



This form will report compliance with your permit as determined by an Environment Agency officer

Site	Kirby Misperton A Wellsite		Permit Ref	402444 DB3002HE	
Operator/ Permit holder	Third Energy U K Gas Limited				
Date	27/07/2017		Time in		Out
What parts of the permit were assessed	PO2 Hydraulic Fracture Plan				
Assessment	Report/data review	EPR Activity:	Installation	Waste Op	X Water Discharge
Recipient's name/position	Operations Director				
Officer's name	EA Officers		Date issued	27/07/2017	

Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our [Compliance Classification Scheme](#) (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your [local office](#).

Permit Conditions and Compliance Summary

Condition(s) breached

Permit Conditions and Compliance Summary			Condition(s) breached
a) Permitted activities	1. Specified by permit	A	
b) Infrastructure	1. Engineering for prevention & control of pollution	A	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	N	
	5. Plant and equipment	N	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	N	
	3. Materials acceptance	N	
	4. Storage handling, labelling, segregation	N	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	A	
e) Emissions	1. Air	N	
	2. Land & Groundwater	A	
	3. Surface water	N	
	4. Sewer	N	
	5. Waste	N	
f) Amenity	1. Odour	N	
	2. Noise	N	
	3. Dust/fibres/particulates & litter	N	
	4. Pests, birds & scavengers	N	
	5. Deposits on road	N	
g) Monitoring and records, maintenance and reporting	1. Monitoring of emissions & environment	A	
	2. Records of activity, site diary, journal & events	N	
	3. Maintenance records	N	
	4. Reporting & notification	A	
h) Resource efficiency	1. Efficient use of raw materials	N	
	2. Energy	N	

KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk), A = Assessed (no evidence of non-compliance), N = Not assessed, NA = Not Applicable, O = Ongoing non-compliance – not scored

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This report should be clear, comprehensive, unambiguous and normally completed within 14 days of an assessment.

The Hydraulic Fracture Plan, in response to Pre-Operational Condition 2 of the permit, was received on the 29th June 2017 and is currently under assessment.

During our assessment process of the submitted plan, we have highlighted a number of areas where we require further information and/or clarification. These are listed below.

Action: Please resubmit the Hydraulic Fracture Plan with further explanation and clarification to cover all requirements in the table below.

Section	Query
2.3 Well integrity	<p>Please expand section 2.3 setting out what would be done if there were a loss of well integrity, and that operations would not proceed if there was a risk of emission to the environment.</p> <p>Section 7 and Section 2.3 need to align and the operator must inform the regulators of any loss of well integrity without delay, prior to launching an enquiry.</p>
3.2 Operational Phases	<p>Please confirm that a baseline log will be run for temperature and neutron logging.</p>
4.1 In Situ Stress, Geomechanics and Structural Geology Fig 4-4 and 4-5	<p>Please explain the assumptions behind why only frac stage E has been presented.</p> <p>Please clarify what horizon has been contoured for Figure 4.4.</p> <p>Please provide further comment on the assessment carried out for fault reactivation potential and further explanation of what is meant by 'relatively low level'.</p> <p>Resolution of small faults: Please state the minimum fault throws that you consider to be interpretable from the 3D seismic data within the operational boundary. In this context, please confirm whether or not the expression 'sub-seismic fault' (see pages 21 and 35) refers to faults smaller than this.</p>
4.2 Baseline Seismicity (Bullet point 4)	<p>Please explain the depth range over which these detection thresholds are expected to apply.</p>
5.4 Definition of Operational Boundary	<p>Please clarify that any events occurring outside the operational boundary refers to events solely outside this volume and clearly not linked to an event cluster within the volume.</p>

5.6 Shallow Borehole Monitoring Array	<p>Please provide further justification on why KM-7 is an unsuitable option for the monitoring array.</p> <p>Please confirm how groundwater sampling from BH-E will be managed with the monitoring array also in place.</p> <p>Please expand on how it will be demonstrated that the downhole geophones are functioning correctly on site and how noise from pumping and site activities will be filtered out.</p>
5.9 Seismic data processing	<p>Please clarify and expand on what is meant by the term 'perform as designed' and at what level of performance would operations be paused to allow restoration of the system performance.</p> <p>If no "dots in the box" are reported a detection threshold estimate should be provided for in that period.</p> <p>Please include the levels of noise and signal strength on which the assessments were based, and how noise problems will be managed.</p> <p>Please confirm whether or not the event location error includes the uncertainties in the velocity model.</p>
6.3 Temperature Logging	<p>Please confirm how the timing of the temperature logging will be managed to ensure that the most accurate data is provided.</p>
6.5 Seismic Monitoring	<p>Please confirm that you will pause injection if monitoring indicates that fractures, as well as fluids, are propagating upwards along a previously undetected fault.</p>
7.1 Reporting to Regulators	<p>Please include that you will supply a final comprehensive report to the EA confirming operations carried out, monitoring results from the hydraulic fracturing operations, final modelled fractures and resulting mining waste facility.</p>
Document Clarifications	
4.1 In Situ Stress, Geomechanics and Structural Geology Fig 4-4 and 4-5	<p>The A-B section lines are presented at different distances from the operational boundary. Please correct this.</p>
5.3 Seismic Mitigation Decision Tree	<p>The Well Integrity box at the top of the decision tree does not reflect the requirement for the operator to notify the Environment Agency, merely that HSE is to advise the EA in event of well integrity issues. Please correct this.</p> <p>Please include the full references for the Shapiro (2010) and Hallo et. al. (2014) papers, in the reference list.</p>
5.5 Surface-based Seismic Monitoring Array	<p>The scale is incorrect on Figure 5-4. Please correct this.</p>
5.6 Shallow Borehole Monitoring Array	<p>This is referred to as BH-E in the permit. Please correct this reference.</p>
6.2 Injectivity Monitoring	<p>For the sentence, 'If an updated frac model indicated that a frac will propagate beyond the permitted boundary, then the injection parameters can be adjusted to prevent this from occurring', please confirm that this is the action that <u>will</u> be taken.</p>



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Section 3- Enforcement Response **Only one of the boxes below should be ticked**

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.

We will now consider what enforcement action is appropriate and notify you, referencing this form.

Section 4- Action(s)

Where non-compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.

Criteria Ref.	CCS Category	Action Required / Advised	Due Date
See Section 1 above			

Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you.

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.
- A civil sanction Enforcement Undertaking (EU) offer may also be available to you as an alternative enforcement response for this/these offence(s).

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance which could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General Information

Data protection notice

The information on this form will be processed by the Environment Agency to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). The Environment Agency may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

The Environment Agency may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The Environment Agency will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within 28 days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with the officer's line managers. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 03708 506 506 (Mon to Fri 08.00–18.00) and ask for the Customer Contact team or send an email to enquiries@environment-agency.gov.uk. If you are still dissatisfied, you can make a complaint to the Ombudsman. For advice on how to complain to the [Parliamentary and Health Service Ombudsman](#) phone their helpline on 0345 015 4033.