



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

Site	Preston New Road Exploration Site EPR/AB3101MW		Permit Ref	UP3431VF		
Operator/ Permit holder	Cuadrilla Bowland Limited					
Date	02/11/2018		Time in	10:45	Out	17:15
What parts of the permit were assessed	Hydraulic Fracture Plan, Pumping Operations, Flowback					
Assessment	Site Inspection	EPR Activity:	Installation	X	Waste Op	Water Discharge
Recipient's name/position	HSE&P Manager					
Officer's name	EA Installations		Date issued	22/11/2018		

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

<b>Number of breaches recorded</b>	0	<b>Total compliance score</b> (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.

This was the first unannounced inspection since the start of the hydraulic fracturing phase.

### The aims of visit:

- Establish coiled tubing flow rate measurement method.
- Review flowback procedures.
- Review occurrence of flare operations on 1 and 2 November.
- Microseismic activity and daily morning reports.

### Coiled Tubing & Flow Measurement

Further to the audit on 19 October, further discussions took place on the flow rate measurement through the coil tubing (CT). Follow up to this work is included in the audit report from 19 October (UP3431VF/0317137) including follow up actions.

### Flowback separation

Flowback management is operated by a contractor under the direction of the operator within a designated flowback area of the site. The area is surrounded by a temporary bund in addition to the well pad lining. All flowback to date has been reused and therefore no waste flowback has been produced and removed from site.

The management of flowback was assessed against the Waste Management Plan (WMP).

The process flow for flowback was discussed with the contractor. Flowback fluid goes through the open topped flowback tanks before being stored for reuse. If gas is expected or detected in the flowback, it is diverted to the sand filter and separator. Any separated gas is then sent to the flare. Flowback fluid is sent to the frac tanks for reuse in the fracturing process. Please refer to CAR form UP3431VF/0317139 in relation to the use of open topped flowback tanks.

Section 4.5 of the WMP states that exact monitoring locations for flowback fluid will be developed once a contractor has been selected and the site set up. Comprehensive field records were held by the contractor which recorded the times and flow. The flowback is also sampled for pH, salinity and specific gravity.

A sample of flowback was collected at the choke manifold sample point on 22 October and sent to the laboratory for analysis. The results of the analysis were viewed on site. The Total Dissolved Solids were noted to be 5260mg/l which is well below the 250,000mg/l limit set in the WMP for reuse of flowback in the frac fluid (section 4.5). This was sampled at the first available opportunity as it was the first time flowback had been returned from the formation. As hydrochloric acid has been used for the purposes set out in Section 2.3 of the WMP, the sample of flowback fluid was analysed for chloride, sodium, dissolved solids and alkalinity as required.

The operator is reminded that permit condition 3.5.2 states that "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". These records will be reviewed during a later audit.

The contractors explained that when flowback occurred on 1st and 2nd November, they used the sand filters as they knew that there could be a risk of gas being present so did not flow into the open tanks first. Officers also inspected the UV treatment system. Cuadrilla confirmed that a biocide had not been used.

A board was located in the office on site recording the levels of flowback in the frac farm tanks.

Section 5 onwards of the WMP relates to waste flowback, which has not yet been produced. These sections of the

WMP will be assessed during an audit when waste flowback is produced.

### **Flaring & Methane Emissions**

On the 1<sup>st</sup> November gas was sent to the flare from the separator. The gas was not burnt at the flare on this occasion due to the very low volume of natural gas. The gas was picked up on the onsite monitoring instruments at very low levels (5ppm over ten minute period). We acknowledge that the level of methane detected was significantly below anything that would have an impact on human health or constitute a risk of explosion and there was no environmental impact. Gas was managed in this way for safety purposes and does not constitute a breach of the permit.

On the morning of the 2<sup>nd</sup> November gas was again sent to the flare from the separator. On this occasion a support fuel (propane) was used to assist combustion. There was no visible increase in methane emissions on the boundary monitoring equipment.

We are currently reviewing what is best practice including the benefits of using a support fuel to assist the combustion of very low levels of natural gas against the management of natural gas without combustion through the flare.

Cuadrilla showed the record of daily ambient air monitoring checks which are recorded when the system was refreshed and when there are any issues and elevations in emissions.

### **Hydraulic Fracturing Stages 38 and 35**

A mini frac of stage 38 was completed prior to officers' arrival on site. A further mini frac was carried out on stage 35 during the visit. This operation started at approximately 4pm with acid injection followed by frac pumps at 4.35pm. Maximum coiled tubing flow was recorded as approximately 0.15 m<sup>3</sup>/min throughout on CT pump rate 1. CT Pump rate 2 hovered around zero.

### **Daily Morning Reports**

The daily morning reports for activities taking place on 30th October - 2nd November were reviewed and contained the following information.

30/10/18 - mini frac on stages 41 and 39 of 15.7m<sup>3</sup> and 15.3m<sup>3</sup> respectively containing injection water without proppant.

31/10/18 - mini frac on stages 37 and 40 of 13.3m<sup>3</sup> and 13.3m<sup>3</sup> respectively containing injection water without proppant. Flowed back stages 31 and 32 - 12.1m<sup>3</sup> for reuse.

01/11/18 - no operations

02/11/18 - mini frac on stages 38 and 35 of 14.3m<sup>3</sup> and 14.25m<sup>3</sup> respectively containing injection water without proppant. Flowed back stages 30 and 31 - 8.61m<sup>3</sup> stored for reuse.

We have not detected a breach of the sub-surface permit boundary and all fractures were within the shale rock formation.



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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 <b>major</b> environmental effect	60
C2	A non-compliance which could have a <b>significant</b> environmental effect	31
C3	A non-compliance which could have a <b>minor</b> environmental effect	4
C4	A non-compliance which has <b>no</b> 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](mailto: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.