

## Compliance Assessment Report CAR\_NRW0048326

**Permit being assessed:** AB3096CP.

**For:** Lamby Way Open Windrow Composting Facility, **held by:** Welsh Water Organic Energy (Cardiff) Limited

**At:** Lamby Way, Rumney, Cardiff, CF3 4EQ.

**Type of assessment:** Site Inspection,

**Reason:** Routine.

**On:** 25/03/2025 between 13:00 and 14:15.

**Parts of permit assessed:** 3.3.1 and 2.4 and 2.3..

**NRW Lead Officer:** Geraint Harris.

**Report sent to:** Contract and Relationship Manager, Contract and Relationship Manager, on 16/05/2025.

### 1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR3C - Installations - Emissions and monitoring - Odour	Assessed (A)	
IR2E - Installations - Operations - Improvement programme	Assessed (A)	
IR2C - Installations - Operations - Operating techniques	Action only (X)	
IR4B - Installations - Information - Reporting	Assessed (A)	
IR3A(1) - Installations - Emissions and monitoring - Emissions to water	Assessed (A)	

Result types are explained in more detail in the 'Important Information' section below.

Total non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

## 2. What action is required?

Criteria	Action needed	Complete by
IR2C	Action 1: WWOE to provide an update on the implementation of the 1.5-meter probe originally scheduled for September 2024, as the site currently continues to use a 1.3-meter probe.	13/06/2025

Compliance criteria codes are listed in the 'Important information' section below.

## 3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

**At this time, we do not intend to take any further action.**

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

## 4. Details of our assessment

### Welsh Water Organic Energy (WWOE)

#### AB3096CP

On 25<sup>th</sup> of March 2025, Natural Resources Wales (NRW) conducted a compliance visit to Welsh Water's Organic Energy (WWOE) facility. The primary objective of this inspection was to verify the implementation of recently proposed environmental management improvements.

A previous compliance investigation (Report CAR\_NRW0044272) had revealed significant deficiencies in WWOE's operational practices with regards to controlling odour, specifically identifying critical shortcomings with:

- Temperature control mechanisms
- Aeration management processes
- Porosity management
- Density management
- Windrow dimensions

These deficiencies indicated non-compliance with recommended standards outlined in relevant industry guidance and Best Available Techniques (BAT 36) reference documents.

In response to the identified issues, the following collaborative steps were undertaken:

1. NRW and WWOE convened a pre-submission discussion at the DCWW offices in Newport to address the compliance gaps.
2. On the 1<sup>st</sup> of July 2024, WWOE submitted an updated Odour Management Plan (OMP) and Standard Operating Procedure (SOP).

Upon meticulous review, NRW observed that WWOE had systematically addressed the majority of recommendations contained within the Open Windrow Appropriate Measures Investigation report.

In compliance report CAR\_NRW0045073, NRW formally acknowledged WWOE's proposed

remediation strategies, with the following improvements scheduled to commence after the 1<sup>st</sup> of September 2024:

- Implementation of smaller windrow configurations
- Deployment of an extended-length monitoring probe
- Extension of the sanitisation period

This compliance visit was conducted to verify and assess the implementation of previously proposed environmental management measures at WWOE's Organic Energy site. Overall, the site demonstrated notable improvements in windrow management and operational practices. No malodorous emissions were detected during the inspection. At the time of the visit, operational activity was limited to the deposition of new green waste onto the pad. The weather was dry, with calm wind conditions. The only detectable odour onsite was a very mild compost-like scent, which was not deemed offensive or malodorous.

It was observed, during this compliance visit that the active windrows were now significantly smaller (picture 1) than the previously constructed windrows (picture 2 taken 13/04/2021). The Waste Treatment BREF requires operators to set up loose, well-structured windrows for the initial intensive degradation phase. It goes on to state that the optimum height of a pile/windrow is generally considered to be between 1.5 and 3 metres and depends on the decomposition age (the more mature, the higher the piles can be). It follows that immature compost should be placed in windrows towards the lower end of the 1.5 – 3m height range provided in the BREF. The windrows at WWOE's Organic Energy site were observed to be approximately 3 metres high, 5 metres wide. This reduction is significant in many ways. One such way is related to the amount of waste that is able to be monitored by the probe. It was demonstrated in the Open Windrow Appropriate Measures Investigation (CAR Form CAR\_NRW0044272 ) that when the 1.3 metre probe was used on the previous larger windrows, approximately 27% of the core was unable to be monitored, which equates to approximately 230 tonnes of waste . When using the same sized probes for these smaller windrows, only approximately 10% of the core is unable to be reached by the monitor, which equates to approximately 42 tonnes of waste. Therefore, there is a noticeable improvement in the operators ability to monitors key parameters such as temperature and oxygen throughout their windrows.

WWOE stated that they would implement a 1.5 metre probe from September 2024. However, a 1.3 metre probe is still being utilised at the site. Should a 1.5 metre probe be used then this would only leave 4% of the core unable to be monitored.

**Action 1: WWOE to provide an update on the implementation of the 1.5-meter probe originally scheduled for September 2024, as the site currently continues to use a 1.3-meter probe. Due 13th June 2025.**

The reduced windrow size also has positive implications for oxygen control. WWOE uses the Compost Manager system to store and process key operational data. It is noted that during this compliance visit, only average monitoring data was reviewed—not individual windrow data.

The average oxygen levels observed were above the 5% minimum limit specified in the How to Comply with Your Environmental Permit: Additional Technical Guidance for the Composting and Aerobic Treatment Sector. In fact, oxygen levels were recorded at around 14%, suggesting improved aerobic conditions throughout the windrows. This is beneficial in reducing the risk of odour

generation.

Average temperature readings, however, were observed to be higher than those outlined in the relevant guidance. While not immediately concerning, this may have future implications for odour control. Temperature data may be reviewed more rigorously should substantiated odour complaints arise.

At the time of the visit, WWOE was not proactively conducting odour checks at known sensitive receptors during high-risk weather conditions. The operator stated that an impartial individual would conduct weekly odour monitoring during the spring and summer seasons. While this does not fully meet best practice expectations, it does represent an improvement in odour monitoring frequency during higher-risk periods.

During the visit (early spring), additional checks had not yet commenced. WWOE should note that proactive odour monitoring during high-risk periods is considered an appropriate measure. Should future odour complaints be substantiated, this aspect will be subject to further review.

If odour impacts are confirmed to originate from the site, Natural Resources Wales (NRW) may require WWOE to undertake proactive monitoring at known sensitive locations previously affected by odours.

The site was observed to be well-maintained, with clearly separated piles of waste, compost, and windrows. At the time of the visit, operations were compliant with the site's Fire Prevention and Mitigation Plan (FPMP). A reduction in oversize waste was also noted. This was attributed in part to the transfer of contaminated oversize materials to another facility for further treatment and litter removal.

WWOE has made measurable progress in implementing the recommendations outlined in the Open Windrow Appropriate Measures Investigation report. However, it must be emphasised that:

- If odour impacts from the site are substantiated, further mitigation measures may be required, even if current standards and guidance are being followed.
- Compliance with industry standards does not negate the need for additional controls if site activities result in unreasonable environmental impacts.
- In sensitive environments—such as areas near residential properties or protected habitats—more stringent measures may be necessary to demonstrate compliance with appropriate standards.

NRW will continue to monitor the site's progress and environmental performance, particularly in relation to odour management and monitoring practices.

### **Picture 1**



**Picture 2**



**Improvement Condition 4**

*The Operator shall complete and submit for approval in writing by Natural Resources Wales (“NRW”) a Phase 1 screening test report for priority hazardous pollutants and any other relevant priority hazardous substances discharged to sewer. For any substance which is not screened out by*

*the screening tests, further modelling (as described in the risk assessment guidance “Surface water pollution risk assessment for your environmental permit”) should be undertaken, and the results of the modelling submitted to NRW for approval. The Operator shall submit for written approval a methodology for the appropriate monitoring requirements for discharges to sewer. Where a process parameter cannot be monitored justification should be provided and/or a suitable alternative proposed. The methodology should include trigger levels for each of the parameters with associated procedures in place if trigger levels are exceeded.*

Environmental Compliance Limited were commissioned by Welsh Water Organic Energy (Cardiff) Limited to undertake a H1 Assessment for emissions to water associated with Welsh Water’s discharges to sewer at their Lamby Way Open Windrow Composting Facility, Rumney, Cardiff, CF3 2EH. WWOE have had difficulties obtaining complete analysis for the on-site water samples collected. Consequently, this is an interim screening assessment making use of the currently available data.

Sewage treatment works remove a proportion of pollutants from wastewater before it is discharged into freshwater, estuarine, or coastal waters. The extent to which each pollutant is removed is defined by the Sewage Treatment Reduction Factor (STRF). Operators must consider these factors when calculating the concentration of hazardous chemicals or elements that will ultimately be discharged into receiving waters via the sewer network.

However, indirect discharges (i.e., those entering the sewer system upstream of the treatment works) cannot rely on dilution or partitioning of pollutants into sludge as a method for reducing pollutant concentrations. As a result, emission limits may be imposed on substances that are not sufficiently treated during final treatment. This applies particularly to:

- toxic compounds,
- poorly or non-biodegradable organic compounds,
- organic substances present at high concentrations,
- and certain metals during biological treatment.

WWOE has applied STRFs to certain compounds and elements, such as chromium, that are more likely to partition into sludge than to be effectively treated. However, the concentrations of these substances have been measured as being so low that their emissions are considered insignificant, even without applying STRFs. Therefore, this interim report has been accepted.

#### **Compliance Assessment Report CAR\_NRW0046415**

Actions 1 and 2 have now been completed.

**End.**

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

## Important information

### Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

### Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

### How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

**If your assessment result in Section 1 is suspended, what does this mean?**

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

**Full list of Industry compliance criteria (used in section 1 and 2):**

**1. Management**

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

**2. Operations**

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

**3. Emission and Monitoring**

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

**4. Information**

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

**Enforcement response**

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or

suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

### **Data protection notice**

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or 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
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

### **Disclosure of information – this report will be available to view on-line**

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

### **What do I do if I disagree with the report or have a complaint?**

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email [enquiries@naturalresourceswales.gov.uk](mailto:enquiries@naturalresourceswales.gov.uk) for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at [ask@ombudsman.wales](mailto:ask@ombudsman.wales)

### **Welsh Language Standards**

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.