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Environment and Quality Strategy and Regulation

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Phosphorus Standards for Rivers

Dear UKTAG,

Thank you for inviting comments on your proposed revisions to the environmental standard for phosphorus in rivers. As our discharges are one of the largest sources of phosphorus in rivers in the area we operate, the proposals will have a significant effect on our business and in turn on our customers' bills. We therefore welcome the continued recognition that there is no exact link between phosphorus concentrations and undesirable disturbances in biology and strongly support UKTAG's recommendation that expensive action must be supported by evidence on adverse biological impact.

We also welcome the inclusion of macrophyte quality data when setting standards, as we have long held the belief that standards set solely using diatoms are inadequate as a measure of biological quality. It is critically important that macrophyte quality is part of the test for adverse biological impact when planning improvement action and as such it would be very helpful if specific advice on this is included in UKTAG's final recommendations to UK administrations.

In terms of the specific default standards being proposed, while we recognise that this is a welcome improvement over the existing standards in terms of matched biology and chemistry data, we have three principal reservations about the proposals;

Firstly, we are concerned about potential variability in the standard for any given river, driven by fluctuations in alkalinity. As alkalinity measured in terms of dissolved calcium carbonate is not static, and liable to significant movements, this is likely to result in moving goalposts for the phosphorus standard. For example, a 100 mg/l CaCO₃ swing could move the standard for good status by almost 50%. This will be a particular issue when a waterbody is close to the boundary between two classes, and could cause apparent changes in reported quality that do not align with actual quality. In turn this may cause compliance issues with the requirement to prevent deterioration. This further reinforces the need for biological corroboration of the presence of an issue before action is taken. The impact of this effect can be mitigated to a certain extent by requiring alkalinity data to be derived from an average of data points from samples taken at different times in the year.

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The second concern we have about setting site specific standards is the difficulty this will introduce in planning measures to meet the standards or prevent deterioration. This will be particularly pertinent for larger waterbodies containing multiple tributaries with materially different targets. If we plan to meet the most stringent standard within the waterbody, even if corroborated by biological evidence at the assessment point in question, this could lead to overestimation of the scale of the phosphorus reduction required elsewhere in the waterbody. It is also likely to cause difficulties in assessing monetised benefits of potential measures. While not insurmountable, we believe this merits further consideration for the UK administrations and we request guidance on how the any revised standards should be applied.

The final significant reservation we have is the application of these default standards for artificial or heavily modified rivers as the ability to test for biological corroboration of a genuine issue in the waterbody is either constrained or absent. While we accept that some heavily modified waterbodies can still be expected to display similar biological quality as an equivalent ordinary waterbody, this will not be true for all waterbodies. In particular, classification assessment points in urban areas with hard-engineered flood defences will not be able to demonstrate good biological quality regardless of the chemistry. In such circumstances, the standards are not suitable at all and will lead to unnecessary actions to achieve compliance. We strongly recommend that UKTAG consider developing alternative standards for artificial and heavily modified rivers.

In terms of the proposal for locally adjusted biological standards, we believe there is some merit in developing this further, but only to apply them in certain circumstances. As the consultation notes, the link between biology and chemistry is not exact and to set more stringent targets based on poorer biology than expected could drive unnecessary actions. That said, if it is possible to rule out any other cause for the biological classification and sufficient time has passed to allow for any previous measures to have an effect, there may well be a case to consider testing lower phosphorus standards.

Where the biology is at good or high status but the phosphorus standard is below good status and this situation persists for more than one year, there is merit in adjusting the standard to be less stringent to allow the classifications to match. In such circumstances, it would be worth recording the conditions of the waterbody in question to determine if there are correlations with similar waterbodies that may provide evidence for further refinements to the phosphorus standard in the future.

We note that the adoption of either of the principles being proposed will lead to additional requirements for biological monitoring data, and that UK administrations need to consider this when deciding on the adoption of the proposals. At present there is a considerable mismatch between the quantum of chemistry and biology data assessments which will cause delays in action to resolve some genuine issues with phosphorus. To a certain extent, this will not be critical, as affordability considerations may mean that spreading the cost of actions to meet the new standards will be welcome and higher priority sites are likely to already have monitoring data.

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In summary, we welcome some of the changes that the proposed revisions bring, but believe additional work is required to prevent variability in site specific standards driven by fluctuations in alkalinity, to consider how these standards can be applied without causing unintended consequences and to develop additional standards for artificial or heavily modified rivers. We also believe the concept of adjusted standards has some merit, but only if applied in certain circumstances.

We would be very happy to discuss any of our comments in more detail if this would be of use to you. If so, please contact Jonathan Westlake at jonathan.westlake@thameswater.co.uk.

Yours faithfully,

A handwritten signature in black ink, appearing to read "Yvette de Garis". The signature is fluid and cursive, with a large loop at the beginning.

Yvette de Garis
Head of Environment and Quality Strategy and Regulation

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