

# Notice of variation and consolidation with introductory note

**The Environmental Permitting (England & Wales) Regulations 2016**

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IGas Energy Production Limited

Glentworth K Wellsite  
Northlands Road  
Glentworth  
Gainsborough  
DN21 5DN

**Variation application number**

EPR/RP3437YQ/V002

**Permit number**

EPR/RP3437YQ

# Glentworth K Wellsite

## Permit number EPR/RP3437YQ

### Introductory note

#### **This introductory note does not form a part of the permit**

Under the Environmental Permitting (England & Wales) Regulations 2016 (Schedule 5, Part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made.

All the conditions of the permit have been varied and are subject to the right of appeal.

This variation is to add a Mining Waste Operation, as defined by the Mining Waste Directive and Schedule 20 of the Environmental Permitting (England and Wales) Regulations 2016 as amended, relating to the management of extractive waste not involving a Mining Waste Facility. The permit is being varied to include activities specified in the approved Waste Management Plan and these include management of extractive mining wastes from near well-bore treatments involving acid wash, hot oil wash, hot water wash and scale removal and well workover operations.

The variation also changes the Operator's registered office address. There are no other changes to the permit.

The original permit was issued for an Industrial Emission activity as defined by the Industrial Emissions Directive and Part 2 Schedule 1.2 of the Environmental Permitting (England and Wales) Regulations 2016, relating to the loading, unloading, handling and storage of crude oil.

The main features of the installation are as follows.

The installation comprises of a single oil production site at Glentworth, Lincolnshire. There are 5 wells on site, of which 4 are producing and 1 is suspended. Oil extracted from the reservoir is pumped directly to banded oil storage tanks along with the associated water. The storage tanks are periodically emptied by road tanker and the co-mingled fluids oil/water are transferred by road tanker to the local gathering station for treatment. The onsite storage tanks have vent stacks to allow gas entrained within the production fluids to escape to atmosphere via a single vent point. Produced gas is taken directly from the well annulus and feeds a reciprocating engine which producer's electricity from the attached generator. The produced electricity supplies sufficient power to operate the onsite equipment and supplemented by the local electricity network. Periodically gas is vented through the oil storage tanks when the gas engine becomes unavailable as a result of maintenance activities or fault conditions arising. This is usually for short periods and allows the production of oil to continue.

Currently oil production from the oilfield is averaging 99 barrels of oil per day, 57 barrels of water per day and a Gas oil Ratio of 152 standard cubic feet per barrel (GOR).

The principal releases into the environment comprise:

- (a) Emissions to air of gaseous hydrocarbons from separation of volatiles in storage.
- (b) Emissions of gaseous hydrocarbons from the road tanker by displacement on loading.
- (c) Rainwater run-off from hardcore well-site areas to ground through site drains.
- (d) Contaminated rainwater is removed by tanker for off-site treatment.
- (e) Engineering waste resulting from maintenance work is removed for disposal at a licenced waste disposal facility.

There are no SSSIs within 2 km of this installation or European designated habitats sites within 10 km of this site.

The schedules specify the changes made to the permit.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application WP3831LF	Duly made 05/10/2006	
Additional information	Requested 20/12/2006	Response received 18/01/2007
Permit determined EPR/WP3831LF	21/06/07	Permit was issued to Star Energy Oil & Gas Limited.
Notification of change registered office address	03/01/12	
Variation issued (EPR/WP3831LF)	06/02/12	Varied permit issued.
Transfer determined EPR/KP3431CX (full transfer of permit EPR/WP3831LF)	06/08/12	Permit was transferred in full to Island Gas Limited.
Application EPR/RP3437YQ/V002 (Part transfer of permit EPR/RP3437YQ)	Duly made 23/08/17	Application to transfer part of the activities.
Transfer determined EPR/RP3437YQ	06/11/17	Part transfer of permit is completed. Permit is partially transferred to IGas Energy Production Limited.
Variation Application EPR/RP3437YQ/V002	Duly made 19/10/17	
Additional information received	18/05/18	Response to Schedule 5 notice with revised Waste Management Plan
Notice of change of registered office address	20/03/18	
Variation determined EPR/RP3437YQ/V002 [Billing references: EP3835JQ / EAWML 404434]	27/06/18	Varied and consolidated permit issued in modern condition format.

End of introductory note.

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates

### Permit number

EPR/RP3437YQ

### Issued to

**IGas Energy Production Limited** (“the operator”),

whose registered office is

**c/o Womble Bond Dickinson (UK) Llp**

**Level 6**

**124-125 Princes Street**

**Edinburgh**

**United Kingdom**

**EH2 4AD**

company registration number **SC298739**

to operate an installation and a mining waste operation at

**Glentworth K Wellsite**

**Northlands Road**

**Glentworth**

**Gainsborough**

**DN21 5DN**

to the extent set out in the schedules.

The notice shall take effect from 27/06/2018.

Name	Date
<b>Principal Permitting Officer National Permitting Services</b>	<b>27/06/2018</b>

Authorised on behalf of the Environment Agency.

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation, and as a result of the application made by the operator.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/RP3437YQ**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/RP3437YQ/V002 authorising,

**IGas Energy Production Limited** (“the operator”),

whose registered office is

**c/o Womble Bond Dickinson (UK) Llp**

**Level 6**

**124-125 Princes Street**

**Edinburgh**

**United Kingdom**

**EH2 4AD**

company registration number **SC298739**

to operate an installation and a mining waste operation at

**Glentworth K Wellsite**

**Northlands Road**

**Glentworth**

**Gainsborough**

**DN21 5DN**

to the extent authorised by and subject to the conditions of this permit.

<b>Name</b>	<b>Date</b>
<b>Principal Permitting Officer National Permitting Services</b>	<b>27/06/2018</b>

Authorised on behalf of the Environment Agency

# Conditions

## 1 Management

### 1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, so far as is practicable, including those risks arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of the permit.

### 1.2 Energy efficiency

1.2.1 For the following activities referenced in schedule 1, table S1.1, A1, A2 and A3 the operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

1.3.1 For the following activities referenced in schedule 1, table S1.1, A1, A2 and A3 the operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 The operator shall:
- (a) review the waste management plan at least every five years from the date of initial approval and submit any written revisions to the Environment Agency for approval.
  - (b) implement the approved waste management plan from the date of approval, unless otherwise agreed in writing by the Environment Agency
- 2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.



## **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 table S3.1 shall not be exceeded.
- 3.1.3 Subject to any other condition of this permit, periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.
- 3.2.4 The Operator shall take appropriate measures:
- (a) to prevent the input of hazardous substances to groundwater; and
  - (b) where a non-hazardous pollutant is not controlled by an emission limit, to limit the input of such non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.

### **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.5 Monitoring**

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1;
- (b) groundwater specified in table S3.2;
- (c) process monitoring specified in table S3.3;
- (d) transfers off-site specified in table S3.4;

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 The operator shall carry out:

- (a) regular calibration, at an appropriate frequency, of systems and equipment provided for carrying out any monitoring and measurements necessary to determine compliance with this permit; and
- (b) regular checking, at an appropriate frequency, that such systems and equipment are serviceable and correctly used.

3.5.5 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

- 3.5.6 If required by the Environment Agency, the operator shall:
- (a) take such samples and conduct such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, at such times and using such methods and equipment as the Environment Agency may specify; and
  - (b) keep samples, provide samples, or dispatch samples for tests at a laboratory, as the Environment Agency specifies, and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the relevant legislation are complete.
- 3.5.7 The groundwater monitoring plan and site protection and monitoring plan specified in Table S1.2, Schedule 1 shall be implemented unless otherwise agreed in writing with the Environment Agency.
- 3.5.8 Any revised groundwater monitoring plan or revised environmental management and monitoring plan should be implemented in place of the original in accordance with the Environment Agency's written approval unless otherwise agreed in writing.

## **4 Information**

### **4.1 Records**

- 4.1.1 All records required to be made by schedules 3, 4 and 5 to this permit shall:
- (a) be legible;
  - (b) be made as soon as reasonably practicable;
  - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
  - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
    - (i) off-site environmental effects; and
    - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall maintain convenient access, in either electronic or hard copy, to the records, plans and management system required to be maintained by this permit.

### **4.2 Reporting**

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 For the following activities referenced in schedule 1, table S1.1, A1 and A2, a report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
  - (b) the annual production /treatment data set out in schedule 4 table S4.2; and
  - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
  - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

## 4.3 Notifications

- 4.3.1 In the event:
- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
    - (i) inform the Environment Agency,
    - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
    - (iii) take the measures necessary to prevent further possible incidents or accidents;
  - (b) of a breach of any permit condition the operator must immediately—
    - (i) inform the Environment Agency, and
    - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
  - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 The information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be supported by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
  - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 For the following activities referenced in schedule 1, table S1.1, A1 and A2:

Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days' notice before implementation of any part of the site closure plan.

4.3.7 Where the operator proposes to make an amendment to the approved waste management plan, which is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before implementing the amended waste management plan in place of the original; and
- (b) the notification shall contain a description of the proposed amendment.

4.3.8 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

## 4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

# Schedule 1 - Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity
A1	S1.2 A(1)(e)(i): The loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.	Production of fluids extracted from the resource formation by pump, phase separation and storage of products (crude oil) and waste prior to onward transport.	<p>From receipt of production fluids at the wellhead to the despatch of products (crude oil) and waste.</p> <p>Oil shall be stored in vessels which are of sufficient strength and structural integrity to ensure that it is unlikely to burst or leak in its ordinary use.</p> <p>Any road tanker loading systems must be fully contained and the delivery system shall be fitted with dry break couplings.</p> <p>During loading of road tankers, the road tanker shall be back vented to the bulk storage tank, or routed to a suitable vent treatment system.</p> <p>Provisions shall be made to minimise the emissions of non-methane volatile organic compounds (NMVOC) and methane from the oil storage tank vent.</p> <p>Any water, contaminated with crude oil, which is drained off from the storage vessel and is not being recycled for reinjection must be collected for treatment before disposal.</p> <p>Any water collected in the secondary containment (bund) must be sampled and analysed before release to controlled water. If found to be contaminated with crude oil, it must be collected for treatment before disposal.</p>
	<b>Directly Associated Activity</b>		
A2	Storage of additional raw materials.	Raw materials directly associated with the production of crude oil.	From receipt of raw materials to the despatch for use.

<b>Table S1.1 activities</b>			
A3	On site power generation	Generation of electrical power with gas engine.	Combustion of produced gas to generate electrical power for on-site use.
	<b>Description of activities for waste operations</b>	<b>Limits of activities</b>	
A4	<p>The management of extractive waste from production activities, not involving a waste facility.</p> <p>The management of extractive waste generated by well workover.</p>	<p>Permitted waste types shall conform to the description in the approved waste management plan.</p> <p>The activities shall be limited to those described in the approved Waste Management Plan referenced in table S1.2</p> <p>The storage of extractive waste is limited to temporary storage in secure containment as part of the collection and transportation of waste from the site.</p> <p>Drilling additives shall be approved in writing by the Environment Agency prior to use.</p> <p>Well stimulation by hydraulic fracturing is not permitted.</p>	

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to section 2.1 and 2.2, in the Application.	06/10/06
Response to the request for information issued on 20/12/2006.	Response from the applicant dated 18/01/2007 to the request for further information.	18/01/07
Regulation 60 Notice response	Technical standards in response to the notice provided under Regulation 60 of Environmental Permitting Regulations	23/11/15
Application	Section 3 of the application document(s) provided in response to section 3a – technical standards , Part C3 of the application form	Duly Made 19/10/17
Glentworth K Wellsite plan	Appendix 3 of Application.	26/09/17
Glentworth K Wellsite layout Plan	Appendix 3 of Application.	26/09/17
Response to Schedule 5 notice	Waste Management Plan rev 2	18/05/18
Contamination Risk Assessment : Site protection and monitoring programme	All parts.	26/09/17
Response to Gap analysis tool	All.	26/09/17
Secondary and tertiary containment plan as approved under IC1 specified in Table S1.3	All of document.	Date of approval of IC1
Leak detection and repair plan as approved under IC2 specified in Table S1.3	All of document.	Date of approval of IC2
Environment Management System as approved under IC3 specified in Table S1.3	All of document.	Date of approval of IC4

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Gas management system improvement plan as approved under IC4 specified in Table S1.3	All of document.	Date of approval of IC5

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC1  Containment	<p><b>Containment Management Plan</b></p> <p>The operator shall submit a written 'secondary and tertiary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review conducted, by a competent person, in accordance with the methodology detailed within CIRIA C736 (2014), of the condition and extent of secondary and tertiary containment systems where all polluting liquids and solids are being stored, treated, and/or handled. This review should consider, but is not limited to, the storage vessels, bunds, loading and unloading areas, transfer pipework/pumps, temporary storage areas, and liners underlying the site. The plan must contain dates for the implementation of individual improvement measures necessary for the secondary and tertiary containment systems to adhere to the standards detailed/referenced within CIRIA C736 (2014), or equivalent.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	27/03/2019
IC2  Leak detection	<p><b>Leak detection plan</b></p> <p>The operator shall submit a written 'leak detection and repair plan', and associated procedures and shall obtain the Environment Agency's written approval to it. The plan will consider all activities listed in table S1.1. The plan will identify, measure and reduce emissions of volatile organic compounds and other substances to air, appropriate to their operations and in accordance with European standard EN15446 or an equivalent standard.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	27/12/2018



<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC3  Management system	<p><b>Management System</b></p> <p>The operator shall review and update the written management system (referred to in condition 1.1.1) to ensure the procedures are in place to meet the requirements resulting from the variation of this permit. In particular the review should ensure that the following point(s) is / are included in the management system:</p> <p>Details of the training given to staff on use of spill kits; ensure training records updated accordingly.</p> <p>The procedure for determining the consignments of wastes for disposal off-site to be sampled and the procedure for retaining those samples.</p> <p>The procedures for testing the impermeable membrane and subsequent remediation measures if required.</p> <p>The procedure for notifying the Environment Agency on each occasion where natural gas is vented uncombusted to atmosphere for safety purposes. Notification to include, but not limited to: reasons for, duration of and quantity of gas vented.</p> <p>The procedures and processes for measuring amount of gas vented from each emission point and the details of appropriate devices installed at each emission point used to measure the amount of vented gas.</p> <p>The procedure for providing emergency flare capacity in the event that venting will likely to continue for more than 24 hours.</p>	27/09/2018
IC4  Gas Management	<p><b>Gas management plan</b></p> <p>The operator shall submit a written gas management improvement plan and shall obtain the Environment Agency's written approval for it.</p> <p>The plan must contain detailed consideration of all available options for the beneficial utilisation of all of the available gas from your activities, including gas that is not already utilised, gas vented from storage vessels and gas vented during the loading and unloading of road vehicles where relevant.</p> <p>Where such utilisation is not feasible, your plan must consider in detail all available options, both combustion and non-combustion based (including but not necessarily limited to flaring, vapour recovery, scrubbing and adsorption), for the disposal or abatement / mitigation of your waste gas so as to minimise its environmental impacts as far as available techniques allow.</p> <p>The gas management improvement plan shall also refer to the review of emissions undertaken as a result of IC5. If emission limits were not being met, the plan shall including actions that will be taken to ensure that emission limits are met.</p> <p>The plan must contain dates for the implementation of the identified improvement measures.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	27/12/2019

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC5  Air	<p><b>Point source emissions monitoring</b></p> <p>The operator shall monitor point source emissions to air in accordance with table S3.1. The operator shall submit a review of emissions compared to the emission limits in table S3.1 to the Environment Agency and obtain the Environment Agency's written approval of the report.</p>	27/12/2018
IC6  Site Condition Report	<p><b>Review of Site Condition Report</b></p> <p>The operator shall undertake a review of the Site Condition Report to ensure Article 22 of the Industrial Emissions Directive is complied with. The review shall include at least the following:</p> <ul style="list-style-type: none"> <li>i) consideration of oil storage areas including oil storage vessels, bunds, loading and unloading areas and other potential sources of contamination as shown in the site location plan</li> <li>ii) reference to any historical spillages, the chemicals involved and locations</li> </ul> <p>baseline soil sample results and groundwater data.</p>	27/06/2019
IC7	<p><b>Assessment of gas to oil ratio</b></p> <p>The operator shall implement a system for the monthly assessment and recording of the Gas to Oil ratio on each of the sites making up the installation. A written report detailing the system to be used shall be submitted to the Environment Agency for approval. The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	27/12/2018

## **Schedule 2 – Waste types, raw materials and fuels**

Non-extractive wastes are not accepted as part of the permitted activities and there are no restrictions on raw materials or fuel under this schedule.

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [point A1 on site plan 2 in Schedule 7]	Storage tank vent	Gas vented	-	Monthly	Monthly	Calculation to determine the quantity of gas vented over the reference
		Hydrogen sulphide	5.7 mg/m <sup>3</sup>	-	Monthly	As approved in writing with the Environment Agency
A2 [point A2 on site plan 2 in Schedule 7]	Storage tank vent	Gas vented	-	Monthly	Monthly	Calculation to determine the quantity of gas vented over the reference
		Hydrogen sulphide	5.7 mg/m <sup>3</sup>	-	Monthly	As approved in writing with the Environment Agency
A3 [point A2 on site plan 2 in Schedule 7]	Storage tank vent	Gas vented	-	Monthly	Monthly	Calculation to determine the quantity of gas vented over the reference
		Hydrogen sulphide	5.7 mg/m <sup>3</sup>	-	Monthly	As approved in writing with the Environment Agency
A4 [point A2 on site plan 2 in Schedule 7]	Storage tank vent	Gas vented	-	Monthly	Monthly	Calculation to determine the quantity of gas vented over the reference
		Hydrogen sulphide	5.7 mg/m <sup>3</sup>	-	Monthly	As approved in writing with the Environment Agency
A5 [point A5 on site plan 2 in Schedule 7]	Gas engine	Oxides of nitrogen	500mg / Nm <sup>3</sup>		Annually	As approved in writing with the Environment Agency
		Carbon monoxide	1400 mg / Nm <sup>3</sup>		Annually	
		Total volatile organic compounds (VOCs)	1000 mg / Nm <sup>3</sup>		Annually	

<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
		Engine gas feed flow rate			Continuous	As approved in writing with the Environment Agency

<b>Table S3.2 Groundwater monitoring requirements</b>				
<b>Location or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Borehole BH1; Borehole BH2; and Borehole BH3 as shown on site plan in Schedule 7	As specified in Contamination Risk Assessment: Site protection and Monitoring Programme specified in Table S1.2	Quarterly	BS ISO 5667-11:2009 and condition 3.5.3	Three borehole volumes must be purged prior to sampling. Samples must be filtered samples. In accordance with Contamination Risk Assessment: Site protection and Monitoring Programme specified in Table S1.2

<b>Table S3.3 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Gas to oil ratio of production from the installation	Gas to oil ratio	Monthly	As per agreed system specified in improvement condition IC7	
Gas vented from storage tanks	Hydrogen sulphide	Monthly or as otherwise agreed in writing with the Environment Agency	Calculation to determine the quantity of gas vented over the reference	

**Table S3.4 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
Transfer of surface water arising from the well cellars and hard standing process areas and crude oil together with admixed reservoir water to Gainsborough or Welton Oil Gathering Centre.	Well cellars and process areas	None	None	N/A	N/A	None

## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air Parameters as required by condition 3.5.1.	Oil storage tank vents A1 and A2 as indicated in Table S3.1	Every 6 months	27/06/2018
Ground water monitoring Parameters as required by condition 3.5.1	Borehole BH1; BH2 and borehole BH3 shown on site plan in Schedule 7 and as specified in Table S3.2	Every 6 months unless otherwise agreed with the Environment Agency.	27/06/2018
Process monitoring Parameters as required by condition 3.5.1	Description as indicated in Table S3.3	Every 6 months	27/06/2018 for venting of gas and date of approval of IC4 for other specified parameters

<b>Table S4.2: Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Crude oil production	bbbl
Average water cut	% of production
Average Gas to oil Ratio (GOR)	scf gas/bbls oil
Gas vented	Standard cubic feet

<b>Table S4.3 Performance parameters</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Water usage	Annually	Tonnes or m <sup>3</sup>
Energy usage	Annually	MWh

<b>Table S4.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Air	Form air 1 or other form as agreed in writing by the Environment Agency	21/06/07
Annual Production	Form Production 1 or other form as agreed in writing by the Agency	21/06/07
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	27/06/18
Groundwater	Form groundwater 1 or other form as agreed in writing by the Environment Agency	27/06/18
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	27/06/18
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	27/06/18



# Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

## Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

## **Part B – to be submitted as soon as practicable**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“approved waste management plan” means a plan of the type described in Article 5(1) of Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC, approved as part of the grant or variation of an environmental permit and as revised from time to time.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“disposal”. Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“extractive waste” means waste resulting from the prospecting, extraction, treatment and storage of mineral resources and the working of quarries, excluding waste which does not directly result from these operations.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Hazardous property” has the meaning in Annex III of the Waste Framework Directive.

“Hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

“Industrial Emissions Directive” means Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions

“List of Wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

“year” means calendar year ending 31 December.

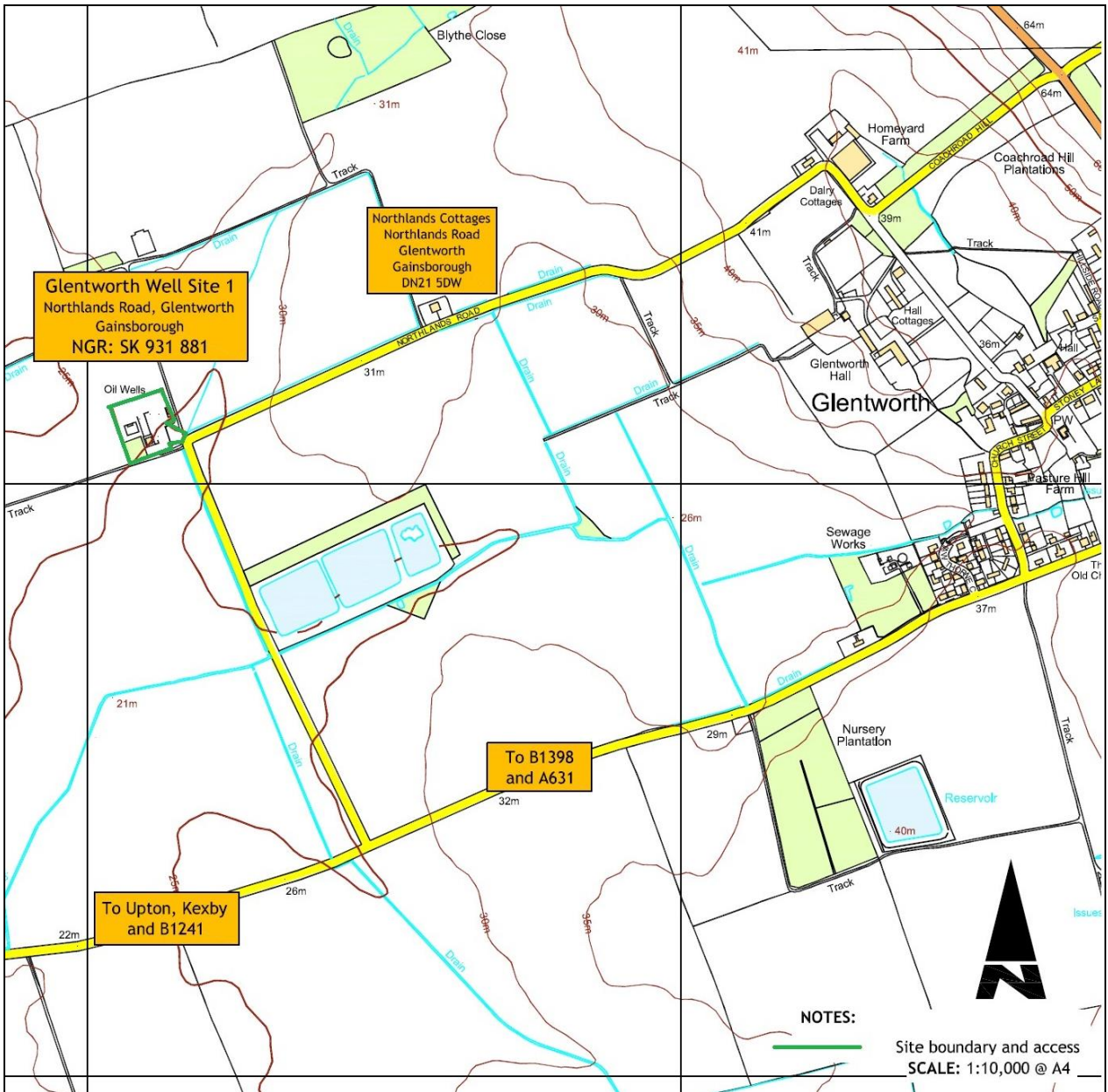
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 KPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

# Schedule 7 – Site plan

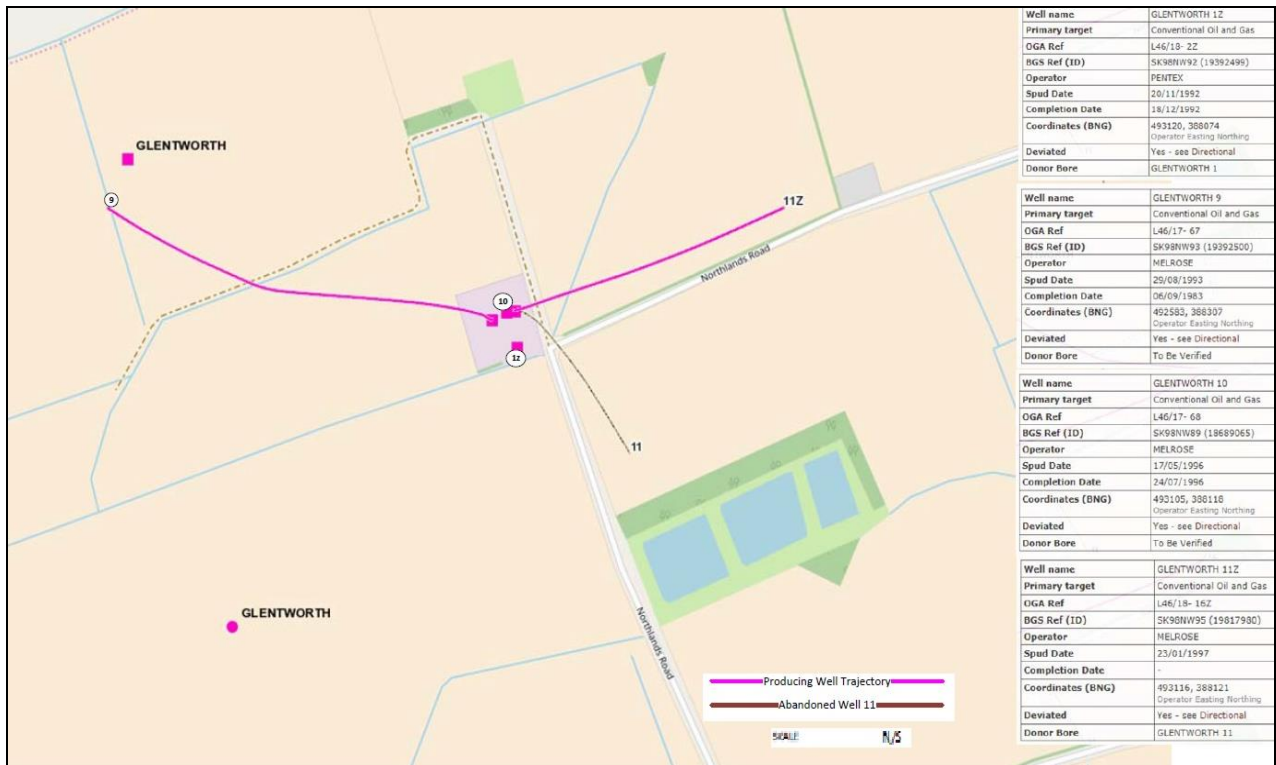
## Site plan 1: Location of Glentworth K Wellsite



## Site location 2: Site layout plan for Glentworth K Wellsite



## Site Plan 3: Trajectory of production wells at Glentworth K Wellsite



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END OF PERMIT

# Reporting forms

**Permit Number:**            **EPR/RP3437YQ**                      **Operator:**                      **IGas Energy Production Limited**  
**Facility:**                      **Glentworth K Wellsite**                      **Form Number:**                      **Air1 / 27/06/18**

## Reporting of emissions to air for the period from **DD/MM/YYYY** to **DD/MM/YYYY**

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Uncertainty <sup>[4]</sup>

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the ‘minimum – maximum’ measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ..... Date.....

(Authorised to sign as representative of Operator)

**Permit Number:      EPR/RP3437YQ**

**Operator:           IGas Energy Production Limited**

**Facility:            Glentworth K Wellsite**

**Form Number:**

**WaterUsage1 / 27/06/18**

**Reporting of Water Usage for the year YYYY**

<b>Water Source</b>	<b>Usage (m<sup>3</sup>/year)</b>	<b>Specific Usage (m<sup>3</sup>/unit output)</b>
Mains water		
Site borehole		
River abstraction		
<b>TOTAL WATER USAGE</b>		

Operator's comments:

Signed .....

Date.....

(authorised to sign as representative of Operator)



**Permit Number:   EPR/RP3437YQ**

**Operator:           IGas Energy Production Limited**

**Facility:            Glentworth K Wellsite**

**Form Number:**

**Energy1 / 27/06/18**

**Reporting of Energy Usage for the year YYYY**

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh		
Natural Gas	MWh		
Gas Oil	tonnes		
Recovered Fuel Oil	tonnes		
<b>TOTAL</b>	-		

\* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments:

Signed .....

Date.....

(Authorised to sign as representative of Operator)

**Permit Number:   EPR/RP3437YQ**

**Operator:       IGas Energy Production Limited**

**Facility:         Glentworth K Wellsite**

**Form Number:**

**Performance1 / 27/06/18**

**Reporting of other performance indicators for the period [DD/MM/YYYY](#) to [DD/MM/YYYY](#)**

<b>Parameter</b>	<b>Units</b>
Total raw material used	tonnes

Operator's comments:

Signed .....

Date.....

(Authorised to sign as representative of Operator)

**Permit Number: EPR/RP3437YQ**

**Operator: IGas Energy Production Limited**

**Facility: Glentworth K WellSite**

**Form Number:**

**Groundwater1 / 27/06/18**

**Reporting of groundwater monitoring for the period from DD/MM/YYYY to DD/MM/YYYY**

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Uncertainty <sup>[4]</sup>

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed .....

Date.....

(Authorised to sign as representative of Operator)