

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

Site	Lamby Way Open Windrow Composting Facility	Permit Ref	AB3096CP		
Operator/Permit holder	Welsh Water Organic Energy (Cardiff) Limited				
Regime	Installations				
Date of assessment	10/02/2020	Time in	11:00	Out	12:30
Assessment type	Audit				
Parts of the permit assessed	Site Inspection				
Lead officer's name	Harris, Geraint				
Accompanied by	Lewis, Kirsty				
Recipient's name/position	Bleddyn Escott/ Plant Manager	Date issued	02/04/2020		

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	permit Condition 3.4 .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

NRW received a response to CAR form CAR_NRW0036360 on the 30TH March 2020. Upon receipt of their report NRW have decided to remove the category 3 breach pertaining to the use of the wrong and inferior odour management plan. Please find additional notes at the end of this document.

Welsh Water Organic Energy Ltd Permit AB3096CP

NRW received an odour complaint at 16:50 on Friday 7th February for the Rumney area via telephone, however, the reporter had stated that the odour had been prominent throughout the day. The on call duty officer and myself investigated the complaint starting in Rumney. After checking the Rumney area we traced and substantiated the offensive odour to be coming from your compost facility. There was a strong odour along the access road to the compost site (marked in red). Additionally, this odour was substantiated by a Cardiff council employee who was escorting us to the compost facility. The wind at that time of the day was southerly. When we left the site, the same odour was substantiated on Heol y Rhosog just off Wentloog avenue (marked in red). This point was downwind of the compost facility.



The environmental permit issued for the site stipulates a condition to regulate odour, as follows.

“Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in an approved odour management plan, to prevent or where that is not practicable to minimise the odour. The operator shall:

(a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales for approval within the period specified, an odour management plan;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed

in writing by Natural Resources Wales.“

Welsh water must therefore employ the appropriate measures necessary to prevent odour pollution, or minimise it where prevention is not practicable. The Odour Management plan forwarded on Tuesday the 18th February is lacking sufficient detail and does not follow odour management best practice guidelines. For example, source, pathway and receptor is not considered, risk categorisation of receptors in the area, adequate mitigation controls, monitoring frequency, weather influences, staff training and resilience when management is absence are all items that need to be comprehensively addressed within an odour management plan.

An effective and comprehensive Odour Management Plan (OMP) is a working document which should serve to aid the decision-making process on site and be integrated with operational practices which conform to current industry best practices. OMPs are also required to include clear statements to demonstrate that the operator understands and accepts its responsibilities. Ultimately, the aim of this OMP is to identify any significant risks and demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage these risks. OMPs should be developed and employed with three pollution prevention objectives in mind.

1. To identify and employ ‘all appropriate measures’ to minimise the generation and emissions of odorous substances and subsequent exposure / impact;
2. To prevent exposure of people outside the site to levels of odour which would result in annoyance (unacceptable pollution); and
3. To minimise the risk of unplanned odour release incidents or accidents which have the potential to result in off-site odour annoyance.

There is guidance created by the Environment Agency titled ‘H4 Odour Management, How To Comply With Your Environmental Permit’. This OMP guidance suggests that an OMP should as a minimum, include the information contained in Appendix 4. Some of the requirements include the following elements:

- An assessment of the risks of odour problems, from normal and abnormal situations, including worst case scenarios, for example of weather, temperature, or breakdowns, as well as accident scenarios;
- The appropriate controls (both physical and management) needed to manage those risks;
- Suitable monitoring;
- Actions, contingencies and responsibilities when problems arise;
- procedures for reducing or ceasing operations if necessary to avoid serious odour pollution;
- procedures on engaging with neighbours to minimise their concerns and complaints;
- Regular review of the effectiveness of your odour control measures; and

- Emission limits (where appropriate).
- Regular review of procedures, in your case windrow dimensions to assess likelihood of anaerobic conditions.
- A process that either directly or through its contractors or subcontractors, ensures that equipment on site is operated and maintained such that it is effective in the control of odour at all times.

Consequently, it is essential that odour impacts are considered as part of routine operations and that 'All appropriate measures' are taken to prevent or, where it is not reasonably practicable, to minimise odorous emissions to air from the facility.

If you have, or are likely to have, an odour problem then you should set out in your odour management plan the appropriate measures you intend to use. The following sections give advice on how to do that. When investigating a complaint, you should work through the following questions:

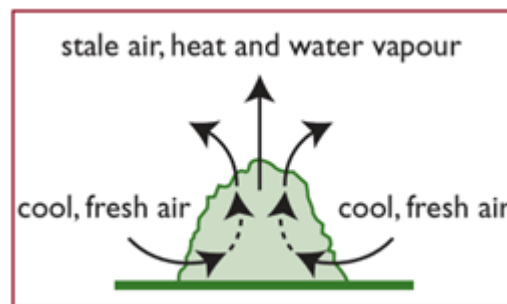
- Is the process under control?
- Have you received exceptionally odorous wastes?
- Has a normally aerobic composting activity become anaerobic?
- Have putrescible wastes been left standing for too long before processing?
- Have odour containment measures failed?
- Have adverse conditions, such as weather, overwhelmed containment structures?
- Have treatment measures failed?
- Have dispersion methods failed?
- Have stable atmospheric conditions failed to disperse an odorous plume?
- If the odour is associated with hazards, such as treatment of hazardous materials, is there any possibility of health risk to the local community?

After visiting your site on Monday, the 10th February, I wanted to draw attention to the size of your windrows. I had a copy of the sites SOP's which states that the windrows should be approximately 4

metres high and 10 meters wide. however, on another page a diagram of a windrow with a width of 10 metres and height of 5 metres is displayed. Please can you confirm which dimensions you adhere to? A useful guidance for composting is “How to comply with your environmental permit. Additional technical guidance for: composting and aerobic treatment sector”. This guidance gives general measurements for the dimensions of compost windrows. Below is a screen shot of these dimensions.

Windrow System	Aerated Static Pile	Turned Windrow
Length of pile (m)	20 – 30	46
Height of pile (m)	1.5 – 2.5	1.5 – 3
Width of pile (m)	3 – 6	2.4 – 2.7
Overall Volume (m ³)	75 – 375	131 – 221

At these dimensions natural or passive aeration is the method by which windrows obtain their oxygen. This process is commonly referred to as the ‘chimney effect’: passive stack aeration relies primarily on internal convection currents to pull cold air in from the base of the stack as warm air rises and exits the stack from the top.



Under these optimal conditions the natural breakdown of organic materials is occurring and primarily results in the production of carbon dioxide, water vapour, and heat. When the process is unbalanced in some way, other gases begin to be produced, some of which have objectionable odours. Such unbalances can be caused by high temperatures and inadequate ventilation due to windrows being too wide can reduce the ability of the windrow to lose excess heat and cause anaerobic conditions to develop. Odour management, then, is one of the primary motivators for optimising your composting and waste bulking process. One technique for reducing the risk of this happening is to reduce the overall dimensions of the windrows to assist in keeping the ‘chimney effect’ operational and hence the supply of oxygen to the centre constant. If the windrow is too large, then air will be unable to penetrate sufficiently into the composting mass and may result in anaerobic conditions within the centre. This will result in odours when the material is turned or processed.

Upon visiting the site on Monday the 10th February the supervisor informed us that a windrow was being turned on Friday afternoon. It was during this time that the odour complaint was received. From picture 1 I would say that the windrows present on your facility are far too wide and that the core area is undergoing anaerobic conditions resulting in malodorous products being produced. As part of the composting procedure the temperature and moisture content of the windrows should be monitored frequently. Upon visiting your site, I was shown the temperature probe which is approximately 1 metre in length. To control the composting process effectively and hence reduce the chance of producing malodours substances the management of temperature is essential. Given the size of your windrows and the length of your temperature probe I would say that there is a deficiency in this area and that the core temperatures of the windrows could be significantly higher than what is being recorded and hence anaerobic conditions could be present.



Picture 1

Picture 1 shows the most recent windrow on your site. I would argue that these are not actually windrows but more like piles. For it to be a windrow they need to be shaped more triangular. This would therefore improve oxygen ingress and reduce the chance of anaerobic conditions occurring. The supervisor informed us when we visited on Monday the 10th February that this windrow was turned on the Friday afternoon which matches the time of the complaint in Rumney.

Additionally, it would appear that odour monitoring is mostly conducted between 08:00-09:00 every working day. I believe that additional monitoring should be employed when the site is undertaking processes that can lead to the release of odours such as windrow turning and screening.

Breach 1

~~A Category 3 breach of permit condition 2.3.1 (a);~~

~~For the following activities referenced in schedule 1, table S1.1(A1). 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 Natural Resources Wales.~~

~~Table S1.2 Operating Techniques.~~

~~Odour management plan (OMP) dated February 2015, reference 407.04012.00009/OMP – all sections.~~

~~This condition has been breached. The permit for your site was granted on the condition that the above Odour Management Plan, highlighted in bold, is utilised and followed. Upon receiving the odour complaint the odour management plan provided to NRW was considerably different and lacked sufficient detail.~~

Breach 2

A Category 3 breach of permit Condition 3.4 .1

***“Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in an approved odour management plan, to prevent or where that is not practicable to minimise the odour.*”**

This condition is breached due to odours being substantiated a significant distance beyond the sites boundary.

Action

- Provide NRW with the quantity of compost product on site (40mm, 25mm and 10mm) and Quantity of material in windrows undergoing composting and quantity of oversized material

and other material waiting to be re-composted.

- Revise odour management plan and produce a fully comprehensive odour management plan or fully integrate odour management plan (OMP) dated February 2015, reference- 407.04012.00009/OMP into current SOP'S by 31st March. Below are some guidelines to consider when producing the new odour management plan.
- Ensure all activities, including storage of compost are confined to impermeable surface. Upon visiting site some of the compost product was being stored on the ground outside of the impermeable surface.
- Can you clarify when windrow 100220 was created and how long the waste had been on site for?
- Provide moisture and temperature readings for this windrow since its creation.

The deadline for actions is the 31st March. If you have any questions, please contact me.

There are a number of industry guides for the prevention and control of odours for compost facilities these include:

How to comply with your environmental permit. Additional technical guidance for: composting and aerobic treatment sector.

The composting industry code of practice

An industry guide for the prevention and control of odours at biowaste processing facilities.

March 31st Update.

Breach 1 (This is now void)

~~A Category 3 breach of permit condition 2.3.1 (a);~~

~~*For the following activities referenced in schedule 1, table S1.1(A1). 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 Natural Resources Wales.*~~

~~**Table S1.2 Operating Techniques.**~~

~~*Odour management plan (OMP) dated February 2015, reference- 407.04012.00009/OMP—all sections.*~~

This condition has been breached. The permit for your site was granted on the condition that the above Odour Management Plan, highlighted in bold, is utilised and followed. Upon receiving the odour complaint the odour management plan provided to NRW was considerably different and lacked sufficient detail.

WWOE response

We agree with NRW in that the OMP that applies to the operation of the Green Waste Facility is the plan referenced SLR Ref: 407.04012.00009/OMP, dated February 2015 and confirm that this is the plan that has been followed during the operation of this site. We have reviewed our document control procedure to ensure that this does not happen again. On this basis, given the circumstances above, we request that you consider revising CAR_NRW0036360 to remove this breach. A copy of the updated Plan and a comparative document showing the changes from the original are enclosed with this letter, we request your approval for the updated Plan and approval to use it as a new Odour Management Plan under our Permit.

NRW Response:

NRW has reviewed the updated version of the odour management plan stated in their permit and is happy for it to be implemented with immediate effect. Consequently, NRW agrees with WWOE and has removed the previously stated breach.

Breach 2

A Category 3 breach of permit Condition 3.4 .1

“Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in an approved odour management plan, to prevent or where that is not practicable to minimise the odour.

This condition is breached due to odours being substantiated a significant distance beyond the sites boundary.

Breach and subsequent points still Stand.

Action:

Provide NRW with the quantity of compost product on site (40mm, 25mm and 10mm) and

Quantity of material in windrows undergoing composting and quantity of oversized material and other material waiting to be re-composted.

WWOE response:

Quantities received from WWOE

NRW Response:

All quantities are within permit and odour management limits. No further action.

Action

Revise odour management plan and produce a fully comprehensive odour management plan or fully integrate odour management plan (OMP) dated February 2015, reference- 407.04012.00009/OMP into current SOP'S by 31st March. Below are some guidelines to consider when producing the new odour management plan.

WWOE response:

Freeland follow the OMP as stated in the permit which is further detailed in procedures that apply on site.

an updated OMP is presented with this report based on the original permit with updates as shown in the comparative document attached.

we request that you consider revising CAR_NRW0036360 to remove this breach.

NRW Response:

New Odour Management Plan received and reviewed. NRW are satisfied with the new plan and hope that it is fully utilised in the future. Breach removed.

Action

Ensure all activities, including storage of compost are confined to impermeable surface. Upon visiting site some of the compost product was being stored on the ground outside of the impermeable surface.

WWOE response:

The terms of the Permit's Schedule 1 Table S1.1 require that 'All non-hazardous waste must be stored and treated on an impermeable surface with sealed drainage'. In accordance with PAS100, compost is not classified as a non-hazardous waste.

NRW Response:

Even though compost is not classified as waste, please refrain from storing any material outside of the hardstanding to ensure there is no leaching of materials into the local environment including adjacent ravines.

Action:

Can you clarify when windrow 100220 was created and how long the waste had been on site for? Provide moisture and temperature readings for this windrow since its creation.

WWOE response:

See attached "Batch Formation and monitoring" record 100220

NRW Response:

Record seen, no further action

Further points:

WWOE:

The typical size for a windrow size is 5m high, 10m wide and 90m long as shown in the diagram in the SOP Ref: 07_SOP Issue 6, 24th October 2019. The typical batch size is 900 tonnes, with minimum size of 250 tonnes, and maximum expected size 2000 tonnes. Also shown in the diagram is the Core Zone which the temperature probe is designed to reach, this zone is normally 0.5m in from the surface of the windrow, the length of this probe exceeds 1m so is considered adequate for the purposes of testing the windrows.

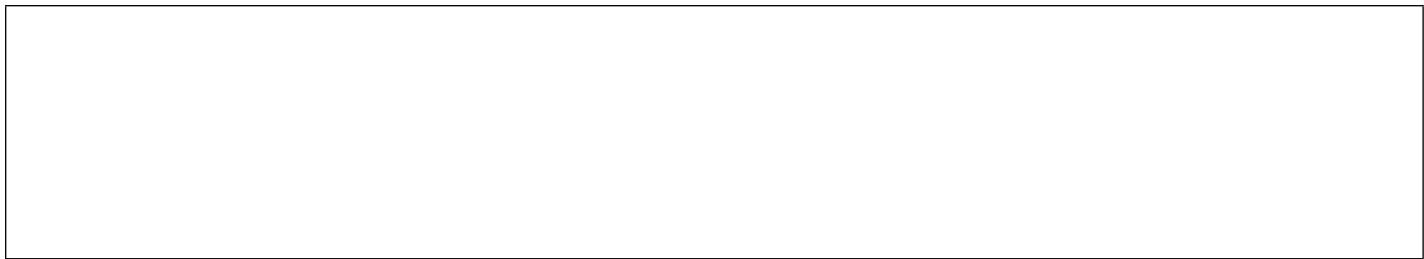
Recognising the comments in the CAR in relation to the size of the windrows, we have nevertheless operated this size of windrow since acquiring the site and have had no previous issues with odour or any evidence of anaerobic material. We are satisfied that the windrow size used on site meet requirements set out in the guidance note referred to (How to Comply with your Environmental Permit – Additional Technical guidance for: composting and aerobic treatment sector) in particular the section 5.1.9 on the sizing of windrows as part of operations. This guidance states that windrow size is feedstock material dependent and dictated by the aeration requirements of the pile. We can confirm that to ensure the dimensions are acceptable and aeration is adequate: the temperatures and moisture of the windrows are measured to ensure windrows do not go anaerobic.

NRW Response:

NRW regulate several compost facilities throughout wales and would like to note that when significant odours and complaints have occurred, the resulting cause was the size of the windrows. Once these were reduced the odour/complaints also reduced. For the dimensions stated above it does appear that a 1-metre probe would not reach anywhere near the core of the windrow where it is expected the hottest temperatures would be.

Since there have been only a small number of complaints relating to odour in the last four years and with a more robust and updated odour management plan in place, NRW feel satisfied that if all actions mentioned by WWOE are adhered to then no further actions are required, However, considering the recent odour complaint the site will be monitored more often than in the past to ensure that no fugitive emissions are noticed outside the site boundary.

END.



EPR Compliance Assessment Report

**Report ID:
CAR_NRW0036360**

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

Site	Lamby Way Open Windrow Composting Facility	Permit Ref	AB3096CP
Operator/Permit holder	Welsh Water Organic Energy (Cardiff) Limited	Date	10/02/2020

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	Improve the management of odour on site. Increase monitoring when operations likely to cause odour are occurring. Avoid turning windrows when winds are southerly. Produce and follow a detailed and precise odour management plan.	31/03/2020

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.