

# Notice of variation with introductory note

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

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IGas Energy Development Limited

Stockbridge Oilfield  
Larkwhistle Farm Site  
Winchester  
Hampshire  
SO21 1HG

### **Variation application number**

EPR/YP3537YK/V002

### **Permit number**

EPR/YP3537YK

# Stockbridge Oilfield

## Permit number EPR/YP3537YK

### Introductory note

#### This introductory note does not form a part of the notice

The following notice gives notice of the variation of an environmental permit.

This variation authorises the following changes to the permit:

- The drilling of a single side-track well off the existing well STK19.
- A groundwater activity for the potential losses of drilling muds containing produced water to formation during the drilling of the side-track well, which has the potential to lead to a direct input of a pollutant to groundwater.

The schedules specify the changes made to the original permit.

The status log of a 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 WP3535MN (under PPC 2000)	Duly made 10/10/06	
Permit determined WP3535MN	30/03/07	
Transfer determined EPR/YP3533FU (Full transfer of permit WP3535MN) (under EPR 2010)	04/04/11	Transferred to Star Energy Weald Basin Limited.
Notified of change of registered office address	03/01/12	
Variation issued EPR/YP3533FU/V002	08/02/12	Varied permit issued.
Application EPR/GP3731CK/T001 (full transfer of permit EPR/YP3535FU)	Duly made 29/06/12	Application to transfer the permit in full to Island Gas Limited.
Transfer determined EPR/GP3731CK	06/08/12	Full transfer of permit complete.
Application for variation EPR/GP3731CK/V002	Duly made 30/01/13	Application to vary the permit to allow reinjection of water.
Variation issued EPR/GP3731CK	04/06/2013	Varied permit issued.
Variation determined EPR/YP3537YK/V002	17/08/15	Varied permit issued to add a mining waste operation and a groundwater activity.
Transfer determined EPR/YP3537YK	16/10/17	Full transfer of permit to IGas Energy Development Limited is complete.
Variation application (EPR/YP3537YK/V002)	Duly Made 08/02/2018	Variation application to drill a single side-track well off the existing well STK19.
Variation determined (EPR/YP3537YK/V002)	13/04/2018	

End of introductory note

# Notice of variation

## 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

### Permit number

EPR/YP3537YK

### Issued to

**IGas Energy Development Limited** ("the operator")

whose registered office is

**7 Down Street  
London  
W1J 7AJ**

company registration number 07240286

to operate a regulated facility at

**Stockbridge Oilfield  
Larkwhistle Farm Site  
Winchester  
Hampshire  
SO21 1HG**

to the extent set out in the schedules.

The notice shall take effect from 13/04/2018

Name	Date
Tim Ross	13/04/2018

Authorised on behalf of the Environment Agency

## **Schedule 1 – conditions to be deleted**

None

## **Schedule 2 – conditions to be amended**

The following conditions are amended as a result of the application made by the operator

- 2.2.2 The below ground management of extractive waste not involving a waste activity (activity A6) shall only be carried out in relation to the abandonment of wells referenced Stockbridge 20z, Stockbridge 22 and Stockbridge 23 and the drilling of the four side-track wells referenced Stockbridge 24, Stockbridge 25 and Stockbridge 26 as shown outlined in blue in site plan D and Stockbridge 19 as shown outlined in black in site plan E at schedule 7 to this permit.
- 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.

Table S1.1 is amended as follows

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
A1	S1.2 A1 (h)(i)	The loading, unloading or handling of, the storage of, or the physical, chemical or thermal treatment of crude oil.	From wellhead to storage prior to onward transport for further treatment or for oil refining.
<b>Directly Associated Activities</b>			
A2	Raw Materials	Handling and storage of treatment chemicals	All materials stored to have Secondary Containment.
A3	Boiler operation	Gas/gas-oil boiler/Heater	Includes oil receipt and storage, and demineralised water plant.
A4	Re-injection of produced water	Re-injection of produced water via re-injection wells within the installation.	From storage, through re-injection pumps to well head. This activity shall only continue beyond 15 months of issue of the variation EPR/GP3731CK/V002 following approval of IC13, IC14, IC15 and IC16.
A5	Treatment and storage of hazardous waste waters and sludge	Physico-chemical treatment of waste waters containing oils and storage of sludge. Waste water/sludge generated from onsite tank washing and well heads.	Treatment capacity < 10 tonnes per day.
<b>Description of groundwater activity</b>			<b>Limits of activities</b>
A6	A groundwater activity for the use of produced water to make up the water based muds used for drilling the three side-track wells.		The groundwater activity applies to the potential losses of Water Based Mud containing produced water to the Great Oolite formation during the drilling of three side-track wells (Stockbridge 24 at Larkwhistle Farm, Stockbridge 25 at Hill Farm and Stockbridge 26 at Folly Farm).

A8	Re-injection of produced water to ground from the extraction of hydrocarbons via borehole STK-19 and side-tracked STK-27 at Hill Farm.	<p>Discharge of produced water from the extraction of hydrocarbons into borehole STK-19 (NGR 443487 136422 at surface) and side-tracked STK-27 at Hill Farm.</p> <ul style="list-style-type: none"> <li>• The discharge shall only be made in the Great Oolite Formation between 1,046 – 1,111 m TVDSS.</li> <li>• Re-injection borehole STK-19 shall not extend deeper than 1,109 m TVDSS.</li> <li>• Un-perforated linings shall extend to a minimum depth of 1,046 m TVDSS.</li> <li>• The injection pressure shall not exceed the fracture pressure of the formation.</li> <li>• Reinjection is for production support only.</li> </ul> <p>The activity will be carried out in accordance with the documents specified in Table S1.2 and S1.3.</p>
A9	A groundwater activity for the use of water based mud containing produced water and drilling additives	<ul style="list-style-type: none"> <li>• The groundwater activity is limited to the potential losses of water based mud containing produced water and drilling additives into the Great Oolite Formation during the drilling of side-tracked injection well Stockbridge 19 at Hill Farm.</li> <li>• The activities and drilling activities shall be limited to those described in the Waste Management Plan of January 2018 and referenced (STOCK-EPA-005))</li> </ul>
<b>Description of activities for waste operations</b>		<b>Limits of activities</b>

A7	<p>The management of extractive waste from side-track drilling activities, not involving a waste facility.</p> <p>The management of extractive waste generated by well abandonment.</p>	<p>Permitted waste types shall conform to the description in the approved waste management plan.</p> <p>Drilling additives shall be approved in writing by the Environment Agency prior to use.</p>
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Table S1.2 is amended as follows

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to section B 2 in the Application, Sections B 2.1 and B 2.2	29/09/2006
The response to Improvement Condition IC 7	Cellar hydraulic testing shall be carried out at least annually, or after periods of well head maintenance at each of the sites within the installation. The procedures and the results of all such hydraulic tests shall be submitted in writing to the Agency within two calendar months of completion.	Signed off 20/11/2008
Application for variation EPR/GP3731CK/V003	The response to Part C2 and Part C3 of the application.	30/01/2013
Application for variation EPR/GP3731CK/V003	The response to Part C2 and Part C3 of the application.	08/06/2015
Application for variation EPR/GP3731CK/V003 further information received	Further details of groundwater impact assessment and raw material safety data sheets.	09/07/2015
Application for variation EPR/GP3731CK/V003 response to schedule 5 notice dated 13/07/15	Updated groundwater impact assessment and details of predicted gas volumes and composition.	16/07/2015
Application for variation EPR/GP3731CK/V003 response to schedule 5 notice dated 13/07/15	Application form B6 and supporting documents for groundwater activity authorisation.	17/07/2015
Waste Management Plan	Waste Management Plan (Date: Jan 2018 ; Ref: STOCK-EPA-005)	21/03/2018
Environmental risk assessment	Environmental Impact Assessment Site Condition Report	25/01/2018 21/03/2018
Hydrogeological Risk Assessment	Updated Hydrogeological Risk Assessment	09/02/2018
Non-Technical Summery	Updated Non-Technical Summer	21/03/2018

Table S3.2 referred to in condition 3.1.1 is amended as follows

<b>Table S3.2 Point source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
<b>Larkwhistle Farm</b>						
W1 on site plan in schedule 7 to site soakaway	Note 1	Surface water interceptor	Note 1	Note 1	Note 1	Note 1
W6 on site plan in schedule 7. Re-injection well.	Note 2	Produced water tank	Note 2	Note 2	Note 2	Note 2
<b>Folly Farm</b>						
W2 and W3 on site plan in schedule 7 to site soakaway.	Note 1	Surface water interceptor	Note 1	Note 1	Note 1	Note 1
W8 on site plan in schedule 7. Re-injection well.	Note 2	Produced water tank	Note 2	Note 2	Note 2	Note 2
<b>Hill Farm</b>						
W4 and W5 on site plan in schedule 7 to site soakaway	Note 1	Surface water interceptor	Note 1	Note 1	Note 1	Note 1
W7 on site plan in schedule 7. Re-injection well.	Note 2	Produced water tank	Note 2	Note 2	Note 2	Note 2
Sidetrack Stockbridge 19 from 771metre TVDSS depth at SU43487 36422 to SU 44060 36847 at 1108 metre depthTVDS	Note 2	Note2	Note2	Note2	Note 2	Note 2
<p>Note 1: Currently no parameters, limits, reference period, monitoring frequency or methods set. Subject to IC15.</p> <p>Note 2: Currently no parameters, limits, reference period, monitoring frequency or methods set. To be agreed in writing with the Environment Agency following completion of IC13, IC14, IC16.</p>						



3.3.1 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 S3.5

<b>Table S3.3 Discharge points</b>			
<b>Effluent Name</b>	<b>Discharge Point</b>	<b>Discharge point NGR</b>	<b>Receiving water/Environment</b>
Losses of water based mud containing produced water and drilling additives into the Great Oolite Formation during the drilling of side-tracked injection well Stockbridge 19 at Hill Farm.	Side-track Stockbridge 19 from 771metre TVDSS depth at SU43487 36422 to SU 44060 36847 at 1108 metre depthTVDS	Side-track Stockbridge 19 from 771metre TVDSS depth at SU43487 36422 to SU 44060 36847 at 1108 metre depthTVDS	Great Oolite Formation via injection borehole

### **Schedule 3 – conditions to be added**

3.3.3 The groundwater activity A9 shall only be carried out within the Great Oolite formation during the drilling of the side-track well numbered Stockbridge 19 as shown outlined in black in site plan E at schedule 7 to this permit.

## Schedule 4 – amended plan

Amended plan attached

### SITE PLAN E Stockbridge Oilfield plan - sidetrack wells 19.



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