



**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	27/02/2019	Time in	09:45	Out	17:00
What parts of the permit were assessed	Flare Operations				
Assessment	Audit	EPR Activity:	Installation: X	Waste Op:	Water Discharge:
Recipient's name/position	Planning, Permitting and Environmental Manager				
Officer's name	EA Officers	Date issued	28/03/2019		

**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	CCS Score	Condition(s) Breached
<b>a) Permitted activities</b>	1. Specified by permit	C3	2.1.1
<b>b) Infrastructure</b>	1. Engineering for prevention & control of pollution	N	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	N	
	5. Plant and equipment	N	
<b>c) General management</b>	1. Staff competency/ training	N	
	2. Management system & operating procedures	C4	2.3.1(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	C4	3.5.1(a)
	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>	3	<b>Total compliance score</b> (see section 5 for scoring scheme)	4.2
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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.

An audit was carried out on flaring and gas management which forms the third part of the Environmental Management and Monitoring Plan (EMMP) audit. The scope of the audit was to assess compliance against the Environmental Permit conditions, including those relating to the flare operations procedure and EMMP. The audit comprised both on-site inspection and off site technical evaluation and assessment of data, environmental monitoring results and submissions that concluded 20 March 2019.

### Findings

This audit has covered a period of low levels of gas returns associated with the extensive use of nitrogen to promote gas return (nitrogen lift). Furthermore, flare operation was intermittent, rather than continuous over the period.

The specification of the two flares complies with required permitted limits for maximum flowrate and retention time. Records were reviewed of the Factory Acceptance Tests, commissioning and pre-flowing checklist and results were acceptable. Training records/certificates were reviewed for key flare operations staff and staff were found to have the appropriate level of training' as provided by the flare supplier.

Flare temperature data was reviewed. Quarterly flare temperature data (until 31/12/18) was provided by the operator as required by the permit. The flare operations procedure requires high temperature combustion of greater than 800C. The flare temperature reached above 800C on six occasions. At other times the gas to the flare typically had a low concentration of methane due to high volumes of nitrogen added to unload the well of flowback fluid. During the audit calculations were provided by the operator on the quantity of nitrogen required to do this and the resulting effect on methane concentration.

Typical methane concentrations were less than 40% due to the nitrogen added for uplift. Tests were carried out by the operator on the minimum methane concentration within the gas that would burn. When methane concentrations were less than 40% the flare temperature did not increase (i.e. there was no combustion). The operator holds support fuel (propane) on site, however, did not use it as a supplemental fuel after five minutes when there were inadequate quantities of combustible well returns.

During the audit the operator demonstrated through calculations that significant quantities of support fuel (propane) would have been needed in order for it to combust. There was an occasion when the methane concentration was 30% and a quantity of support fuel was added for 3 minutes but it did not combust as the quantity of support fuel was too low. We have carried out our own calculations and verified that significant quantities of propane would be required.

Charts of gas flow, temperature and methane concentration over time were viewed. Methane concentrations were measured at 30-minute intervals and not 10-minute intervals as approved by the Environment Agency.

Flare data including methane concentration, combustion temperature and gas flow rates were available on a screen in the control room for the flare operative's review. A morning report was produced for internal use by the operator which provides a summary of all these parameters.

Data from the continuous ambient methane monitor at the site boundary was reviewed. There have been 4 reports to the EA for methane concentrations above the external notification threshold and 2 other occasions when the methane concentrations were above the internal threshold. The internal threshold (5.0ppm) and external notification threshold (7.1ppm) for methane are set by the Environmental Management and Monitoring Plan. These thresholds are set at these values in order to provide an alert that there is an elevation in the level of methane being measured which may not be a natural variation in the background level of methane. An exceedance of the lower threshold, which can be thought of as an internal 'action level' prompts a review of onsite activities to determine the likely source and cause of the observed elevations (whether onsite or offsite). An exceedance of the upper threshold will additionally trigger a report to the Environment Agency within 24 hours.

On 14 January the ambient methane monitor at the site boundary developed a fault and no data was reported until the following day when the monitor was replaced. The operator complied with their Emissions Management and Monitoring Plan by deploying and activating the replacement monitor as soon as reasonably achievable.

### **Summary of Non-Compliances**

Three non-compliances were found during this audit:

- Non-compliance with permit condition 2.1.1 (category 3).
  - This permit condition states that the operator is only authorised to carry out certain activities. The permitted activity covering flaring of methane specifies that there should be 'no venting except where necessary for safety purposes'. The flare register provided by the operator up until 31 December 2018 (quarterly reporting as required by the permit) shows that venting had occurred for reasons other than for safety purposes.
  - In total, it is estimated that between 2.7 tonnes and 6.8 tonnes of methane was vented through the flare.
  - There were short periods when this vented methane was recorded by the methane monitor at the site boundary, for example on 14 January 2019 for 35 minutes and on 20 January 2019 for 80 minutes.
  - On these occasions we recognised that this was not intentional. Waste gasses were diverted to the flare with the intention of being combusted. However, flaring was not possible due to the volume of nitrogen used over a sustained period creating insufficient combustible feed gas to the flare (see 'Findings' section for further details).
  - The resulting emissions had minimal to no impact on the environment and did not represent a risk to people. We have reviewed data recorded at air monitoring stations around the site for benzene, toluene, ethylbenzene and xylenes (BTEX) over the period of venting and there were no exceedances of the UK air quality objectives and no likelihood of health impacts. We have assessed this non-compliance as category 3, associated with a minor impact on the environment.
  - No impact assessment or management plan had been submitted for this

operation in the permit application and no assessment of appropriate measures was provided which could be used to mitigate potential pollution.

- We consider that the risk of incurring elevated levels of methane at the site boundary was reasonably foreseeable in these circumstances.
  - Any change to this activity would require a variation to bring operations in line with the permit. This would in turn require an impact assessment and or management plan outlining an assessment of appropriate measures which could be used to mitigate potential pollution.
- Non-compliance with permit condition 2.3.1 (a) (category 4). This permit condition requires the operator to follow the 'flare operations procedure' operating technique. The flare operations procedure was not followed, in particular Table 5.1 of the procedure states that 'where sustained periods, but inadequate quantities of combustible well returns are encountered, the flares will be supported with supplemental fuel after five minutes'. Contrary to the approved procedure, the operator chose not to add the support fuel (propane) as this may have resulted in increased emission, there being a high probability that propane could also have been released unburnt. This procedural non-compliance is scored as a category 4. Operational procedures are required to be reviewed to take account of high volumes of nitrogen being present in gas returns. Notwithstanding, the permit specifies 'no venting except where necessary for safety purposes'.
  - Non-compliance with permit condition 3.5.1(a) (category 4). This permit condition requires the operator to undertake continuous methane concentration monitoring in flare feed gas. The operator monitored at a frequency of 30-minute intervals instead of 10-minute intervals as stated by their procedure. We consider that there was no impact on human health, quality of life or the environment from this non-compliance and therefore scored a category 4 non-compliance. Operational procedures are required to be submitted to take account of any updated monitoring frequency.

 Environment Agency	<b>EPR Compliance Assessment Report</b>	Report ID: UP3431VF/0328941	
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Operator/ Permit	Cuadrilla Bowland Limited	Date	27/02/2019

<b>Section 3- Enforcement Response</b>		<b>Only one of the boxes below should be ticked</b>	
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.			X

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			
A1	C3	Any change to this activity would require a variation to bring operations in line with the permit. This would in turn require an impact assessment and or management plan outlining an assessment of appropriate measures which could be used to mitigate potential pollution. Operator to provide an update to the Environment Agency on their decision.	30/04/2019
C2	C4	Update the flare operations procedure PO10 to cover the scenario of an excess of nitrogen in the feed gas to the flare preventing lack of combustion, or incomplete combustion of natural gas and what actions will be taken to comply with the permit. Operator to provide an update to the Environment Agency on their decision.	31/05/2019
G1	C4	Update the EMMP to clarify the correct monitoring frequency for methane concentration in the flare feed gas. Operator to provide an update to the Environment Agency on their decision.	31/05/2019

## 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.