSCC/050/13/SR: Retention of existing Storrington Wellsite, including plant and equipment and to continue to produce hydrocarbons for a further period of up to 5 years. Granted on 9 October 2013, with an expiry date of 31 December 2017.
- 3.2 The most recent consent extended the life of the oilfield by 5 years, until the end of this year. This was a retrospective application and comprised only a very minimal extension in life, insufficient to make a meaningful impact on the significant resources still accessible within the reservoir.

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### 4.0 PROPOSED DEVELOPMENT

4.1 The proposed development for this Section 73 variation of condition application can be described as:

'Section 73 application for the variation of planning conditions 3 and 4 of planning permission WSCC/050/13/SR to allow the continuation of oil production from the site until 31 December 2032.'

- 4.2 This s73 Variation of condition application seeks to extend the temporary planning permission term granted under Condition No 3 of 2013 consent WSCC/050/13/SR.
- 4.3 Condition 3 currently reads:

'All operations hereby approved under this permission, including the restoration of the site (but not its aftercare), shall cease by 31 December 2017 or within six (6) months of the completion of production of oil and gos from the site, whichever is the sooner.'

4.4 The purpose of this condition is to ensure that works cease when the reservoir is exhausted and that the restoration of the site then occurs. This application proposes amending the wording of condition 3 to the following:

'All operations hereby approved under this permission, including the restoration of the site (but not its aftercare), shall cease by 31 December 2032 or within six (6) months of the completion of production of oil and gas from the site, whichever is the sooner.'

4.5 Condition No 4 currently reads:

All structures, plant and machinery, both fixed or otherwise and any other engineering works approved by this application (including any hard surface constructed for any purpose) shall be removed from the application site by 31 December 2017 or within six (6) months of the completion of production of oil and gas from the site, whichever is the sooner and the site shall be restored in accordance with the scheme approved under condition 5. Notwithstanding this condition, any plant or equipment required to make the site safe to a specification as may be required by Borehole Sites and Operations Regulations 1995 and Offshore

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Installations and Wells (Design and Construction) Regulations 1996 (as amended) may remain in position for that purpose only.'

- 4.6 The purpose of the condition is to ensure that all physical development is removed from the site to enable its full restoration by the end of 2017. The application proposes the amendment to the wording of Condition No 4 to:
  - 'All structures, plant and machinery, both fixed or otherwise and any other engineering works approved by this application (including any hard surface constructed for any purpose) shall be removed from the application site by 31 December 2032 or within six (6) months of the completion of production of oil and gas from the site, whichever is the sooner and the site shall be restored in accordance with the scheme approved under condition 5. Notwithstanding this condition, any plant or equipment required to make the site safe to a specification as may be required by Borehole Sites and Operations Regulations 1995 and Offshore Installations and Wells (Design and Construction) Regulations 1996 (as amended) may remain in position for that purpose only.'
- 4.7 The section 73 permission hereby sought will be a new permission, superseding consent WSCC/050/13/SR and will include all other conditions attached to the earlier consent.
- 4.8 Notwithstanding this, since the 2013 consent, a number of the conditions have been discharged, thus the wording of these should also be amended to reflect this, requiring development to occur in accordance with these approved details, rather than requiring such details to be submitted for approval.
- 4.9 Conditions 5 (scheme of restoration and aftercare) and 18 (landscaping scheme) were both discharged through consent WSCC/050/13/SR/DOC1 and the conditions should be amended accordingly to acknowledge this.
- 4.10 The proposal does not include any change to or intensification of the operations that have been ongoing at the site for many years and which have already been permitted at the site.

  No change to the site size or equipment located within the site is proposed.
- 4.11 Importantly, it proposes the ongoing conventional extraction of oil and gas at the site. it does not propose hydraulic fracturing at the site.

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4.12 The application is supported by a recent noise assessment, submitted in compliance with the methodology approved through condition 6 of the earlier consent, demonstrating that the noise environment at the site is still compliant with the levels as set out in condition 7. It is noted that operations have continued at the site for many years without issue or complaint.



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### 5.0 PLANNING POLICY

- 5.1 This section considers the planning policies and legislative framework, which together provide the context against which the application will be considered. It identifies those national and local policies which are contained within statements of Government policy or the development plan for the area, or which otherwise may be material to the consideration of the development proposed.
- 5.2 The grant of planning permission WSCC/050/13/SR established the principle of ongoing extraction at the site and its acceptability in planning policy terms.
- 5.3 The application site lies within the jurisdiction of West Sussex County Council, thus the relevant local policy context is contained within the Minerals Local Plan and emerging policy within the New Minerals Local Plan.

### **NATIONAL POLICY**

### National Planning Policy Framework (March 2012)

- 5.4 The National Planning Policy Framework (NPPF) came into force on 27 March 2012. It sets out the Government's planning policies for England and how these are expected to be applied.
- Taken together, these policies articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations.
- The Framework replaced a variety of Mineral Planning Statements and this review of the NPPF outlines the various policies that are considered relevant in the context of the proposed development, subject of this application.
- 5.7 The NPPF contains a number of general policies of relevance. It introduces a presumption in favour of sustainable development. With regard to decision making on applications, Paragraph 14 states that this means 'approving proposals that accord with the development plan'.
- 5.8 Paragraph 14, of the NPPF, states that at the heart of the Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking.

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5.9 One of the key objectives of the NPPF is to set a planning framework for the building of a strong, competitive economy, in order to create jobs and prosperity. Paragraph 19 states as follows:

"The Government is committed to ensuring that the planning system does everything it can to support sustainable economic growth. Therefore significant weight should be placed on the need to support economic growth through the planning system."

- 5.10 Section 13 of the NPPF is titled 'Facilitating the Sustainable Use of Minerals'. Paragraph 142 identifies that minerals are essential to support sustainable economic growth and quality of life. It must be ensured that there is a sufficient supply of these resources. There is also the recognition that minerals can only be worked where they are found and that best use of them should be made.
- 5.11 Paragraph 144 states that Local Planning Authorities should give great weight to the benefits of mineral extraction, including to the economy, whilst ensuring no unacceptable adverse impacts on the historic and natural environment.
- 5.12 Paragraph 147 concerns oil and gas development specifically and aims at removing constraints on production and processing within license areas.

### **National Planning Practice Guidance**

- 5.13 The NPPG provides an easily accessible online Government resource, detailing all aspects of planning practice and policy. It includes guidance on oil and gas extraction.
- 5.14 The NPPG states that minerals make an essential contribution to the country's prosperity and quality of life and reiterates that minerals can only be worked where they naturally occur, thus limiting the location options for extraction facilities. It is therefore necessary to protect mineral reserves and also maximise production from existing developed sites.
- 5.15 The guidance provides a reminder that the working of minerals is a temporary use of land and that environmental effects of the operations can be mitigated and the land restored to its former condition, following cessation of extraction.
- 5.16 The guidance details the importance of mineral safeguarding, ensuring that non-mineral related development does not needlessly prevent the future extraction of mineral resources.

  Whilst no alternative non-mineral development is proposed for the site, the cessation of

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production and restoration of the site, whilst it is still active, would have the effect of sterilising the substantial mineral resources still present.

### **DECC Annual Energy Statement (2014)**

- 5.17 Under the previous coalition government, the Department of Energy and Climate Change (DECC) produced an annual report to be presented to Parliament, setting out the Governments progress against its energy policies. The most recent document is the 2014 publication.
- 5.18 Whilst DECC and BIS (Department of Business, Innovation & Skills) have now been merged and the 2014 Statement is fairly dated, its content is still pertinent to oil and gas proposals today.
- 5.19 The provision of energy security is seen as one of the three primary objectives of the Governments energy policy.
- 5.20 3.3% of the United Kingdom's gross domestic product came from the energy industry, predominantly from oil and gas extraction.
- 5.21 Paragraph 9, on 'Energy Security' states that 'energy consumers need to have access to reliable and secure energy supplies. Production of gas and oil from UK's own reserves has been declining since 1999, and since 2004 the UK has been a net importer of energy'.
- 5.22 Policy aims to protect the country from volatile global fuel prices and seeks the maximisation of economic production of domestic oil and gas reserves, minimising disruption to domestic energy supply.
- 5.23 The three priorities of the Governments energy policy are as follows:
  - supporting consumers and keeping energy bills down;
  - supporting investment in the UK's energy infrastructure; and
  - promoting action in the EU and internationally to maintain energy security and mitigate dangerous climate change

### **LOCAL POLICY**

5.24 The relevant local planning policy framework is made up of policies contained within the saved policies of the West Sussex County Council Minerals Local Plan. Emerging policies

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within the New Minerals Local Plan, expected to be submitted for examination imminently, are also a material consideration.

### West Sussex County Council Minerals Local Plan (2003)

- 5.25 Policy 1 concerns sustainable development and confirms that mineral workings will only be permitted where working practices which cause the least environmental harm will be followed and the land is reclaimed after extractions ceases and returned to its former status.
- 5.26 Policy 2 states that development will not be permitted if it prevents or hinders the extraction of minerals.
- 5.27 Policy 10 requires the prevention of damage to statutorily designated sites of historic, architectural, natural or scientific interest.
- 5.28 Policy 12 states that mineral workings considered to irreversibly damage the intrinsic quality of areas of natural beauty will be refused. In assessing such development, consideration of the need, alternative options and potential detrimental impacts on the landscape will be primary considerations.
- 5.29 Policy 13 continues in a similar vein, stating that development in non-designated areas will need to demonstrate that any potential environmental harm will be outweighed by the benefits of the development.
- 5.30 Policy 16 requires measures to be incorporated in any mineral workings to safeguard the water environment.
- 5.31 Policy 19 states that attention will be given to the effects on residential and other amenity, arising from mineral working operations. Policy 20 states that permission will only be granted for mineral workings if land can be restored after work has ceased and that reclamation would be completed at the earliest opportunity.
- 5.32 The importance of on shore oil and gas reserves is acknowledged at paragraph 5.9, which goes on to state that national policy seeks to encourage the full exploration and appraisal of hydrocarbons, to ensure the maximum exploitation of oil and gas.
- 5.33 Policy 26 concerns oil and gas and states, inter alia:

'Applications for the exploration, appraisal and/or commercial development of oil

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and gas resources will be permitted where it is demonstrated to the satisfaction of the mineral planning authority that the proposal presents the best option in comparison with other alternative sites within the area of search and that the proposal is acceptable in relation to the surrounding area.'

- 5.34 The policy goes on to state that particular attention will be given to the impact on the countryside, access, residential amenity, rights of way and the water environment. Policy 27 references the limited duration and area of such activities.
- 5.35 Policy 47 considers the routing and volume of vehicular traffic associated with mineral operations. Permission for such operations will be refused if there is inadequate highway capacity. Further to this, Policy 48 requires satisfactory highway access.
- 5.36 Policies 51 and 52 require the provision of a mineral working scheme to support applications, as well as details of siting and appearance of buildings, machinery and plant, together with proposals for their removal once work has ceased.
- 5.37 Policy 53 requires the provision of soil bunds and planting, to screen working. These can then contribute to the final reclamation scheme
- Policy 60 states that maximum noise limits will be imposed on sites, with appropriate monitoring points identified. Policy 62 also controls lighting on sites. Policy 63 concerns hours of working.

### **Emerging West Sussex County Council Minerals Local Plan**

- 5.39 Strategic objective 12 is: 'To protect the environment and local communities in West Sussex from unacceptable impacts of any proposal for oil and gas development, whilst recognising the national commitment to maintain and enhance energy security in the UK'.
- 5.40 Policy M7a states a presumption in favour of oil and gas proposals, including extension of life applications, provided any unacceptable impacts are mitigated, restoration will take place and the development would result in no unacceptable impacts arising from hazardous materials or contaminated fluids.
- 5.41 The policy goes on to require that no unacceptable transport impacts would arise from the development and that such development will be permitted in close proximity to designated areas, provided care is taken to avoid harming the special qualities of the designated area.

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- 5.42 Policy M9 concerns safeguarding minerals, stating that mineral extraction sites will be safeguarded from non-minerals development that would prejudice the sites ability to perform its function. Policy M10 affords similar protection to minerals infrastructure, resisting non minerals development that may prejudice this.
- not discussed no 5.43 Other policies in the emerging Local Plan document are in line with those already discussed above, as contained within the existing Local Plan, therefore are not discussed further here.

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### 6.0 PLANNING CONSIDERATIONS

- 6.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 states that, if regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts, the determination must be made in accordance with the plan, unless material considerations indicate otherwise.
- 6.2 This section assesses the key issues relevant to the determination of the application
- 6.3 As noted above, the application seeks consent for the continuation of existing operations at the site, beyond the current cessation date of 31<sup>st</sup> December 2017.
- 6.4 The proposed amendments to conditions are consistent with the purposes of these conditions, those being to confirm the temporary nature of the current use and to ensure restoration of the site. The proposal does not seek intensification or an extension to the scale of operations at the site, nor does it introduce hydraulic fracturing to the site, but signifies an important ongoing investment in the local economy.
- 6.5 The ongoing operations will continue to comply with the various environmental standards detailed in conditions attached to the extant consents for the site, including those limiting noise levels and vehicular movements. All conditions attached to the extant consent will be re-attached to the \$73 approval hereby sought and the decision notice should note those that have already been discharged/complied with, for clarity.

### **Need for the Development**

- 6.6 'Meeting the Energy Challenge A White Paper on Energy' published by the former Department of Trade and Industry in May 2007 states that the UK faces two main security of supply challenges:
  - our increasing reliance on oil and gas in a world where energy demand is rising and energy is becoming more politicised; and
  - our requirement for substantial, and timely, private sector investment over the next two decades in gas infrastructure, power stations, and electricity networks.
- 6.7 As a consequence the Government has set out the national need to ensure secure future energy supplies. Its four long term goals for energy policy are:

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- to put the UK on the path to reducing carbon dioxide emissions by 60% by 2050;
- to maintain reliable energy supplies;
- to promote competitive markets in the UK and beyond; and
- to ensure that every home is adequately and affordably heated.
- 6.8 Hence the achievement of secure and reliable energy supplies is a key part of Government policy and are vital to the current need to promote the availability of cost effective energy to support economic growth.
- 6.9 National policy makes clear the economic priority to achieve growth in the economy and that the presumption in favour of sustainable development is a material consideration. In effect, applications that promote economic growth and activity should not be refused unless there are clear policy objections or other environmental harm.
- 6.10 The development and maximisation of indigenous supplies is a key part of the promotion and achievement of energy security for the UK. The optimisation of production from sources, such as Storrington, help secure also the decentralisation of supply, easing pressure on the distribution network.
- 6.11 It is a key principle of Government and development plan policy to optimise the recovery of viable resources from existing infrastructure. This helps ensure the efficient utilisation of resources, maximise the contribution to UK production and help avoid the unnecessary sterilisation of resources that would otherwise not be economic to work if not recovered as part of the current operations.

### **Existing Reserves**

- 6.12 The main argument for the ongoing extraction of mineral from the reservoir is that there are reserves still remaining in the Storrington reservoir. It would therefore not be in the national interest to cease extraction and sterilise the facility at this premature stage and the potential of the reserve should be maximised, in accordance with local and national policy stance.
- 6.13 The cumulative production to date is 1,216 Mstb. Production forecast estimates remaining extractable oil in the reservoir to amount to 127 Mstb.
- 6.14 As such, there is clearly a benefit in the continued operation of Storrington Oilwell site, in

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terms of contribution to oil production in the UK. Such a contribution assumes greater significance given the UK's increasing dependency on oil imports over the coming years. The development for the continued operation of the Oilfield is therefore seen to be in accordance with Para 142 of the NPPF which states that 'Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However since minerals are a finite resource and can only be worked where they are found, it is important to make best use of them to secure their long term investment'

6.15 Extraction rates will slow as the available oil depletes, so the 15 year proposed extension will ensure oil extraction is maximised.

### **Environmental Impact**

- 6.16 Whilst activities will remain unchanged at the site, as a result of this application, and there will be no associated environmental impacts of the proposal, it is important to revisit the environmental characteristics of the operations.
- 6.17 The site is very well screened by the mature hedgerow and woodland to the west, the new woodland area and fencing to the north, tree planting down the eastern boundary and bunding on three sides. The site is therefore barely visible from the immediate vicinity of the site, let alone from any surrounding public viewpoints or residential properties. Views of the site from the immediate area are as follows:



View from the south (source: Google Maps)

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View from the east (source: Google Maps)



View from north (source: Google Maps)

- 6.18 Noise levels are controlled by the imposition of planning conditions on previous consents and these are strictly adhered to. This will continue to be the case and there will be no increase in noise producing activity as the result of this proposal.
- 6.19 Condition 6 of WSCC/050/13/SR stipulates provision of regular noise monitoring to ensure 35dB is not being exceeded. Documents submitted against this condition committed to annual noise monitoring, the most recent of which occurred at the end of May 2017, and was subsequently submitted to WSCC in early June. For ease, the noise assessment is attached at Appendix C at the rear of this report.
- 6.20 The report concludes that the maximum noise level recorded at a nearby sensitive receptor was 33dB, so below the 35dB maximum level as set out in Condition No 7. This recorded noise level was mainly as a result of road traffic noise, not associated with the oil and gas operations. Once road traffic noises reduced, noise from the wellsite was barely audible and well below the 35dB maximum.
- 6.21 Vehicle movements associated with the ongoing activities have already been approved as part of previous consents and total daily HGV movements are well below the permitted 22

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(per working day) (subject of Condition No 13 of WSCC/050/13/SR) and in fact accumulates to 2 tankers in and 2 tankers out per week, plus staff car movements. There have been no highway issues associated with the site. As the traffic associated with operational oilfield is so limited, the 15 additional years of the oilfield's life is not expected to result in any significant impact upon other users of the surrounding roads.

- 6.22 The site is accessed direct from the main A283, thus road access is good and does not necessitate HGV's passing along lower grade roads.
- 6.23 Storrington Oilwell site is an established oil production facility and the principle of extraction has been maintained, through various consents for drilling and production over the past 20 years. There are no environmental constraints that mean that the extraction should cease at the end of 2017.

### Social and Economic Impacts of the continued operation of the Oilfield

Extending the planning permission term and allowing for an additional 15 years of operation, will ensure that local employment is still required for the operation of the site, and site security monitoring. IGas estimate that the oiffield provides approximately 3 jobs locally.

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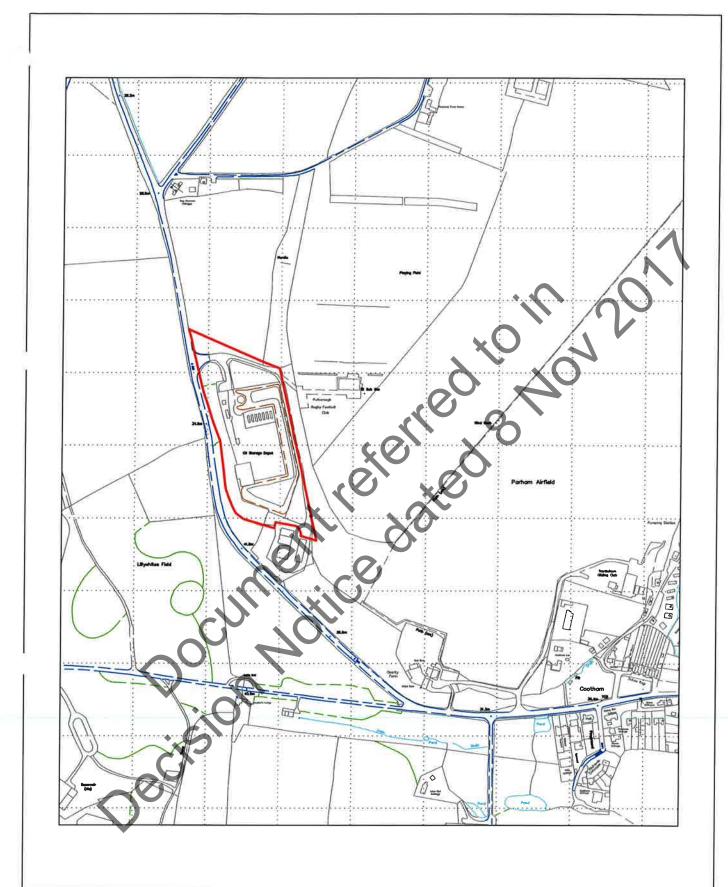


### 7.0 SUMMARY AND CONCLUSIONS

- 7.1 The proposal seeks the amendment to a planning condition to ensure that extraction does not cease at the end of 2017, but can continue until the end of 2032.
- 7.2 The proposed amendments to Conditions 3 and 4 are still consistent with the purposes of the respective condition to ensure the temporary nature of the consent and then the restoration of the site.
- 7.3 The production of onshore oil and gas is in the National Interest and is supported by national policy. It is a key part of ensuring optimum recovery of natural resources and achieving a secure indigenous energy supply, protecting consumers from fluctuations of the world energy market. It is considered that the positive contribution of extending the operational period of the scheme will outweigh any limited harm that may arise because of this timeframe extension.
- 7.4 The proposal hereby submitted seeks no changes to the existing operations at the site, nor the increase in activity. As such, there will be no increase in noise, ecological impact, and visual impact or vehicle movements as a product of this proposal. Operations ongoing at the site are all within the bounds of the conditions previously imposed and this will not change as a result of this proposal.
- 7.5 Operations have occurred at the site for many years without issue or complaint and assessment of the oilfield indicates that there is still a significant amount of recoverable resource to be extracted. It is therefore vital that extraction continues, within the environmental limits already secured through various consents at the site, the conditions of which will be attached to any s73 consent.



# Decision Notice dated 8 Nov 2017 Decision Notice dated 8 Nov 2017





NOTES:

STORRINGTON WELL SITE LOCATION PLAN

SCALE: 1:5,000 @ A4 NGR: TQ 068 149

DATE: 8 SEPTEMBER 2017 | REF: STO-02

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# Decision Notice dated 8 Nov 2011 Decision Notice dated 8 Nov 2011

County Planning County Hall Chichester West Sussex PO19 1RH

Tel: 01243 642118



Application No: WSCC/050/13/SR COUNTY MATTER

## TOWN AND COUNTRY PLANNING ACT 1990 TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2010

To IGas Ltd
23 Buckham House
Lenten Street
Alton
Hampshire GU34 1HH

In pursuance of their powers under the above mentioned Act and Orders, West Sussex County Council hereby notify you that they **PERMIT** the following development, that is to say:-

Retention of existing Storrington wellsite including plant and equipment and to continue to produce hydrocarbons for a further period of up to 5 years at Storrington Oilwell Site, Pulborough Road, Cootham, Storrington, West Sussex, RH20 4HP

to be carried out in accordance with your application and plans (as modified by the undermentioned conditions if any) submitted to this Council on 3 June 2013(and in accordance with the relevant correspondence a copy of which is attached \*) and subject to the conditions specified hereunder:-

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

Reason: To comply with Section 91 of the Town and Country Planning Act, 1990.

- 2. The proposed development shall not take place other than in accordance with the approved plans:
  - Storrington Well Site: Location Plan (ref. STO-02);
  - Storrington Well Site: Site Plan (ref. STO-01C);

Reason: To secure a satisfactory development.

- Storrington Well Site: Lighting Plan (ref. STO-03A);
- Dimension and Photographic Schedule of Storrington Wellsite Plant and Equipment (Appendix 3 to Planning Statement);

along with submitted documents including the Planning Statement (prepared by Island Gas Limited, dated may 2013), save as varied by the conditions hereafter.

Date 09 5 Signed Strategic Planning Manager

**\*N.B.** The reasons for imposing the above conditions are as specified after the conditions. The words in brackets do not apply unless a copy of the relevant correspondence is attached. Your copy of the application, determined as above, is returned herewith for your records.



### **Continuation Sheet**

3. All operations hereby approved under this permission, including the restoration of the site (but not its aftercare), shall cease by 31 December 2017 or within six (6) months of the completion of production of oil and gas from the site, whichever is the sooner.

Reason: The development is of a temporary nature, so the site should be restored as soon as possible after completion of the oil and gas production activities.

4. All structures, plant and machinery, both fixed or otherwise and any other engineering works approved by this application (including any hard surface constructed for any purpose) shall be removed from the application site by 31 December 2017 or within six (6) months of the completion of production of oil and gas from the site whichever is the sooner and the site shall be restored in accordance with the scheme approved under condition 5. Notwithstanding this condition, any plant or equipment required to make the site safe to a specification as may be required by Borehole Sites and Operations Regulations 1995 and Offshore Installations and Wells (Design and Construction) Regulations 1996 (as amended) may remain in position for that purpose only.

Reason: The development is of a temporary nature, accordingly the site should be restored as soon as possible after completion of the oil and gas production activities.

5. Within three months of the date of this permission a scheme of restoration and aftercare to return the whole site to its former levels (prior to oil-related operations) and to a condition suitable for the re-establishment of agriculture, shall be submitted for approval in writing by the County Planning Authority. The scheme of aftercare shall provide for a five year period following the initial restoration of the site. The approved scheme of restoration and aftercare shall be carried out in full in accordance with the timescales set out in condition 4.

Reason. To ensure satisfactory restoration of the site.

6. Noise monitoring shall be undertaken in accordance with the Noise Monitoring Scheme previously submitted to and approved by the County Planning Authority (ATL Consulting report AT4118/S1/BCP dated 19 August 1997), with assessment to be undertaken in accordance with British Standard 7445: 2003 (or any subsequent amendment to that Standard).

Reason: In the interests of the amenities of local residents

7. Operations on the site shall at all times be undertaken such that the maximum noise levels from the on-site operations measured at the facades of the nearest residential properties do not exceed 35dB(A) Laeq/1hr. If so required by the County Planning Authority tests shall be carried out by the operator in order to demonstrate that their operations conform to this requirement.

Reason: In the interests of the amenities of local residents.

Date 09 10 3

Signed

Strategic Planning Manager .....



### **Continuation Sheet**

8. No plant or equipment shall be used on the site unless fitted and operated at all times with silencing measures to a standard not less than the manufacturer's UK standard specification for that equipment.

Reason: In the interests of the amenities of occupiers of nearby residential properties.

9. Site restoration works shall be carried out only between the hours of 0700 and 1800 between Monday and Friday, and between 1700 and 1300 on Saturdays, and not at all on Sundays, bank holidays or public holidays.

Reason: in the interests of the amenities of local residents.

10. No gas flaring or venting shall be carried out at the site other than through the equipment described in the application.

Reason: In the interests of the amenities of local residents, and protection of the environment.

11. Throughout the period of operations hereby approved, fire precautions and fire fighting equipment shall be provided and maintained at the site in accordance with the requirements of the County Fire Officer. Fire water tanks shall remain on site filled and maintained to a standard adequate for fire fighting purposes.

Reason: In the interests of fire safety

12. Except in the case of emergency, no heavy goods vehicles shall enter or leave the site except between the hours of 0700 to 1800.

Reason: In the interests of the amenities of local residents.

13. There shall be no more than twenty-two heavy goods vehicles movements (eleven vehicles coming to, and leaving the site) in any day.

Reason; in the interests of highway safety and residential amenity.

14. No lighting on the site shall be directly visible from any residential property or from the A283 public highway.

Reason: in the interests of the amenity of the countryside and highway safety.

Date Sq 10/13 Signed Strategic Planning Manager



### **Continuation Sheet**

15. Any proposals for the storage of fuel or oil must be stored in accordance with the Control of Pollution (Oil Storage)(England) Regulations 2001. Any facilities, above ground for the storage of oils, fuels or chemicals shall be sited on an impervious base and surrounded by impervious 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 pipe work 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. Such facilities shall be constructed and completed in accordance with plans approved in writing by the County Planning Authority.

Reason: To minimise the risk of pollution of watercourses

16. No liquid waste or trade effluent shall be discharged from the site.

Reason: to minimise the risk of pollution of the water environment.

17. No vehicle shall leave the site in such a condition that earth and mud adhere to the wheels in a quantity which may introduce hazard or nuisance on the highway and actions to be taken in the event of mud or debris arising from the development being present on the highway.

Reason: in the interests of highway safety.

18. Within six months of the date of this permission a scheme for additional landscaping shall be submitted to and approved in writing by the County Planning Authority. Such a scheme shall include a planting plan and schedule of plants noting species, plant sizes and proposed numbers/densities. Thereafter the approved landscaping scheme shall be implemented in full. Any trees, shrubs or plants which within a period of 5 years from planting are removed or become seriously damaged, diseased or die shall be replaced in the next planting season with others of such size and species as may be agreed in writing with the County Planning Authority.

Reason: In the interests of the amenity and of the environment of the development.

### INFORMATIVES

A. Reason for the granting of planning permission:

The proposed development meets the main material considerations in that it:

- Is acceptable in terms of its impact on residential amenity;
- Is acceptable in terms of its impact on the environment;
- Is acceptable in terms of the safety and capacity of the highway network;
- Complies with Development Plan and NPPF Policies that are listed below.

Date Signed Strategic Planning Manager



### **Continuation Sheet**

### West Sussex Minerals Local Plan July 2003 (Saved Policies 2007)

Policy 1 - supports working practices of least environmental harm, and opportunities to conserve and enhance the environment and appropriate after use is incorporated.

Policy 10 - Proposals for mineral workings that may damage statutorily designated sites of natural or scientific interest will only be permitted where damage can be prevented or the need for the mineral outweighs environmental impact.

Policy 16 - Seeks to ensure safeguarding of the water environment

Policy 19 - Seeks to protect residential amenity

Policy 22 - Seeks to ensure appropriate restoration

Policy 26 - Supports oil and gas development where it is the best option with particular attention given to impact on countryside, site access and vehicle routeing, residential amenity, Public Rights of Way, and the water environment.

Policy 47 - Impact on highway network.

Policy 52 - Siting and appearance of buildings, machinery and plant; removal after cessation of works.

Policy 53 - Incorporation of measures for the provision, retention and protection of landscaping.

Policy 56 - The quality of surface and ground water supplies will be protected.

Policy 60 - Seeks to ensure noise levels are acceptable.

Policy 62 - Seeks to control lighting in the interests of amenity

Policy 63 - Where appropriate hours of work will be controlled.

### Horsham District Core Strategy (2007)

Policy CP2 - high quality management of the environment;

Policy CP15 - protection of rural character.

### Horsham District General Development Control Policies (2007)

Policy DC1 - preservation and enhancement of countryside;

Policy DC9 - no unacceptable impacts on amenity.

### National Planning Policy Framework Paragraphs (2012):

14 presumption in favour of sustainable development, and approving development that accords with the development plan;

17 core planning principles;

109 protection and enhancement of the natural and local environment;

110 minimising pollution and other adverse effects;

120 impact of pollution on health and the environment;

123 planning decisions should avoid impacts on health and quality of life;

186 positive decision making;

196 determining applications in accordance with the development plan;

197 presumption in favour of sustainable development;

203 - 206 use of planning conditions.

Signed

Strategic Planning Manager ......



### **Continuation Sheet**

В. The Local Planning Authority has acted positively and proactively in determining this application by assessing the proposal against all material considerations, including planning policies and any representations that may have been received and subsequently determining to grant planning permission in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.

This information is only intended as a summary of the reasons for the grant of planning permission. For further details on the decision please see the report by contacting County Planning, West Sussex County Council or visiting the website at http://www.westsussex.gov.uk/ePlanning

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Signed Strategic Planning Manager .....

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# Document referred & Nov 2011 Decision Notice dated & Nov 2011



**Noise Survey Storrington Wellsite** 

Storrington Oilwell Site, Pulborough Road, Cootham, Storrington RH20 4HP

For IGas Energy

Report No. JAT9743-REPT-01-R0

01 June 2017



### **Quality Management**

Prepared by:	Josh Wilson BSc (Hons) AMIOA	Assistant Consultant		01/06/2017	
Reviewed & checked by:	Simon Stephenson CEng BSc (Hons) MIOA AASA	Technical Director	5.8	01/06/2017	
Authorised by:	Simon Stephenson CEng BSc (Hons) MIOA AASA	Technical Director	Sulfor	01/06/2017	
Report number:	JAT9743-REPT-01-R0		Date of issue:	01/06/2017	
Document file path:	\\BRIG-LW-03\\Projects\Jobs_9001-9900\\9743t\\Rev0\\JAT9743-REPT-01-R1.docx				

		Revision History		
Rev	Date	Status	Reason for revision	Additional comments
0	01/06/2017	Issued	Issued for Client Review	0 -

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# **Executive Summary**

AS part of iGas' obligation in discharging relevant planning conditions, RPS Planning & Environment has been commissioned to undertake a night-time noise survey at the Storrington wellsite, West Sussex. The survey was conducted between 23:00hrs and 03:00hrs on the 24<sup>th</sup> and 25<sup>th</sup> of May 2017, and measurements of noise levels, subjective impressions of noise and weather conditions were recorded.

were result of 35 a free-field noise and the fire date of the contract of the It is concluded that noise from the Storrington wellsite is below the planning noise limit of 35 dB L<sub>Aeq</sub> at the façade of the nearest noise sensitive receiver locations (equivalent to a free-field noise level of 32 dB L<sub>Aeq</sub>).

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	Document referred 8 No cision Notice dated

#### 1 Introduction

- 1.1 In 2013, iGas PLC (iGas) was granted planning permission for the renewal of the Storrington wellsite, provided it adhered to certain planning conditions. One of these conditions is that the site be subject to regular noise monitoring to ensure compliance with the planning noise limits.
- 1.2 The objective of this study is to determine noise levels due to current operations at the three Jecision Notice dated closest noise-sensitive receiver locations to the site and confirm that these are below the limit set out in the afore-mentioned planning condition.
- 1.3
- 1.4

### 2 Description of Acoustic Terms

- When listening to noise which occurs out in the open (e.g. from road traffic, aircraft, birds, wind in the trees etc.), it is common experience that the noise level is not constant in loudness, but changes amplitude constantly. Therefore, in order to numerically describe the noise levels, it is beneficial to use statistical parameters. It has become practice to use indices which describe the noise level which has been exceeded for a certain percentage of the measurement period, and also an index which gives a form of average of the sound energy over a particular time interval. The former are termed percentile noise levels and are notated L<sub>90</sub>, L<sub>50</sub>, L<sub>10</sub> etc. and the latter is termed the equivalent continuous noise level and is notated by L<sub>eq</sub>.
- 2.2 With regard to the percentile levels, the  $L_{90}$  is the sound pressure level which is exceeded for 90% of the measurement time. It is generally used as the measure of background noise in environmental noise standards. The  $L_{10}$  is the sound pressure level which is exceeded for 10% of the time and is often used to describe traffic noise.
- 2.3 The  $L_{eq}$  (sometimes denoted  $L_{eq,T}$ ) is the equivalent continuous noise level and is an energy averaged value of the actual time varying sound pressure level over the time interval, T. It is used in the UK as a measure of the noise level of a specific industrial noise source when assessing the level of the specific source against the background noise. It is also used as a measure of ambient noise.
- 2.4 The term 'A' weighting implies a measurement made using a filter with a standardised frequency response which approximates the frequency response of the human ear at relatively low levels of noise. The resulting level, expressed in 'A' weighted decibels, or dBA, is widely used in noise standards, regulations and criteria throughout the world. Additionally, percentile and L<sub>eq</sub> levels are often notated with this "A" to denote that they are 'A' weighted decibels, i.e. L<sub>Aeq</sub>, L<sub>A90</sub>, L<sub>A10</sub>.
- 2.5 For a more detailed analysis of the frequency characteristics of a noise source, then noise measurements can be made in bands of frequencies, usually one octave wide. The resulting levels are termed octave band sound pressure levels. The standard octave band centre frequencies range from 31.5 Hz (about three octaves below middle 'C' on the piano) to 8 kHz (about five octaves above middle 'C'). This covers most of the audible range of frequencies (usually taken to be around 20 Hz to 20 kHz). Total 'A' weighted noise levels can be calculated using the octave band data. Octave band noise levels are usually quoted as linear data i.e. without an 'A' weighting filter being applied.
- 2.6 The term decibel is a relative quantity and should always be referenced to an absolute level. In this report all sound pressure levels (denoted  $L_P$ ) are expressed in dB ref 20  $\mu$ Pa.
- 2.7 Subjectively, and for steady noise levels of a similar character, a change in A-weighted noise level of 2 to 3 dB is normally just discernible to the human ear. A difference of 10 dB in the A-weighted level represents a doubling or halving of subjective loudness.

# 3 Planning Noise Conditions

- 3.1 Planning condition SR/68/96 contains two conditions relation to noise; condition 6 stipulating the provision of regular noise-monitoring and condition 8 stipulating that:
  - "...maximum noise levels from the on-site operations measured at the facades of any residential property liable to receive increased noise levels due to the on-site operations do not exceed 45 dBA L<sub>Aeq,1hr</sub> in which well drilling operations are being carried out, and 35 dBA L<sub>Aeq,1hr</sub> at all other times."
- 3.2 The limits have been expressed as façade levels which includes a reflection from the façade of a building. When comparing with free-field levels (i.e. measurements conducted in the absence of an acoustically reflective façade) a correction must be made (façade levels are nominally 3 dB higher). Subsequently, comparisons in this report will be made with regards to a free-field level of 32 dB L<sub>Aeq</sub>.
- 3.3 Putting the planning conditions into context, L<sub>Aeq</sub> limits are 10 dB lower than those outlined in WHO guidelines for community noise for the night time period.

# 4 Site Description and Noise Sensitive Receptors

- 4.1 The Storrington well site is located in West Sussex to the west of the village of Storrington, adjacent to the South Downs National Park, with the A238 running between the boundary of the park and the wellsite.
- 4.2 The closest noise sensitive receptors to the wellsite are the residential properties marked in red in Figure 4.1, and described as follows:
  - Douglas Lodge, 350 m to the South
  - Bog Common Cottages, 370 m to the North
  - Freeland, 500 m to the North East
- 4.3 Noise generating equipment on the site includes beam pumps, water injection pumps and power generation.

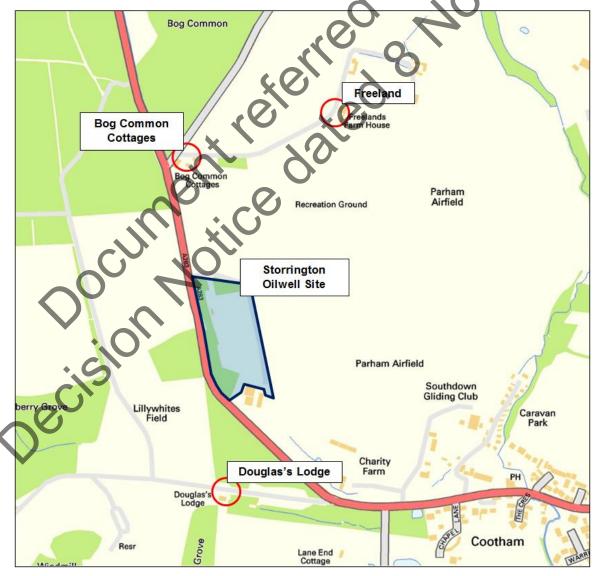
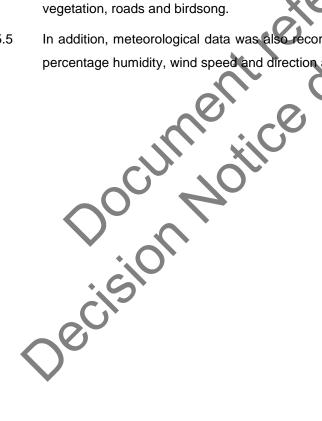


Figure 4.1 Storrington Wellsite and Area Map

#### 5 Methodology

- 5.1 In order to determine current operational levels, a noise survey was undertaken over a single night-time period between 23:00hrs and 03:00hrs on the 24<sup>th</sup> and 25<sup>th</sup> May, 2017.
- The survey was undertaken with the following equipment; 5.2
  - Brüel & Kjær 2270 sound level meter, S/N: 3010761
  - Brüel & Kjær type 4189 microphone, S/N: 3044006
  - Brüel & Kjær type 4231 calibrator, S/N: 1839057
- The instrumentation conforms to the Type 1 rating of IEC 61672, and was calibrated before and 5.3 after the survey with no observable drift.
- Measurements were undertaken in accordance with "Storrington development noise monitoring 5.4 scheme" AT4118/S1/BCP. This comprised 10 minute samples of overall A-weighted Leg, LMax, L<sub>90</sub>, L<sub>50</sub>, L<sub>10</sub> and L<sub>1</sub> indices in addition to un-weighted L<sub>90</sub> and L<sub>90</sub> octave band levels. Subjective impressions of audibility were also recorded, assigning a score of 0 to 4 (0 = inaudible; 1 = barely audible; 2 = audible; 3 = clearly audible; 4 = dominant) of noise from industry, wind in trees and vegetation, roads and birdsong.
- In addition, meteorological data was also recorded, comprising: temperature in degrees Celsius, 5.5 percentage humidity, wind speed and direction and cloud cover in octants.



#### 6 Results and Discussion

- 6.1 A summary of noise levels at the closest receptor points is presented in Table 6.1, as well as results from a measurement taken at the site boundary. Full results, including octave levels and subjective impressions, are presented in Appendix A.
- Noise from the wellsite was just audible at two of the locations, and audible at one location. Other noise sources contributed to the ambient noise level, such as road traffic and wildlife. Noise at the receptor locations was generally broadband in nature with no distinctive characteristics (such as whines or hums).
- The weather conditions throughout the entire measurement period were calm, clear and warm, with wind speeds staying below 1 m/s at all times.
- 6.4 The noise levels measured at the receptor locations were all within the specified planning limit and it is considered that these levels are representative of the noise from the wellsite.

Table 6.1 Noise levels at sensitive receptor locations

Location		e of Noise urements	Noise Environment Description							
Douglas Lodge	30 – 32	23 - 29	Wellsite just audible, noise dominated by distant road traffic noise, with small contribution from movement in trees and vegetation, as well as very distant air traffic.							
Bog Common Cottages	29 – 33	24 – 27	Wellsite just audible, noise dominated by distant road traffic noise, with small contribution from movement in trees and vegetation, bird noise, as well as very distant air traffic.							
Freeland	30 – 32	27 – 28	Wellsite audible, noise dominated by distant road traffic noise, with small contribution from movement in trees and vegetation, bird noise, as well as very distant air traffic.							
Site Boundary	34 – 35	32 – 33	Wellsite dominant.							
Oeg	isiol									

### 7 Conclusions

- 7.1 A noise assessment has been conducted at the Storrington Wellsite in support of iGas' commitment to compliance with planning condition requirements for regular noise monitoring. Measurements were conducted during the night time of the 24<sup>th</sup> of May 2017 in accordance with monitoring scheme (AT4118/S1/BCP) in order to discharge planning condition 8, which sets an operational façade noise limit of 35 dB L<sub>Aeq</sub> (equivalent to a free-field noise limit of 32 dB L<sub>Aeq</sub>). It is concluded that:
  - The maximum noise level recorded at the closest sensitive receptor location was 33 dBA
     L<sub>Aeq</sub> (free-field). This level was primarily dominated by distant road traffic noise;
  - Jecision Notice dated When the distant road traffic noise levels reduced, noise from the wellsite was well within

Decision Notice dated 8 Nov 2017

Decision Notice dated 8 Nov 2017

# **Appendix A: Attended Noise Survey Data**

Decision Notice dated 8 Nov 2011

Decision Notice dated 8 Nov 2011

A



Appendix A.1 - Octave band data, dB Leg

Location	Start Time	dBA	Linear octave band centre frequency, Hz												
Location	Start Time	UDA	31.5	63	125	250	500	1k	2k	4k	8k				
Α	23:01	32.13	46.37	43.28	35.41	31.64	28.83	29.05	19.14	14.99	15.24				
В	23:28	33.41	40.47	38.75	32	29.77	30.44	31.36	19.58	14.5	14.54				
С	23:57	30.25	42.75	40.84	35.72	25.09	29.45	25.64 27.58 22.21	17.53	14.35	14.85				
Α	00:17	31.16	40.96	39.3	35.04	30.18	28.68 27.09		18.71	15.22	15.45				
В	00:38	29.31	38.86	37.52	33.93	31.85			18.09	17.49	16.85				
С	00:55	30.4	46.01	43.04	36.9	27.97	28.14	25.13	19.64	17.57	16.92				
Α	01:16	30.26	42.08	37.85	29.23	24.98	26.81	26.76	20.8	18.75	17.01				
В	01:33	30.97	39.58	36.16	33.56	29.78	25.9	28.88	17.83	15.71	15.18				
С	01:51	32.13	45.52	42.01	37.23	29.74	30.04	28.39	19.79	16.57	14.83				
Site Boundary	02:10	34.15	46.91	41.39	36.94	33.88	31.65	29.86	24.26	19.78	14.65				
Site Boundary	02:15	34.54	46.72	41.41	35.89	33.68	31.77	30.86	24.36	20.42	15.14				
Site Boundary	02:18	34.12	52.53	48.66	37.87	33.87	31.3	29.05	24.89	20.52	16.22				

Appendix A.2 - Octave band data, dB  $L_{90}$ 

	T T				Line	ear octave l	band centre	e frequency	/. Hz		-/-
Location	Start Time	dBA	31.5	63	125	250	500	1k	2k	4k	8k
Α	23:01	28.51	41.34	41.34	39.19	31.48	26.28	25.21	24.11	13.56	11.23
В	23:28	26.61	37.71	37.71	34.55	27.23	26.3	25.42	19.67	12.69	11.36
C	23:57	27.93	39.73	39.73	38	31.63	20.75	27.01	22.48	14.2	11.26
A	00:17	24.81	37.9	34.57	27.79	22.38	22.18	19.31	11.45	11.16	12.76
В	00:38	24.76	36.12	33.74	26.13	25.74	23.08	17.51	11.53	11,19	13.02
С	00:55	26.85	41.87	37.58	31.17	21.09	25.41	20.19	13.45	11.24	12.48
Α	04.40	00.00	39.58	05.00	25.57	00.0	04.00	47.00	11.18	11.23	13.04
В	01:33	24.06	37.3	32.98	24.9	23.49	22.33	17.13	11.26	11.17	13.01
С	01:51	26.87	42.61	38.55	30.07	21.22	23.77	22.13	14.58	11.44	12.29
Site Boundary	02:10	32.51	44.33	38.71	35.11	32.49	29.56	26.48	23.11	18.74	13.81
Site Boundary	02:15	32.29	44.01	38.62	34.2	32.35	29.61	26.35	22.35	18.47	13.41
Site Boundary	02:18	31.78	47.3	42.37	34.47	32.32	29.25	25.29	22.24	18.22	13.38
B C Site Boundary Site Boundary Site Boundary											



Appendix A.3 - Statistical indices, meteorological data and comments

		Local Weather Subjective Audibility (0-4)*				Noise Level, dB											
Location	Start Time	Wind Speed, ms <sup>-1</sup>	Wind Direction	Temperature, °C	Humidity, %RH	Cloud, Octants	ndustry (Wellsite)	Wind in trees and vegetation	Roads	Birdsong	L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>A1</sub>	L <sub>A10</sub>	L <sub>A50</sub>	L <sub>A90</sub>	Surveryor's Comments
Α	23:01	<1			60	0	1	0	4	0	32	46	37	34	31	29	Distant road traffic noise, rustles in trees and vegetation from animals, distant air traffic, very distant whining from wellsite (no. of pauses: 10+)
В	23:28	<1	N/A	20	61	0	1	0	4	0	33	52	45	36	29	27	Distant road traffic noise, rustles in trees and vegetation from animals, high frequency bat noise, very distant whining from wellsite (no. of pauses: 10+)
С	23:57	<1	N/A	16	68	0	2	0	4	0	30	46	35	32	29	28	Distant road traffic noise, distant whining from wellsite (no. of pauses: 3)
Α	00:17	<1	N/A	16	72	0	1	0	4	0	31	49	38	34	29	25	Distant road traffic noise, rustles in trees and vegetation from animals, distant air traffic, very distant whining from wellsite (no. of pauses: 4)
В	00:38	<1	N/A	15	75	0	1	0	4	0	29	46	40	30	26	25	Distant road traffic noise, rustles in trees and vegetation from animals, distant air traffic, very distant whining from wellsite (no. of pauses: 1)
С	00:55	<1	N/A	12	75	0	2	0	3	2	32	49	41	35	30	27	Distant road traffic noise, owl cooling, distant air traffic, distant whining from wellsite (no. of pauses: 2)
Α	01:16	<1	N/A	13	71	0	1	0	4	0	30	50	39	33	26	23	Distant road traffic noise, rustles in trees and vegetation from animals, very distant whining from wellsite (no. of pauses. 2)
В	01:33	<1	N/A	12	75	0	1	0	4	2	31	56	39	32	25	24	Distant road traffic noise, rustles in trees and vegetation from animals, very distant whining from wellsite, owl coping, distant dog barking (no. of pauses: 5)
С	01:51	<1	N/A	12	74	0	2	0	3	2	32	49	41	35	30	27	Distant road traffic noise, rustles in trees and vegetation from animals, distant whining from wellsite, owl cooling, distant dog barking, distant motorbikes (no. of pauses: 5)
Site	02:10	<1	N/A	12	77	0	3	0	2	0	34	42	40	35	34	33	Whine from oilfield site, occasional thud and bang from oilfield site, distant road traffic, owls cooing and birds tweeting (no. of pauses: 0).
Site	02:15	<1	N/A	12	77	0	3	0	2	0	35	43	38	37	34	32	
Site	02:18	<1	N/A	12	77	0	3	0	2	0	34	49	39	36	33	32	Whine from oilfield site, occasional thud and bang from oilfield site, distant road traffic, owls cooing and birds tweeting (no. of pauses: 0).
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