

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

Site	Hafod Quarry Landfill	Permit Ref	PP3139GB		
Operator/Permit holder	Cory Environmental (Central) Ltd				
Regime	Installations				
Date of assessment	15/02/2018	Time in	10:00	Out	15:30
Assessment type	Audit				
Parts of the permit assessed	Cell 4 gas field				
Lead officer's name	McClymont, James				
Accompanied by	Roberts, Anthony				
Recipient's name/position	Ian Craven/ Area Manager	Date issued	21/02/2018		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). 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	CCS Category	Condition(s) breached
E1 - Emissions - Air	C3	3.3.1

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.
A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,
O = Ongoing non-compliance, not scored.

Number of breaches recorded	1	Total compliance score (see section 5 for scoring scheme)	4
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If the Number of breaches recorded is greater than zero, please see Section 3 for 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 (eg. 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 advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Cell 4 gas field audit, 15/02/2018. Audit results are appended.

Prior to the audit a meeting was held in the site office between Ian Craven and Graham Ball (of Enovert) and James McClymont and Tony Roberts (of NRW). During this meeting several topics related to landfill gas and leachate management at the site were discussed, including recent monitoring data collected at the Type 1 and Type 2 wells in Cell 4.

Following the meeting, all parties conducted a gas field audit. This began with a visit to the gas compound where the gas flow and quality to the engine was recorded, see appended results. A walkover survey of the active Cell 4 was then undertaken, including a visual assessment, the measurement of landfill gas concentrations at landfill gas and leachate wells using a GA5000 gas analyser (operated by Enovert), and the measurement of point source methane emissions using a Gazomat (operated by NRW). Enovert also took measurements using their own Gazomat which, when cross-checked on site, were very similar to the readings taken by NRW.

Audit findings were provided to Operator by e-mail on 16/02/2018. An initial response was received via e-mail from Ian Craven on 16/02/2018, and a more detailed response was received via e-mail from Graham Ball on 19/02/2018.

The main findings of our meeting and audit are detailed below:

The flare was seen to have sooty deposits around the rim and down the outside of the stack. This is evidence of incomplete combustion. Graham Ball confirmed that the flare was last serviced on the 24/03/2017. The fault has been identified as the reduced reaction time of the flare louvres, which is scheduled for rectification by an engineer from Uniflare on the 22/02/2018.

Action 1: Please update NRW regarding the status of the flare by 16/03/2018.

The introduction of a second engine is proposed with the de-rating of each to 600kW maximum demand. NRW requested that the increased demand for gas is reflected in the initial balancing strategy in the gas field, with particular reference to Type 2 wells which are more passive.

Graham Ball envisages that the additional generation will not alter the gas extraction regime, and has confirmed that Enovert operate the field based on vacuum limits and gas quality and any excess gas is diverted to the flare. Graham also noted that the additional generation, once permitted by Ofgem, will be an improvement to the current situation.

The Operator provided annual average flow and methane concentrations for the input to the gas utilisation plant. NRW requested weekly flow and quality data for the last 24 months, because it is considered that the averages supplied are not representative of field performance over a shorter time frame.

This data has been received and will be reviewed by NRW in due course.

Several small leachate outbreaks were identified at the toe of Cell 4 batter. See Figure 1 below:



Figure 1: Toe of Cell 4 batter

There appears to be perched leachate entrained in the waste contributing to the outbreaks at the toe of the batter. It appears that the leachate outbreaks are currently being contained within the engineered area by a trench and clay bund.

There were also methane emissions at the toe of the batter, up to a maximum of 260,000 ppm. Ambient concentrations of methane at the lower levels of the Cell 4 batter, close to the leachate trench were high, peaking at 1000 ppm in air at the eastern end. The concentrated leachate and associated methane emissions were odorous locally, but no odour complaints have been received off-site. Previous phases have shown similar issues culminating in large pressure build up in the landfill causing advective flows out of the batter as waste levels build.

Proposals to address these issues have been provided by Graham Ball in the form of a 'Leachate Management Action Plan'. Enovert consider that the management plan will address the elevated leachate levels in this area, thereby maximising gas abstraction via the existing infrastructure. Graham Ball has stated that it should be noted that the angle of this waste flank has, deliberately, been reduced by Enovert from previous equivalent waste flanks.

Action 2: Please provide NRW with an update on the progress of the 'Leachate Management Action Plan' by 16/03/2018.

Action 3: Please provide NRW with a plan showing where the edge of the liner is in relation to the clay bund and trench/leachate outbreak area at the toe of Cell 4, by 16/03/2018.

As displayed in the attached tables, some features had significant methane emissions from the base, including some of the Type 2 gas wells.

Action 4: These features should be sealed as soon as possible, and before 16/03/2018.

Graham Ball has confirmed that Enovert will be undertaking regular Gazomat surveys; and should additional works be necessary, then these will be undertaken swiftly.

Type 2 well HF00W079 showed positive pressure with 61%/40% CH₄/CO₂ ratio, & oxygen ingress was noted. Graham Ball has confirmed that this well was isolated during the audit, was raised on 16/02/2018 and is now under extraction.

Other than Type 2 well HF00W085, extraction pressures were very low in most wells. This may be due in some cases to the balance between gas production pressure and extractive pressure.

Some of the Type 1 wells show signs of blockage, and NRW requested that the Operator submit a

plan (including further details of the proposed venturi design leachate extraction system) to remove the blockages and reduce the leachate levels where appropriate. Graham Ball outlined that Enovert will be installing a liquid extraction system progressively to wells with suitable access showing elevated liquid levels. This system has been trailed in well HF00W064, where prior to this system a conventional electric submersible was not sufficient.

The effectiveness of the use of venturi system should be detailed in the response to Action 2 above.

Non-compliance

Permit condition 3.3.1 states that fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures have been taken to prevent or where that is not practicable, to minimise, those emissions.

Methane emissions were detected at several features on Cell 4, this includes at the base of landfill gas wells, the base of leachate wells and above holes created by leachate outbreaks on the toe of Cell 4 batter, as detailed in the attached tables. Ambient concentrations of methane at the lower levels of the Cell 4 batter, close to the leachate trench, peaked at 1000 ppm in air at the eastern end.

The above is deemed a breach of condition 3.3.1 and has been scored a Category 3 breach of the permit requirement.

It is considered that these significant emissions may have attracted a higher CCS score, however, it is acknowledged that the Operator has in place an action plan to address the issues. It has also been confirmed that Enovert will be undertaking regular Gazomat surveys, and should additional works be necessary, then these will be undertaken swiftly.

The Operator has stated that the leachate outbreaks at the toe of Cell 4 are being contained within the engineered cell, however, to avoid a permit condition breach this situation should be carefully managed.

As proposed by the Operator, NRW intends to visit the site for a repeat audit, after 16/03/2018 to establish the effectiveness of the Operators proposed action plan.

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0032915**

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

Site	Hafod Quarry Landfill	Permit Ref	PP3139GB
Operator/Permit holder	Cory Environmental (Central) Ltd	Date	15/02/2018

Section 3 – Enforcement Response

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.

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.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			
E1	C3	See comments section	16/03/2018

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 verbally or 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.

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 that 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 Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW 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 (eg. 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
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW 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 NRW 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 fifteen working 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 officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.