

Backstop Improvement Condition Extension Report

This document has been submitted to explain and evidence the need for an extension to the 12-month Backstop Improvement Condition, which has been issued to Dŵr Cymru as part of the Review of Permits process, and the subsequent investment programme of works.

| | |
|---|--|
| WwTW Name | BRONNINGTON STW |
| Permit Number | CM0072001 |
| Catchment | Dee |
| Can the site meet the total Phosphorus backstop limits now | No |
| Explanation | <ul style="list-style-type: none"> No phosphorus removal processes installed on site currently. Current long-term mean average performance 5.1 mg/l Site peaks above 10 mg/l on dry days Site not currently meeting backstop |
| Can the site meet the total Phosphorus in 12 months | No |
| Explanation | <ul style="list-style-type: none"> Current on-site assets cannot be optimised further. There is no suitable point to dose ferric in conventional manner due to asset configuration and operation. Design and installation of additional assets required. Currently no footprint on site to host the required additional assets. Increased footprint required to meet the backstop limit. |
| Primary Extension Category | Nature Based Solution (ARMPHos reedbed) |
| Secondary Extension Category | Land Purchase Risk |
| Headline category of solution | Hybrid (NBS with upscaled grey) |
| Details of proposed solution | <ul style="list-style-type: none"> Refurbish the existing reedbed Installation of ARMPHOS reedbed and all connecting apparatus |
| Land purchase required | Yes |
| Planning required | Yes |
| Protected Area surveys & Ecology approvals | Yes |
| NBS Candidate | Yes |
| Partnership / Multi sector scheme candidate | Yes (LPA has requested they utilise our final effluent post treatment to enable a nutrient neutrality NBS after DCWW's permit stops) |
| Extension Requested | 36 months |

Date requested on extended
permit Improvement Condition

26th January 2028

Date submitted to NRW

26/04/2024

DCWW senior Signature

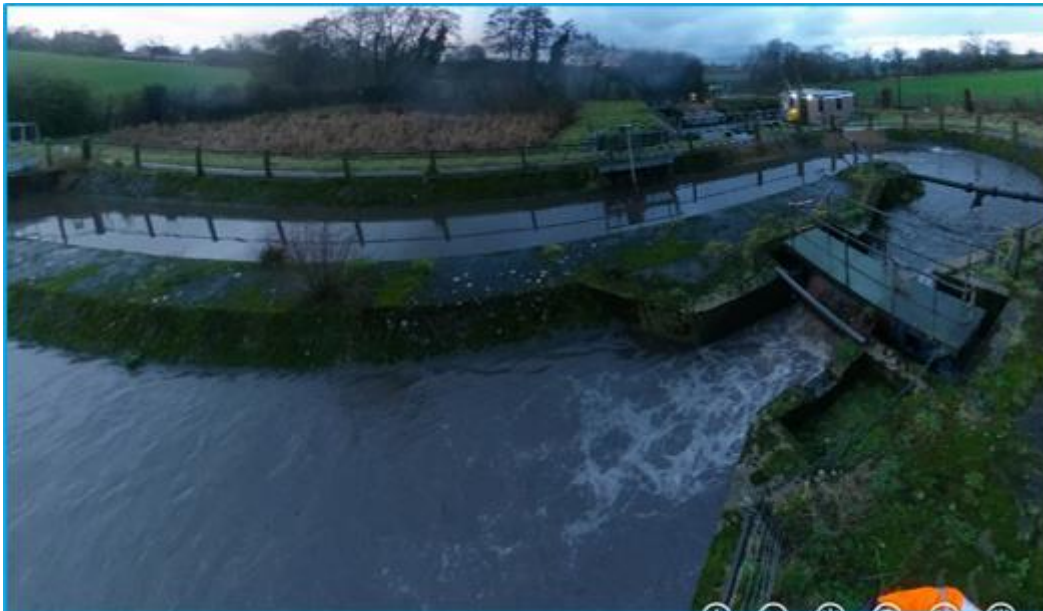
L. Hamill

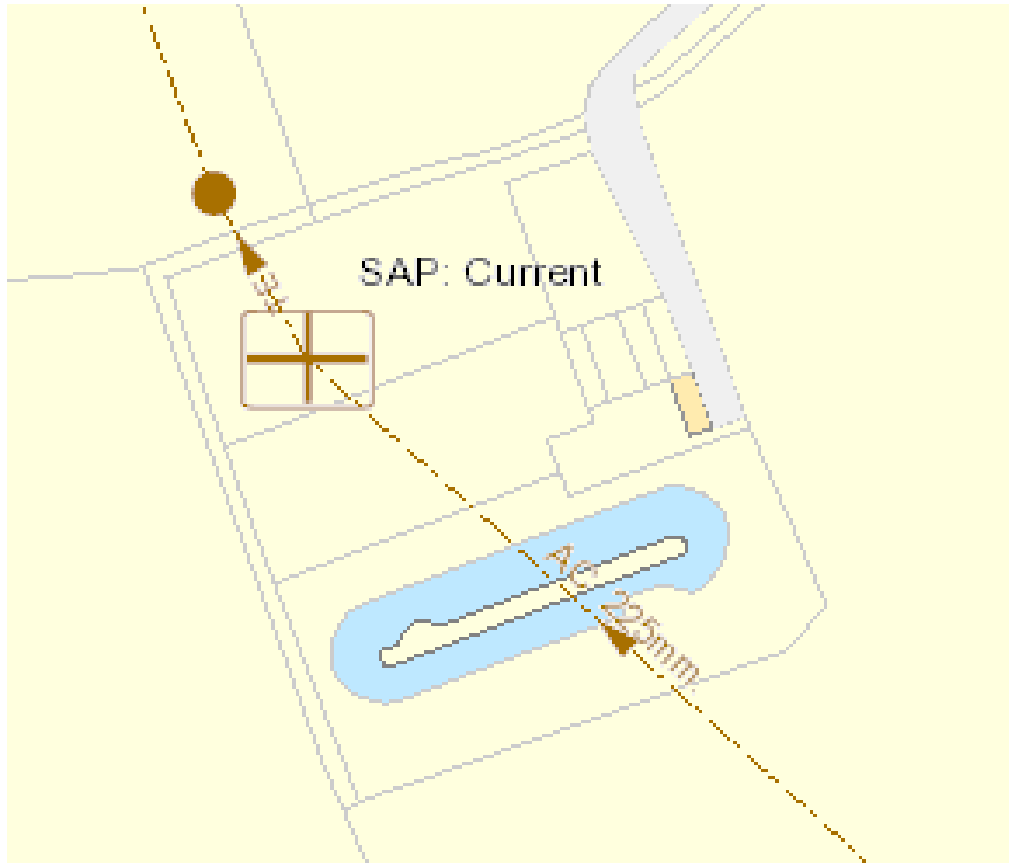
NRW Senior Signature

Appendix

A1.

Photo of current assets on site and surrounding space remaining. And GIS and Aerial image of WwTW, with 'redline boundary' of DCWW's existing landholding. Demonstrating there is no further room to expand without further land purchase, considering the river and tributary on either side of the existing land, and the boarder of mature trees to the west.





A2. Raw sample data

| | BOD ATU | Ammo-niacal Nitrogen | Suspended solids | Ortho phosphate | Total Phosphorus |
|-----------------|-------------------|-----------------------------|-------------------------|------------------------|-------------------------|
| | mg/L | mg/L | mg/L | mg/L | mg/L |
| Date | Result Val | Result Val | Result Val | Result Val | Result Val |
| 25/Jan/23 11:45 | 9 | 0.52 | 5 | 1.28 | 1.54 |
| 09/Feb/23 12:40 | 8 | 0.4 | 5 | 2.84 | 3.04 |
| 14/Feb/23 08:20 | | | | 3 | 3.14 |
| 21/Jun/23 07:28 | | | | 6.75 | 6.8 |
| 28/Jun/23 12:40 | 6 | 0.4 | 10 | 7.46 | 7.1 |
| 17/Jul/23 09:00 | 6 | 0.4 | 8 | 6.84 | 7.12 |
| 31/Jul/23 13:20 | 8 | 0.4 | 8 | 4.44 | 4.46 |
| 11/Aug/23 12:20 | 19 | 0.4 | 16 | 5.34 | 5.65 |
| 01/Sep/23 12:41 | | | | 6.29 | 6.5 |
| 08/Sep/23 10:26 | 21 | 10.4 | 27 | 13.01 | 13.2 |
| 06/Oct/23 10:40 | 6 | 0.4 | 17 | 4.73 | 5.04 |
| 18/Oct/23 10:40 | 6 | 0.4 | 7 | 2.74 | 2.88 |
| 26/Oct/23 10:40 | 6 | 6.37 | 7 | 3.21 | 3.42 |
| 10/Nov/23 09:39 | | | | 2.53 | 2.69 |
| 10/Nov/23 11:15 | 6 | 7.81 | 7 | 2.48 | 2.73 |