

Compliance Assessment Report CAR_NRW0045987

Permit being assessed: AN0032201

For: Creigiau Wastewater Treatment Works, held by DWR CYMRU CYFYNGEDIG

At: Heol Pant-y-Gored, Creigiau, Cardiff, CF15 9NE.

Type of assessment carried out: Site Inspection, Reason: Routine.

On 09/01/2025, between 09:30 and 11:00.

Parts of permit assessed: Conditions 2, 3.1.1, 3.3.4

NRW Lead Officer: Charlotte Rhodes, accompanied by: Harry Warburton.

Report sent to: DCWW CARS mailbox, DCWW CARS mailbox, on 28/01/2025.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
WQ-B2 - Water Quality - Operations - The site	Action only (X)	
WQ-D3 - Water Quality - Information - Notifications	C3 Minor	4.3.1(a)
WQ-B3 - Water Quality - Operations - Operating techniques	Action only (X)	
WQ-C1 - Water Quality - Emissions and monitoring - Emissions to water	Action only (X)	
WQ-A1 - Water Quality - Management - General management	Action only (X)	
WQ-C4 - Water Quality - Emissions and monitoring - Installation of monitoring boreholes	Assessed (A)	

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

2. What action is required?

Criteria	Action needed	Complete by
WQ-B2	Please confirm whether there is a telemetry alarm system in place in line with Condition 2.3.2(e).	28/02/2025
WQ-D3	Please explain why there was no OPNOT sent regarding the disrepair and temporary replacement of the inlet screen, in line with Condition 4.3.1(a), and how the changeover to temporary was managed - whether there was a period of unscreened inlet flow.	28/02/2025
WQ-B3	We strongly advise that a permanent inlet screening solution is implemented as soon as possible to prevent any possible impacts on the treatment capacity/operation of the site.	28/04/2025
WQ-C1	We strongly recommend this permit is reviewed to reflect that	28/02/2025

Criteria	Action needed	Complete by
	the summer/winter variations are no longer necessary, since the FE outfall now bypasses the fishery. This has been updated in the layout and grid references within the permit, but the conditions not altered accordingly. Please detail the expected timescale for implementing this change.	
WQ-A1	Despite its access challenges, we expect regular inspections of the outfall as standard practise - with associated risk assessment - and for these to be recorded appropriately for reference.	Already completed

Action 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

Introduction

On Thursday 9th January 2025, Officers C RHODES and H WARBURTON visited Creigiau Sewage Treatment Works for a scheduled compliance inspection of permit **AN0032201**. Officers wish to thank the Site Operator, Process Science Technician and Area Supervisor from Dŵr Cymru Welsh Water (DCWW) for meeting and showing them around site. The weather was dry but very cold, with rain and some snow preceding and icy conditions in general.

Permit background

The permitted discharge limits for this site vary between summer and winter, shown in the table below. This is due to the fisheries located immediately south of the works at Canada Lake, however, since the discharge point of the works was relocated to south of the lake this is no longer necessary. DCWW informed Officers that in March 2027 there are plans to introduce iron dosing at the site as part of the Phosphorus removal programme, as well as reduce the levels of Ammonia and several other determinands, and the permit to be updated as such replacing summer/winter variations with fixed year-round limits.

	BOD mg/l	Ammonia mg/l	Suspended solids mg/l
Summer (1 st Apr – 30 th Sep)	8 - 16	5 – 10	30 – 60
Winter	24 - 48	10 – 20	50 – 100

(1 st Oct – 31 st Mar)			
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The site discharges into the Nant y Glaswg watercourse within the Nant Dowlais and wider Ely catchment and is permitted for both Final Effluent, and Storm discharges. The site is fed from two pumping stations and uniquely includes deep grit settlement between screening and biological treatment.

Inlet and screening

Currently the site is operating on a hired-in inlet screening system due to the existing being beyond repair and has been for some time. Operatives have suggested the best course of action to be purchasing that which is already installed on-loan at the site, however are awaiting confirmation on the plan of action. **We strongly advise that a permanent solution is implemented as soon as possible to prevent any possible impacts on the treatment capacity/operation of the site.**

Confirmation is needed in relation to *Condition 2.3.2(e) - Where a mechanically cleaned screen is installed, a telemetry alarm system shall be installed and maintained so as to give the operator immediate notification of a failure.* **Please see Action 1.**

Additionally, no OPNOT was received regarding the disrepair and temporary replacement of the inlet screen. This constitutes a **non-compliance** with Condition 4.3.1(a); **please see Action 2.**

The on-loan screen is self-cleaning and contains a compactor for screened rag/solids (pictured left). The outside is then sprayed down daily by the Site Operator, as is the storm channel. There is also a bar screen in place to redirect flows into in the event of a blockage or power cut (pictured right).



FFT was 18.42 l/s at the time and a new flow control had been installed recently to meet this, as well as a Rotork valve to automatically control the penstock according to flow.

After this, flows passed through a deep grit settlement chamber which can be bypassed for tankering. Then, a flow control chamber within which the storm channel runs perpendicular to the main flow. The storm was not operating at the time of visit but reportedly had done in the previous day or two due to rainfall across the catchment.

From here, two large Archimedes screws transport the flow up-hill to the treatment tank which have recently been replaced, however one is currently offline due to the new gearbox having been stolen just before Christmas. They are designed to act as Duty and Assist so this is not affecting treatment capacity, but is putting a strain on the power demand of the site so a diesel generator is currently powering the treatment tank to accommodate for this. The planned site upgrades intend to include increased electrical resilience for the site going forward.



Treatment tank

There is no primary settlement at this site besides the post-screen grit, but the aeration lane is supported by biological treatment in the form of activated sludge which is recirculated until eventually being diverted to the sludge storage tank for transfer to Cardiff AD plant. There are 4 aerators, one always on and the other three switched on/off depending on dissolved oxygen (DO) levels. Manual dosing of sodium carbonate is also done as required to manage the pH requirements of the permit. All appeared to be functioning well, including the sludge return.



Final settlement

There are two final settlement tanks at this site, each with two additional clarifier tanks for further settlement. The sludge blanket is manually assessed daily; at the time of visit there did not appear to be an issue and tanks operating effectively.

Left: FST 1, immediately after aeration tank. Right: FST 1's clarifiers in foreground, FST 2 in background. Below: weir within FST 1.





It is noted that a mini laboratory had also been set up at site to assess the mixed liquors and return activated sludge which has significant time saving benefits and allows the site to be managed much more proactively.

Outfall

The monitoring point for Final Effluent is accessible from the treatment works itself via a raised platform, before it flows beneath Canada Lake to its outfall to watercourse. This was clearly signposted and safely accessible, demonstrating **compliance with Condition 3.3.4** (noted as installation of monitoring boreholes).

Officers attempted to assess the outfall south of Canada Lake, but were unable to access it safely due to it discharging inside of a tunnel. Dŵr Cymru Operatives sent the below photo from their most recent inspections, conducted in 2023:



The outfall review report found the section attached to the treatment works, the "purpose built steel platform and its concrete benching", to be in good condition. The final discharge point at the base of Canada Lake lies within a brick/stonework tunnel upon which it enters the Nant y Glaswg. This is a confined space and as such is inaccessible by DCWW without appropriate risk assessment.

A sample was not taken as it was not deemed necessary, given no known recent failures.

Summary and actions

Overall, the site was found to be **non-compliant with Condition 4.3.1**, with Condition 2.3.2(e) remaining to be seen. The level of non-compliance with 4.3.1(a) is difficult to ascertain without the information that would have been provided in an OPNOT, crucially whether there was any period without mechanical screening during the changeover, but as there is no known impact on the process at present this is noted as minor possible impact. Please observe the following actions:

1. Please confirm whether there is a telemetry alarm system is in place in line with Condition 2.3.2(e).
2. Please explain why there was no OPNOT sent regarding the disrepair and temporary replacement of the inlet screen, in line with Condition 4.3.1(a), and how the changeover to temporary was

managed - whether there was a period of unscreened inlet flow.

The following recommendations are also made, feedback for which should be sent within the given timeframe:

3. We strongly advise that a permanent inlet screening solution is implemented as soon as possible to prevent any possible impacts on the treatment capacity/operation of the site.

4. We strongly recommend this permit is reviewed to reflect that the summer/winter variations are no longer necessary, since the FE outfall now bypasses the fishery. This has been updated in the layout and grid references within the permit, but the conditions not altered accordingly. Please detail the expected timescale for implementing this change.

5. Despite its access challenges, we expect regular inspections of the outfall as standard practise - with associated risk assessment - and for these to be recorded appropriately for reference. Please ensure this is done on a regular basis.

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

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

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

Full list of water quality action criteria (used in section 1 and 2):**WQ A: Management**

- WQ-A1 General management

WQ B: Operations

- WQ-B1 Permitted activities
- WQ-B2 The site
- WQ-B3 Operating techniques
- WQ-B4 Improvement programme
- WQ-B5 Pre-operational conditions

WQ C: Emissions and monitoring

- WQ-C1 Emissions to water
- WQ-C2 Emissions to land
- WQ-C3 Emissions of substances not controlled by emission limits
- WQ-C4 Installation of monitoring boreholes

WQ D: Information

- WQ-D1 Records
- WQ-D2 Reporting
- WQ-D3 Notifications

Enforcement response

Any permit condition non-compliance 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 20 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 – 18:00), or email 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

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.