Compliance Assessment Report CAR_NRW0046223

Permit being assessed: AB0064101
For: PONTHIR STW PONTHIR NEWPORT, held by DWR CYMRU CYFYNGEDIG
At: PONTHIR STW, PONTHIR, NEWPORT, NEWPORT CBC, NP18 1PG.

Type of assessment carried out: Site Inspection, Reason: Routine.
On 06/02/2025, between 10:30 and 14:30.
Parts of permit assessed: Site operations and infrastructure

NRW Lead Officer: Elis Nuttall.
Report sent to: DCWW, Water Industry, on 22/12/2025.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
WQ-B1 - Water Quality - Operations - Permitted activities	Action only (X)	
WQ-B2 - Water Quality - Operations - The site	Action only (X)	
WQ-B2 - Water Quality - Operations - The site	Action only (X)	
WQ-D2 - Water Quality - Information - Reporting	Action only (X)	
WQ-D2 - Water Quality - Information - Reporting	Action only (X)	
WQ-B2 - Water Quality - Operations - The site	Action only (X)	
WQ-A1 - Water Quality - Management - General management	Action only (X)	

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

2. What action is required?

Criteria	Action needed	Complete by
WQ-B1	Confirm if flow monitoring is conducted on the Star Villas secondary input and how its inclusion does not breach treatment volume conditions.	22/01/2026
WQ-B2	Maintenance – ensure settlement tank 1’s bridge rotates freely and that no obstructions are restricting it.	22/02/2026
WQ-B2	Maintenance – address collapsed and leaking baffles in primary settlement tanks 2 and 4.	22/02/2026
WQ-D2	Reporting – Inform NRW via OPNOT when the retrofit of new blowers on the aeration lanes will/has taken place.	22/01/2026
WQ-D2	Reporting – Inform NRW when Final settlement tank 3 is back	22/06/2026

Criteria	Action needed	Complete by
	in working operational order. (A six month deadline has been set for administrative purposes).	
WQ-B2	Reporting – Provide NRW with photos and videos of the final outfall to the River Usk so that the condition of the asset can be assessed.	22/02/2026
WQ-A1	Reporting – Provide NRW with an example of waste transfer notes evidencing the appropriate disposal of waste off site.	22/01/2026

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

This report details the site visit by Natural Resources Wales (NRW) on the 06/02/2025 to Ponthir Sewage Treatment Works (Primary Treatment and Final Effluent), permit reference number EPR – AB0064101.

I (NRW Environment Officer Elis Nuttall) and Peter Jones (NRW Environment Officer) attended Ponthir STW at Ponthir, Newport, NP18 1PG for an OSM inspection at 10:30 where we met with the Dŵr Cymru Welsh Water (DCWW) Soth East Wales Catchment Manager. The weather was dry, clear and cold at the time of the visit.

Note that this report outlines the assessment made for the primary treatment and final effluent systems at Ponthir STW. The inlet works and storm tanks are assessed in a separate report.

General Observations

This site is the primary treatment site for Ponthir Sewage Treatment Works. This is an operational activated sludge system serving a population size of approximately 104,074.

The permit for this asset was issued on 04/03/1997 and the main consents are as follows:

- The rate of discharge shall not exceed 886 l/s
- The dry weather flow of the discharge shall not exceed 32946m³/d.
- The discharge shall not contain more than:
- 40mg/l of BOD
- 20mg/l of ammoniacal nitrogen
- 60mg/l of suspended solids
- 5µg/l of mercury
- 20µg/l of cadmium

- 0.3mg/l of zinc
- 0.1mg/l of lead
- 0.02mg/l of chromium
- 0.15mg/l of copper
- 0.1mg/l of nickel
- Significant quantity of solid matter having a size greater than 6mm in more than one dimension.

We were accompanied at all times during the visit by DCWW operators who were on hand to answer questions and elaborate on certain aspects of the system.

Site Infrastructure

We began our inspection of the Primary Treatment site at the entry point of effluent from the inlet works. At the time of the visit it was clear of any large particulates and was not excessively odorous or concentrated, as seen in Figure 1.

Figure 1 – The effluent as it enters the primary treatment site at the time of the visit.

In addition to the effluent received from the inlet works it was also stated that there is a secondary input at this location via a pipe from Star Villas, a housing/industrial estate some 370m to the South of the site, which is transported to the treatment works via a separate pumping station. While this additional input appeared clear and was not altering the visual composition of the effluent (see Figure 2), it does not pass through the inlet works and as

such is not accounted for in the inlet monitoring, only the final discharge monitoring. It was not indicated by DCWW operators during the visit that the flow volume from this input was recorded. This raises concerns as the monitoring system doesn't capture the true volumes being transported to and treated on site. As a result, it is unclear whether the site is compliant with conditions pertaining to treatment volume and as such efficiency. I have not been able to find an amended/consolidated permit which indicates that this secondary input is regulated and legal. As such I have actioned that DCWW confirm if flow monitoring is conducted on this secondary input and how its inclusion does not breach effluent volume conditions.

Figure 2 – The white pipe seen is where effluent discharge from Star Villas enters the treatment works without flow monitoring capturing the volume.

Sampling Point

The crude sewage sampling point (fixed UWWTD) was observed to be in place at the point where effluent enters the treatment system (Figures 3 and 4). It was stated to be an autosampler which takes a representative sample 12 times a year i.e. monthly readings. This sampling, at the time of the visit, was last completed in January 2025, with results available from DCWW if requested. From this point the effluent is pumped to the primary settlement tanks to begin treatment.

Figure 3 (Top) – The location of the crude effluent sampling point.

Figure 4 (Bottom) – The internal system of the sampling point at the time of the visit.

Primary Treatment/Settlement Tanks

The site operates 6 primary settlement tanks in total, numbered 1-6. They are all of concrete construction, are ~3-4m deep, contain scrapers, macerators, scum boards and baffles. Bridge maintenance is conducted once a year and sensors are in place to indicate any rotation failures. It was noted by DCWW operators that the distribution of flow is split 70/30; 70% settles in Tanks 1-4, with the remaining 30% settling in Tanks 5 and 6. This is achieved via an automated splitter/flow distribution system, which accounts for tanks being taken offline for maintenance, as was the case for Tank 5 during this visit.

It was noted by DCWW operators that the tanks are numbered in the order seen in Map 1 below.

Map 1 – The layout and numbering system for the Primary Settlement Tanks as stated by DCWW operators during the visit. If incorrect please advise.

Observations for each settlement tank are as follows.

Settlement Tank 1's bridge appeared to not be in operation on first inspection. When investigated by DCWW operators it was clear that a metal plate on the chamber wall (as seen in Figure 5) was catching on the bridge and restricting it from rotating. I noted this as an action for DCWW to address as soon as practicable. The scum boards and baffle in Tank 1 appeared to be in good condition and working as designed, as seen in Figure 6.

Figure 5 (Top) – Settlement tank 1 where the metal plate restricting the bridge rotation can be seen on the chamber wall.

Figure 6 (Bottom) – The general condition of Settlement tank 1 at the time of the visit.

Settlement Tank 2 was in slightly worse condition at the time of the visit. The scum board was overtopping in places (Figure 7) and a baffle had collapsed in one section (Figure 8). I actioned for this to be a maintenance priority for DCWW operators.

Figure 7 (Top) – Settlement Tank 2's scum board overtopping.

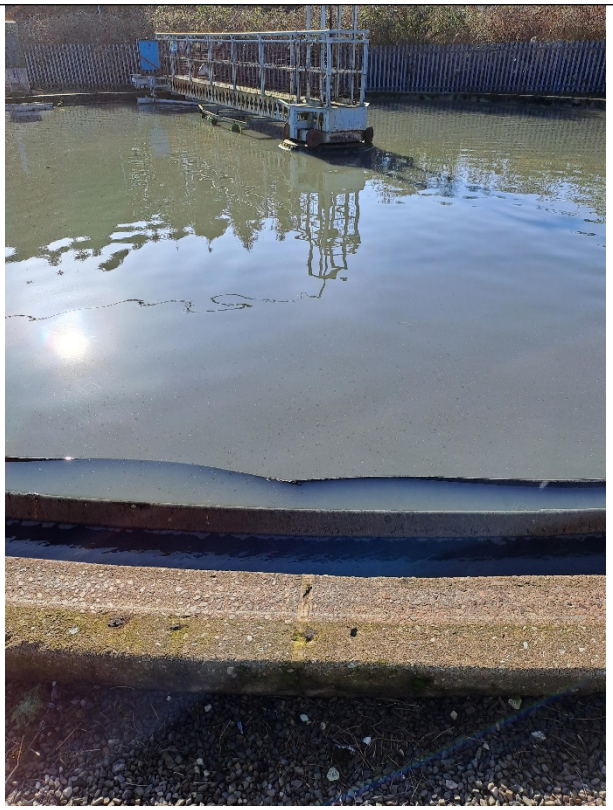

Figure 8 (Bottom) – A section of Settlement Tank 2's baffle where it has collapsed.

Settlement Tank 3 was in good condition with baffles and scum boards intact. There was some surface scum present but not excessive. These observations are evidenced in Figure 9.

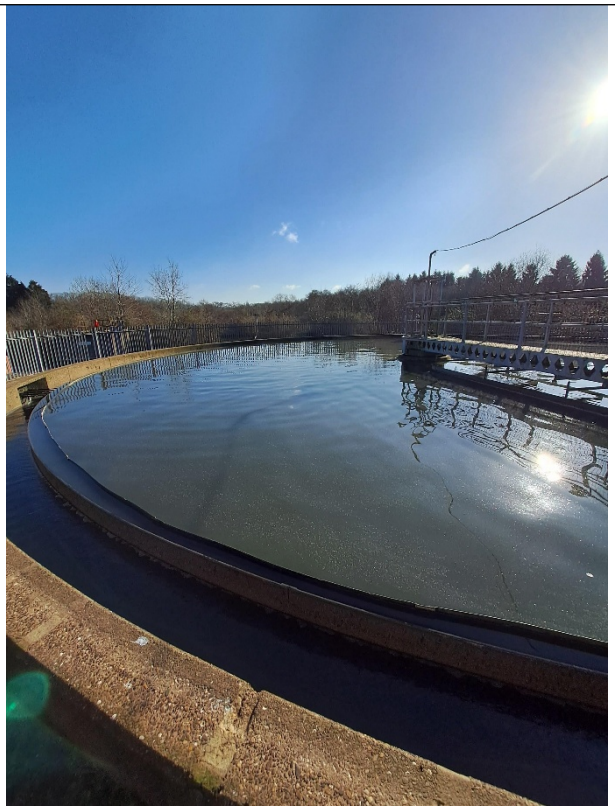

Figure 9 – Settlement Tank 3 as observed during the visit.

Settlement Tank 4 displayed similar defects as Tank 2 with baffle breaches in some parts (Figure 10) but overall no major issues noted (Figure 11). As previously noted, a verbal action was given to address these minor maintenance issues. The auto de-sludge was in operation on Tank 4 during the visit, operating as designed. It was noted that the solids/sludges are separated and sent on to Nash WwTW for further treatment.

Figure 10 (Top): Settlement tank 4 baffle breach as observed during the visit.

Figure 11 (Bottom): General condition of Settlement tank 4 as observed during the visit.

It was noted that Settlement Tanks 5 & 6 were originally constructed as storm tanks and were subsequently retrofitted to be settlement tanks.

Settlement Tank 5 was not in operation during the visit and had been drainage down for maintenance. It was noted that the main maintenance priorities were to replace the drive and baffles. When questioned if DCWW submitted an OPNOT for this work, the operators stated they weren't sure and assured that they will check and inform NRW as soon as possible.

As the tank was empty, this was a good opportunity to assess the components that could not be seen on the other tanks and gauge the general maintenance of the infrastructure (Figure 12). The scrapers and bridge looked to be in good condition with no excessive wear. The baffles were very rusty and compromised in several places (Figures 13 & 14), but as this was noted as a maintenance priority by DCWW no action will be set by NRW.

Settlement Tank 6 was in good working order with the baffles and scum boards in very good condition (Figures 15 & 16) as they had been replaced recently by DCWW. No issues noted at the time of the visit.

Figure 12 – Settlement Tank 5 drained down for maintenance at the time of the visit.

Figure 13 (Top) – Baffles of Tank 5 showing considerable rust and defects, but maintenance scheduled by DCWW to rectify.

Figure 14 (Bottom) - Baffles of Tank 5 showing considerable rust and defects, but maintenance scheduled by

DCWW to rectify.

Figure 15 (Top) – Condition of Tank 6 as observed during the visit.

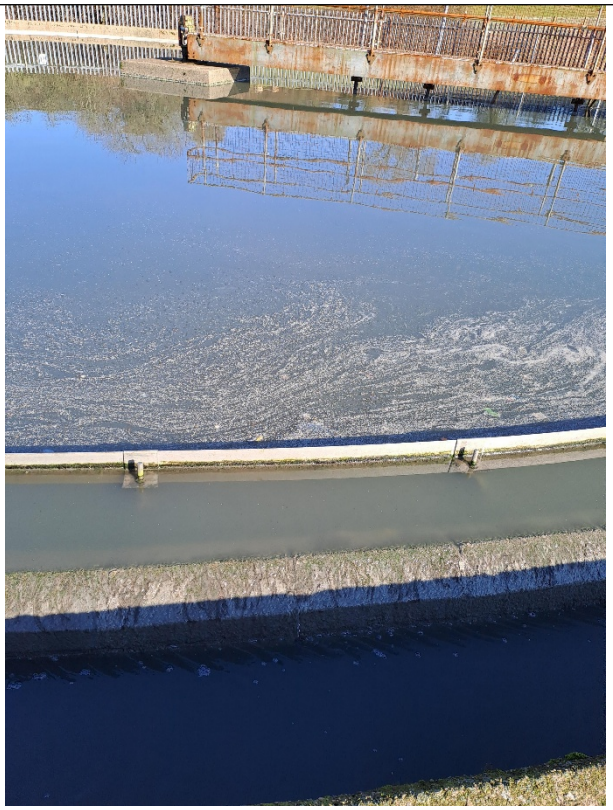

Figure 16 (Bottom) – Tank 6 baffles in very good condition.

As we were walking from the primary treatment/settlement tanks to the secondary treatment/aeration lanes we passed the abandoned filter beds. When questioned if there were any plans to reinstate or repurpose the beds it was stated that they are completely defunct with no intentions to bring them back online in any capacity or do anything with them at all.

Secondary treatment

The secondary treatment/aeration lanes were inspected (2 tanks, 3 lanes in each) and found to be in a good working condition. There was no abnormal amounts of foam and the foam present was a white colour as expected as part of the requisite biological processes. There was no evidence of excessive solids observed at the time of the visit (Figures 17 & 18). It was stated that the Mixed Liquor Suspended Solids (MLSS) was last measured at 2000mg/l. This data can be requested from DCWW. Regarding planned maintenance, it was noted that the blowers need to be replaced. Two will be kept operational with two rental units to be utilised during the retrofit. I requested that this work be reflected with an OPNOT when undertaken.

Figure 17 – The aeration lanes as observed during the visit

Figure 18 – The aeration lanes as observed during the visit.

Final settlement tanks

There are 4 final settlement tanks in total on site. 3 were operational during the visit. Overall there weren't any major issues observed. There was some surface scum present but this was explained to be "pin floc" and stated to be non-hazardous and breaks up without impacting suspended solids or chemistry of the final effluent. An example of this pin floc can be seen in Figure 19. There was no visible oil or grease observed. It was noted by DCWW that these final settlement tanks were retrofitted from the original primary settlement tanks. As such, they realistically shouldn't have/need the baffles and scum boards currently in place.

Figure 19 – An example of the pin floc observed in the final settlement tanks during the visit.

An assessment of each final settlement tank is as follows.

Tank 1 had good water clarity with some pin floc on the surface. No large solids were observed and treated effluent leaving tanks appeared to be (visually) very good. Figure 20 shows these observations.

Tank 2 contained even more pin floc, but as stated previously, this was not a concern to DCWW and it was noted that the baffles act as a barrier, restricting the floc from breaking up in the effluent as it cascades out of the tanks. The water clarity leaving the tank was good. These observations can be seen in Figure 21.

Tank 3 was empty during the visit due to an electrical fault in the bridge operation. When asked about timescales for remedying the issue it was stated that parts were on order but DCWW operators will check when this fix is scheduled to take place. Figure 22 shows the condition of tank 3 during the visit.

Tank 4 displayed similar pin floc as tanks 1 & 2, although not as extensive. The water clarity, although not as good at the other tanks, was still visually very clear. Figure 23 is evidence these observations.

Figure 20 (Top) – Final Settlement Tank 1 as observed during the visit.

Figure 21 (Bottom) - Final Settlement Tank 2 as observed during the visit.

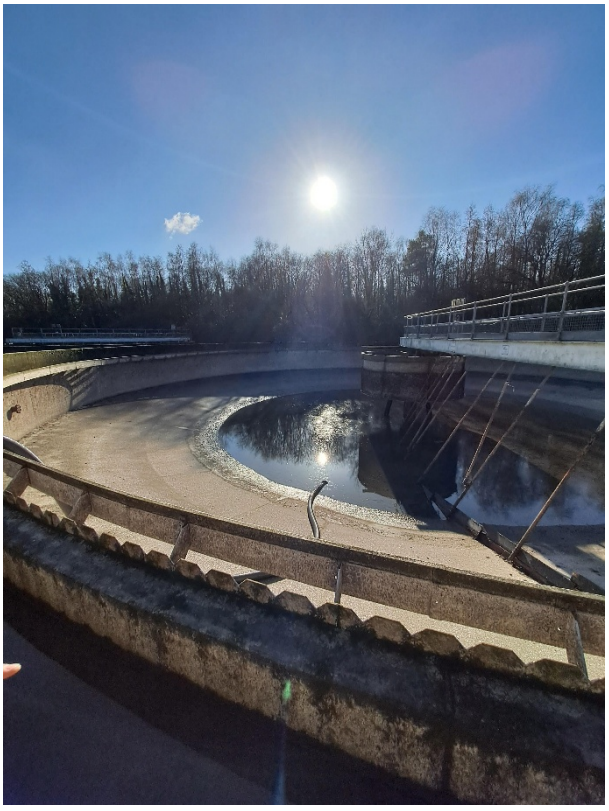

Figure 22 (Top) – Final Settlement Tank 3 as observed during the visit.

Figure 23 (Bottom) - Final Settlement Tank 4 as observed during the visit.

The return system for sludge from the final settlement tanks was observed (Figure 24). No issues were noted from the visual inspection. As noted previously, these sludges are sent to Nash WwTW for further treatment.

Figure 24 – The sludge return system as observed during the visit.

It was noted that the humus tanks are abandoned; they were holding a small amount of water but this was stated to be rainwater and groundwater ingress. As with the filter beds, there are no plans to retrofit or do anything with them in future.

Final effluent sampling & Flow measurement

The final effluent sampling point and UWWTD auto samples are in the listed location and are clearly labelled, as seen in Figures 25 and 26. The UWWTD holds an appropriate MCERTS certification (valid until 07/12/2027). The sampling regime allows for a representative sample to be taken via a bucket from the final effluent flume which is well mixed. A representative data set for sampling analysis will be requested to assess treatment efficiency. The flow measurement device (telemetry) is in place, operational and the read out is visible, as seen in Figure 27. At the time of the visit the final effluent was discharging at a rate of 405.3l/s.

Figure 25 (Top) - The final effluent sampling point, clearly labelled.

Figure 26 (Bottom) - UWWTD auto samples in the listed location.

Figure 27 - The flow measurement device, visible and in operation.

The final effluent flume/channel was clear of debris and fungus, with sensor heads also free of debris, as seen in Figures 28 and 29. EDM monitors were described to be in place on the storm effluent channels near the storm tanks, as assessed separately.

Figure 28 (Top) – Final effluent channel with monitors in situ.

Figure 29 (Bottom) – Final effluent channel with monitors in situ.

The discharge point/outfall for treated effluent to the River Usk was not observed during this visit due to it being located ~3km downstream and in an estuarine environment, making access difficult. As a result an assessment of the discharge point could not be made at the time of the visit. DCWW operators noted that any photos or evidence required can be provided via email or secure file share.

Analysis/Laboratory Facilities

A brief tour of the laboratory and analysis facilities was given, where a representative example of a final effluent sample (taken by NRW officer E.Evans earlier that day) was observed. As seen in Figure 30, the effluent was of good quality with minimal discolouration and no visible solids present.

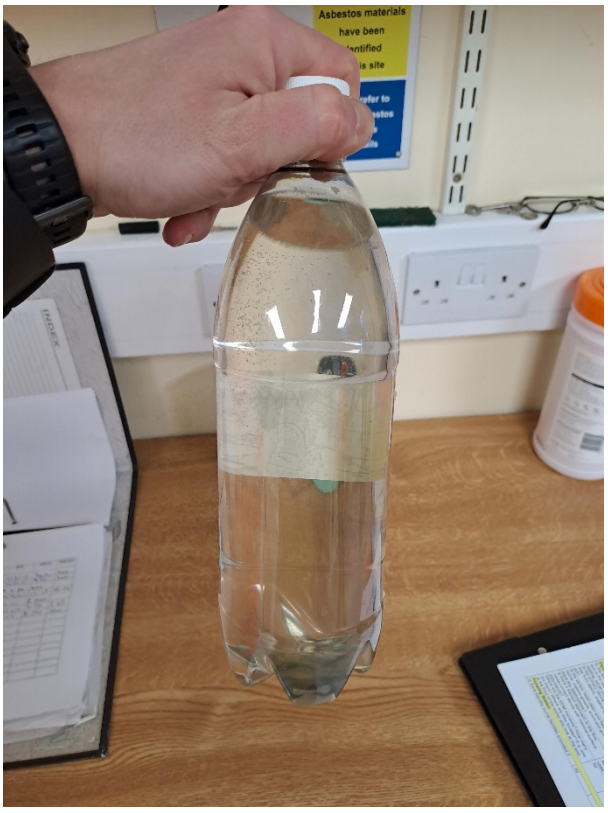

Figure 30 – Sample of the final treated effluent from the day of the visit.

The critical parameter board was observed (Figure 31) which is backed up by an escalation process if an exceedance in effluent quality is detected. All tests listed are undertaken daily. The DCWW daily sample book was observed (Figure 32) with all results within consented limits for the day of the visit.

The on-site infrastructure assessment was followed by and office meeting with DCWW operators. The remainder of the information and observations outlined in this report were

discussed during this meeting.

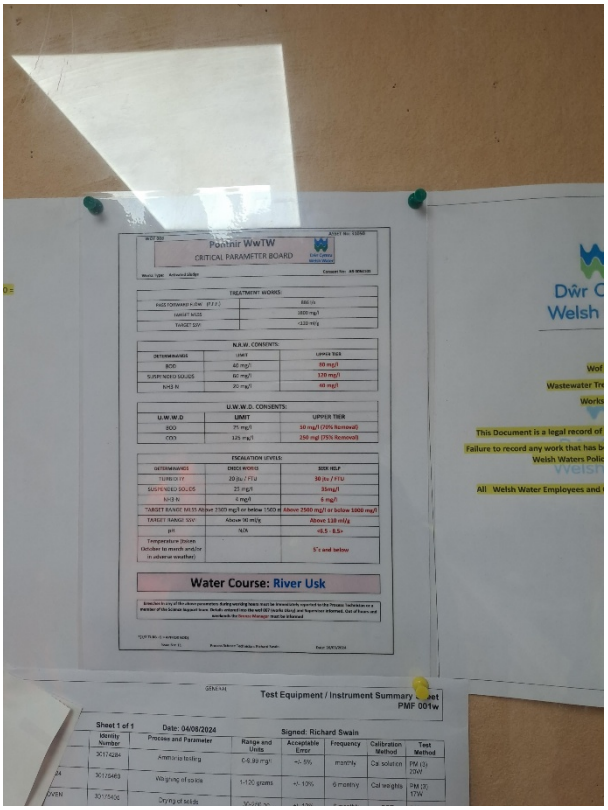

Figure 31 (Top) – The critical parameter board as observed during the visit.

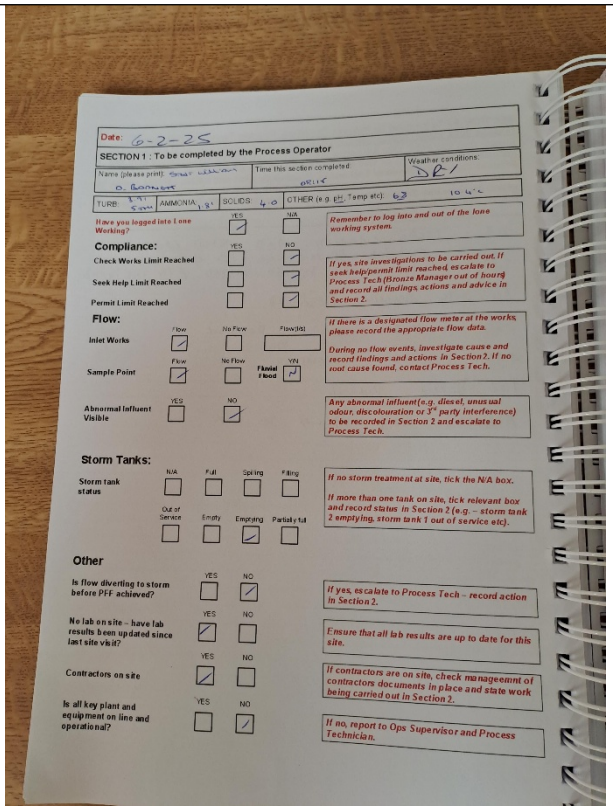

Figure 32 (Bottom) – The daily sample book as observed during the visit.

Other Infrastructure

The primary treatment site is on a dual electricity supply in the event of a power failure. The inlet works has a generator as an emergency standby measure. Breakdowns on site are managed by a six stage alarm system, 6 being the highest priority and 1 being the lowest.

Waste

No contractor tankers deposit or discharge wastes at the site, with the only tankers present being DCWW operated and only when maintenance is required. All wastes that cannot be processed are removed from site and are deposited at a Genco site in Avonmouth. The frequency of these waste transfers were stated to be monthly, with the requisite waste duty of care transfer notes being exchanged with the carrier. I have requested an example of these transfer notes for assessment.

No further discussions or observations were made during this visit.

Officers Elis Nuttall and Peter Jones left site at 14:30.

Breaches of permit conditions

No breaches were confirmed during this inspection. However, the secondary input from Star Villas raises concerns regarding effluent volume, flow monitoring and capacity. As a result, I have included an action to confirm the monitoring details on the input, the response to which will be assessed and based on the information available will be scored if the nature of the input breaches any of the associated permit conditions.

Actions required by dates specified

1. Confirm if flow monitoring is conducted on the Star Villas secondary input and how its inclusion does not breach treatment volume conditions.

Deadline: 22/01/2026

2. Maintenance – ensure settlement tank 1's bridge rotates freely and that no obstructions are restricting it.

Deadline: 22/02/2026

3. Maintenance – address collapsed and leaking baffles in primary settlement tanks 2 and 4.

Deadline: 22/02/2026

4. Reporting – Inform NRW via OPNOT when the retrofit of new blowers on the aeration lanes will/has taken place.

Deadline: 22/01/2026

5. Reporting – Inform NRW when Final settlement tank 3 is back in working operational order.

Deadline: Once complete (A six month deadline has been set for administrative purposes).

6. Reporting – Provide NRW with photos and videos of the final outfall to the River Usk so that the condition of the asset can be assessed.

Deadline: 22/02/2025

7. Reporting – Provide NRW with an example of waste transfer notes evidencing the appropriate disposal of waste off site.
   Deadline: 22/01/2025

If we do not receive the information requested within specified deadline and have not been informed as to why there is a delay then we may serve a Regulation 60 Notice requiring the information under Environmental Permitting (England and Wales) Regulations 2016.

Other advisory comments

No other advisory comments.

Contact details

If you have any queries regarding this CAR form or to provide an update on any actions above, please contact me using the following details: Elis Nuttall, Environment Officer, elis.nuttall@naturalresourceswales.gov.uk, 03000 65 4651.

Thank you,

Elis Nuttall.

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.