

Permitting decisions

Variation to permit

We have decided to issue the variation for East Glentworth Wellsite operated by Island Gas Limited.

The variation number is EPR/KP3431CX/V003.

We have also carried out an Environment Agency initiated variation to the permit.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

This variation is required as the Environment Agency has a duty, under the Environmental Permitting (England and Wales) Regulations 2016, regulation 34(1), to periodically review permits. As a result of that review we have identified a number of necessary changes we must make to your permit to reflect current legislation and best practice. These changes principally relate to:

- Implementation of the Mining Waste Directive namely the addition of extractive waste management activities; and
- Oil storage activities

The variation also aims to:

- Formalise changes to monitoring requirements and compliance limits where we have agreed them in writing, for example as the result of a hydrogeological risk assessment review.
- Address site specific issues which result in a change to the current permit, for example incorporating completed improvement conditions into the permit and removing inconsistencies.

Purpose of this document

This decision document provides a record of the decision making process. It:

- highlights key issues in the determination
- summarises the decision making process in the [decision checklist](#) to show how all relevant factors have been taken into account
- explains why we have also made an Environment Agency initiated variation
- shows how we have considered the [consultation responses](#).

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit. The introductory note summarises what the permit covers.

Brief outline of proposed process

The East Glentworth wellsite is close to the village of Glentworth in Lincolnshire, consists of two oil production wells. A beam pump is used to pump out produced fluids comprising crude oil together with admixed reservoir water which are transferred by surface flowlines to two oil storage tanks. The storage tanks are emptied as required by road tanker. No separation is carried out at the installation. The crude oil together with admixed reservoir water is transferred by road tanker to a local central gathering centre either Welton or Gainsborough for separation. The onsite storage tanks have vent stacks to allow gas entrained within the production fluids to escape to atmosphere via a single vent point.

The Operator may also undertake near wellbore treatments during the lifetime of hydrocarbon production from the well, as part of routine maintenance activities.

Routine well maintenance activities

Acid wash, hot oiling and scale removal will be carried out as part of routine maintenance activities to improve the flow of petroleum within the Carboniferous limestone formation at depths between 1200m – 1717m. We have reviewed and agreed with assessments that have been provided in the waste management plan and environmental risk assessment, which include details of operations and quantities, that determine that the treatments meet de-minimus and will not need extra groundwater permits.

Wax Dissolver Treatment

The maintenance activity is carried out using a wax dissolver Chemiphase A101001 to remove wax deposits that would have accumulated within subsurface tubulars and pipework. Certain crude oils can produce asphaltines and waxes that become deposited on the tubulars and rod strings that are not dissolved when using either hot water or oil. In these circumstances a wax dissolver chemical is used as the dissolving liquid.

About 0.25m³ of the wax dissolver will routinely be used on 3 monthly intervals or as required.

The circulated fluid returns to the oil phase. This operation does not involve the pressurization of the circulating fluids in order to penetrate the reservoir. The treatment remains in the well or near well and is recovered in the oil phase and will be put into the crude oil tank for eventual sale as product.

We have considered the acid wax dissolver treatment as described in the waste management plan and concluded that it meets the ground activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

Acid Wash

This operation involves the use of diluted acids to remove scale deposits within subsurface tubulars and pipework. The acids to be used include A-SOL, (pre-flush) and dilute hydrochloric acid (DAE 15% HCL+4), with volumes expected of not more than 0.25m³ per well.

During the abstraction process scale from minerals in the produced water mainly calcium carbonate can deposit on rods, tubes, pumps and casing perforations. This scale is typically dissolved from the system by using a 15% solution of hydrochloric acid with water.

The neutralised water carrying the dissolved scale is returned to surface and re-injected for production purposes. This operation does not involve the pressurization of the circulating fluids in order to penetrate the reservoir.

We have considered the acid wash treatment as described in the waste management plan and concluded that it meets the ground activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

Hot Water Operation

The hot water operation involves the use of hot water to remove wax deposits within subsurface tubulars and pipework. Produced water is mostly used for this operation.

Water, either potable or produced, is heated to 90°C and pumped down the well annulus and returns to the surface via the tubing. During this activity the well pumping system is operating. This process dissolves wax that is deposited on the rods and tubulars. The melted wax returns to the oil phase.

All water is returned to surface and separated and is subsequently reinjected for production purposes. The melted wax is returned to the oil phase and will be put into the crude oil tank as product. During this activity the circulated fluids remains within the well casing and tubulars and will potentially contact the surface of the reservoir. This operation does not involve the pressurization of the circulating fluids in order to penetrate the reservoir.

We have considered the hot water operation as described in the waste management plan and concluded that it meets the ground activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

Hot oil wash

This process is the same as Hot Water Washing but uses heated crude oil from the well being treated as the dissolving liquid. Crude oil is used were the face of the reservoir could be damaged if hot water was to be used. The crude oil is heated using specifically designed mobile plant known as a "hot oil truck". Crude oil is pumped from the delivery truck to the hot oiler were the temperature is raised from ambient to 90°C. This is achieved by passing crude oil through a coil which is situated in a heater chamber. A diesel fuelled burner raises the temperature within the chamber which then increases the temperature of the crude oil as it passes through the coil. Once the set temperature has been achieved the heated crude oil is delivered to the well via flexible hoses. Hot oil is then circulated down the well and back to surface pipelines which carries the heated fluids back to oil storage tanks. Any Volatile Organic Compounds being released through the heating process will be vented to atmosphere via the designated emission point along with gas associated with the oil production.

We have considered the hot oil wash as described in the waste management plan and concluded that it meets the ground activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations

Well workovers

Despite the preventative maintenance measures taken above there will be instances where a well workover is required and a workover rig is temporarily installed on site to workover the well. These operations may generate extractive mining waste. We have varied the permit to allow the operator to carry out a mining waste operation involving the management of extractive waste from production activities, not involving a waste facility. The operation will include the management of extractive waste generated by well workover.

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.

Description of the changes introduced by the variation

This is a variation to add the following 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, wax dissolver treatment and scale removal and well workover operations.

The variation also renames the permitted site to East Glentworth.

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, as amended, relating to the loading, unloading, handling and storage of crude oil.

Key issues of the decision

For clarity a permit subject to the Mining Waste Directive covers the management of extracted waste and not the oil extraction process. This variation does not permit any hydraulic fracturing. We have specified this limit in Schedule 1 of the permit under Table S1.1, activity A3.

The Operator may also undertake near wellbore treatments during the lifetime of hydrocarbon production from the well, as part of routine maintenance activities. These will include hot water washing, hot oil washing, wax dissolver treatment and acid treatment.

The purpose of hot water washing and hot oil washing is to remove the build-up of paraffin precipitates. The process involves circulating hot oil or heated produced water down the well, to the production tubing above the perforations and is circulated back to the surface. Paraffin precipitates dissolved in the hot water or hot oil at the surface are passed through a free phase separator and directed to on-site storage tanks. The hot water wash and hot oil wash does not have any contact with the reservoir formation and does not pose a risk to groundwater.

We have considered all the proposed near wellbore treatments as described in the waste management plan and concluded that it meets the ground activity exclusion as described in Schedule 22 Paragraph 3.3(b) of the Environmental Permitting Regulations.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
Consultation	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website because of the high levels of public interest in the onshore Oil and Gas Sector. The application itself is NOT high public interest.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> • Local Authority, Environmental Protection- West Lindsey District Council • Food Standards Agency • Health and Safety Executive • Mineral Planning Authority- Lincolnshire County Council
Operator	
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.
The facility	
The regulated facility	<p>We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits.</p> <p>The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.</p>
The site	
Extent of the site of the facility	The operator has provided plans which we consider are satisfactory, showing the extent of the site of the facility. The plans are included in the permit.

Aspect considered	Decision
Site condition report	<p>The operator has provided a description of the condition of the site. We have assessed the site condition report and concluded that it will need updating in order to comply with requirements of Article 22 of the Industrial Emissions Directive. We have therefore imposed an improvement condition IC9 requiring the operator to review and update their site condition report include at least the following:</p> <ul style="list-style-type: none"> 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. ii) reference to any historical spillages, the chemicals involved and locations baseline soil sample results and groundwater data. . We have included an improvement condition (IC6) in the permit to review the site condition report to ensure Article 22 of the Industrial Emissions Directive is complied with. <p>The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.</p>
Waste management plan	The operator has provided a waste management plan which we consider is satisfactory.
Biodiversity, heritage, landscape and nature conservation	The application is not within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.
Environmental risk assessment	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>There will be no increase in emissions as a result of this variation, and consequently no increase in environmental risk.</p>
Operating techniques	
Operating techniques Water Quality	<p>We have reviewed the techniques proposed by the operator and compared these with the relevant technical guidance and we consider them to represent appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p> <p>In addition we have imposed condition 3.5.1 which requires the operator to monitor groundwater quality to ensure that there is no deterioration in quality of groundwater as a result of these activities.</p>
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit. This includes the requirement for the Operator to provide a waste management plan and the information required within this. The waste management plan, including associated documents, has been assessed in accordance with these requirements and is approved subject to conditions. Condition 2.3.1 ensures that the operations are limited to those described in the WMP and in table S1.2. It also ensures that the Operator follows the techniques set out and that any deviation will require our written approval. Any significant changes will require a formal variation of the permit. Where a condition imposes a specific requirement that will take precedence over anything in the plan.</p> <p>In addition have inserted additional improvement conditions as part of the permit review to ensure these operations continue to meet the requirements of our Onshore Oil and Gas Sector Guidance, August 2016.</p>

Aspect considered	Decision
Odour management	<p>We have considered potential odour emissions from the activity during our determination. We do not consider that the activity will give rise to significant levels of odour. Condition 3.3.1 in the permit requires that emissions from the activities shall be free from odour at levels likely to cause pollution outside the site.</p> <p>We are satisfied that appropriate measures will be in place to manage odour. However, we have included condition 3.3.2 in the permit. This condition enables us to require the Operator to submit a specific odour management plan, should odour become a problem. If a plan be required in the future, once we have assessed this plan as suitable, it will form part of the permit and the Operator must carry out the activity in accordance with the approved techniques.</p>
Noise management	<p>We have considered emissions from noise and vibration during our determination. Condition 3.4 in the permit requires that emissions from the activities shall be free of noise and vibration at levels likely to cause pollution outside the site.</p> <p>We have included condition 3.4.2 in the permit. This condition enables us to require the Operator to submit a specific noise and vibration management plan, should noise and vibration become a problem. If a plan be required in the future, once we have assessed this plan as suitable, it will form part of the permit and the Operator must carry out the activity in accordance with the approved techniques.</p>
Permit conditions	
Use of conditions other than those from the template	Based on the information in the application, we consider that we do not need to impose conditions other than those in our permit template.
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit.
Changes to the permit conditions due to an Environment Agency initiated variation	<p>We have varied the permit as stated in the variation notice.</p> <p>This variation is required as the Environment Agency has a duty, under the Environmental Permitting (England and Wales) Regulations 2016, regulation 34(1), to periodically review permits. As a result of that review we have identified a number of necessary changes we must make to your permit to reflect current legislation and best practice. These changes principally relate to the improvement programme specified in condition 2.4 of the permit</p>
Improvement programme	<p>Based on the information on the application, we consider that we need to impose an improvement programme.</p> <p>We have imposed an improvement programme for reasons outline in “key issues” above.</p>

Aspect considered	Decision
Emission limits	<p>We have considered emissions to air during the determination of the application. Fugitive emissions associated with the proposed activities will be at insignificant levels which are unlikely to cause negative impact on nearby receptors.</p> <p>The Operator has provided environmental risk assessments and consideration in the WMP for the management of waste gas and we have found these to be satisfactory. Acidification and Toxic Contamination could occur from the potential release of H₂S into the atmosphere during venting.</p> <p>ELVs equivalent parameters have been set for the Hydrogen sulphide in Schedule 3 of the permit.</p> <p>Hydrogen Sulphide</p> <p>We have also required the operator to monitor emissions to air, and if trends shown an increase in emissions, then the Environment Agency will require the operator to implement a plan to manage emissions</p>
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. Condition 3.5 of the permit requires the Operator to monitor emissions to air from the oil gas vent and changes in groundwater quality attributable to reinjection of produced water.</p> <p>The Operator will keep records of the data collected, which must be submitted to the Environment Agency on a regular basis.</p> <p>We made these decisions in accordance with the requirements of our Onshore Oil and Gas Sector Guidance, August 2016 and the Groundwater Directive and to baseline report required under the Industrial Emissions Directive.</p> <p>Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.</p>
Reporting	<p>We have specified reporting in the permit.</p> <p>The reports will enable information on trends to be assessed and interventions to be carried out when required.</p> <p>We made these decisions in accordance with the requirements of our Onshore Oil and Gas Sector Guidance, August 2016 and the Groundwater Directive and to baseline report required under the Industrial Emissions Directive.</p>
Operator competence	
Management system	<p>There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.</p> <p>The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.</p>
Relevant convictions	<p>The Case Management System and National Enforcement Database have been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.</p>
Financial competence	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.</p>

Aspect considered	Decision
Financial provision	<p>We are satisfied that the waste from the site has properly been characterised as non-hazardous waste. By virtue of paragraph 9(3) of Schedule 20 to the Environmental Permitting (England and Wales) Regulations 2016 the requirements mentioned in Article 2(3) of the MWD are waived. These requirements include the need for a financial guarantee for non-hazardous waste, unless deposited in a Category A facility. So no financial guarantee can be required in respect of the fluid left in the target formation.</p>
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>

Consultation

The application was publicised at <https://www.gov.uk/government/publications/dn21-5dh-island-gas-limited-environmental-permit-application-advertisement> because of the high levels of public interest in the onshore Oil and Gas Sector. The application itself is NOT high public interest.

We consulted the following organisations:

- Local Authority, Environmental Protection- West Lindsey District Council
- Food Standards Agency
- Health and Safety Executive
- Mineral Planning Authority- Lincolnshire County Council

No objections were received from the all the Statutory consultees whom we consulted.

Responses from the public organisations listed in the consultation section

A number of responses were received from members of the public and one Non-Governmental Organisation, Frackfree Lincolnshire groups.

The following summarises the issues that were raised and the way in which we have considered these in the determination process.

Insufficient information consulted on

There were concerns that the application documents that were being consulted on did not contain a non-technical summary that summarised the application. It was argued that the summary was essential for members of the public, especially near residents, to get a fair idea of what the permit application entails

The documents that were consulted on consisted of a cover document titled “permit variation application”, which summarised the application and explained in non-technical terms the issues that were covered by the application. Detailed information about the application was provided in documents that were appended to this document. There were 11 documents that formed Appendices to the document titled “permit variation document”. Additional documents provided for consultation included the Environmental Risk Assessment. All the documents that formed part of the application were provided.

Inadequate consultation

All comments raised concerns that the consultation has been inadequate due to lack of public awareness and that we should have held a public consultation meeting.

We carried out consultation on the Application taking into account the Environmental Permitting Regulations and our statutory Public Participation Statement and the requirements of Article 8 of the Mining Waste Directive (MWD).

We advertised the Application by a notice placed at <https://www.gov.uk/government/publications/dn21-5dh-island-gas-limited-environmental-permit-application-advertisement>. This advert contained all the information required by the regulations, including telling people where and when they could see a copy of the Application.

We placed a paper copy of the Application and all other documents relevant to our determination on our Public Register. Anyone wishing to see these documents could do so and arrange for copies to be made.

We have discretion as to whether to carry out “minded to” consultation on draft permits for sites. We normally do so for sites of High Public Interest. The decision to do so is not solely based on the number of responses we receive as part of our standard 4 weeks consultation. It is also based on complexity of activity and the overall environmental risk associated with the application. This site is not classified as high public interest and we have decided that a “minded to” consultation is not warranted as the site is not a site of high Public Interest issues.

Well stimulation involving hydraulic fracturing

Concerns were raised about proposals for well stimulation using hydraulic fracturing technique which were contained in Appendix 8 of the application titled “Reg 60 Routine Well Maintenance Treatments and dated 29/06/2016”.

We have not approved this document as an operating technique. The operating techniques that we have approved are those listed in Table S1.2 of the permit. In Table S1.1 which includes activities permitted for this site, we have also specifically excluded well stimulation by hydraulic fracturing. If in future the Applicant decides it wishes to proceed to either any different or additional prospecting or production activities other than those approved by this permit, a variation of the permit will be required.

Any such Application would be determined on its merits and be subject to our normal consultation process. Any Application to vary will require an amended waste management plan to be submitted and considered by us.

Late submission of application

Comments were made as to whether the Applicant was in breach of permit conditions as they submitted the application after July 2017.

The application was submitted in line with our Regulatory Position Statement 392 Environmental permitting of pre-existing onshore oil and/or gas facilities of May 2017.

Other matters outside the scope of this permit Application that the public have commented on which may be more relevant to Applications for other permissions.

Climate change and energy policy

Comments were made on the impact of fossil fuels on climate change.

Policy is made by the Government and the policy on exploitation of Shale Gas is no different to that of any other fossil fuel. The policy states “We aim to maximise the economic recovery of oil and gas from the UK’s oil and gas reserves, taking full account of environmental, social and economic objectives”.