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Environment and Quality Strategy and Regulation

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Updated recommendations on environmental standards consultation

Dear UKTAG,

Thank you for the opportunity to review the proposed recommendations for changes and additions to WFD standards in the UK. Thames Water has reviewed the proposed changes and would like to raise objections and highlight some concerns in relation to some of the proposed changes.

We set out our thoughts on the individual chapters as below, but before detailed consideration of the proposals, we believe that there are wider issues of the consultation and the overall 'standards process' to address:

Consultation process

- Thames Water believes that six weeks is insufficient time to consider such proposals and we suggest such proposals should be subject to a three month consultation period in line with the first consultation on UKTAG's recommended standards;
- The documents referenced should be **all** be electronically accessible without further search;
- The status of the referenced documents must be made clear – whilst some are clearly authored by the Environment Agency, it is not obvious whether they have been adopted by Defra as UK policy. Nor, so far as we can tell, have some had the benefit of consultation;
- It is not clear exactly what is being consulted upon - in addition to the standards, the report describes implementation, compliance and subsequent action. If these are solely offered as background information then this should be made clear. Alternatively, if they are expressions of proposed implementation policy then the consultation is inadequate.

Hence it is not immediately clear if this report satisfies the accepted criteria for consultation. Nevertheless, we have attempted to provide comment by chapter;

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The standard-setting process - Chapter 1 - Introduction

Our belief is that WFD implementation should provide demonstrable benefits for the environment at a cost that is acceptable to the public generally, and, so far as improvements to water industry activities are concerned, to our bill-payers specifically.

There is a fundamental question of "why more standards?" The report recognises that as more standards are adopted, then assessment will become increasingly pessimistic under the 'one-out, all-out' rule. So far as we can tell, the impetus for deriving more standards arises from Article 11 (paragraph 5) *"Where monitoring or other data indicate that the objectives set under Article 4 are unlikely to be achieved, the member state shall ensure that…."*. This description strongly implies an evidence-based approach, rather than assessing the 'universe of chemicals' as it is described elsewhere. In the absence of evidence to the contrary – although a reference is made to a German study of adoption of specific pollutants across the EU, this cannot be accessed - it suggests that the UK is adopting an approach to directive implementation that may disadvantage the UK compared to other member states, without offering additional benefits.

Thames Water has a long-standing concern that UKTAG develops the proposed standards in isolation from the potential compliance costs. To do so may be attractive in terms of deriving very precautionary standards, but offers no opportunity to test the sensitivity of the proposals against the possible implementation costs. This is a particular issue where safety (or 'assessment') factors are applied. We would strongly urge UKTAG to follow the example of the European Commission and the recent proposal to revise the EQS Directive where an associated impact assessment has been attempted.

The introduction makes several very welcome observations and comments regarding the application of the standards, such as to make "….decisions that are well-targeted and which can be shown not to be wasteful". We fully support this aim, and it is regrettable that subsequent comments run counter to this sound approach. For instance, despite the recognised uncertainty of how standards have been derived, it is stated under 'specific pollutants' that: "The UKTAG proposes that, in general, action to achieve compliance for Specific Pollutants does not require additional and local ecological corroboration of damage. This stance is based on the nature of the substances and risks, and the process by which the standards have been set."

To avoid the issues of unnecessary (non-)compliance risk and over-precautionary action, we strongly advocate that these standards do not form part of the statutory assessment process, but rather are used as guidelines or as an indirect standard.

By way of another example, UKTAG recommends that only the most sensitive pressure indicators should be used for classification where there are multiple

options of indicators. Thames Water disagrees with this recommendation as such a precautionary approach will actually lead to reduced environmental outcomes compared with using a central-risk indicator. This is because a numerically lower standard can be expected to entail greater costs for the same benefit, which in turn enhances the risk of disproportionate cost exemptions applying.

Thames Water advocates the use of pressure indicators that reflect the central risk position when a range of options are available to avoid this.

In summary, while it is recognised that UKTAG do not make policy decisions on the cost, affordability, customer/taxpayer support (where relevant) and feasibility implications of the proposed revisions to standards, these considerations will be fundamental to policy makers. As such we recommend that such proposals are supported with high level assessments of these factors for use in a regulatory impact assessment, and that the standards are not given a direct statutory status.

Chapter 2 – Specific Pollutants

Deriving the standards for specific pollutants

We understand the need to undertake laboratory studies when initially considering toxicity risk of any given substance, but it is imperative that the fate and behaviour of the substance in the environment is the true test of toxicity when setting standards. In many instances, the toxicity of a substance decreases after mixing in the environment due to interaction with the other substances and particulates within the water environment. This leads to laboratory derived PNECs typically being inherently precautionary.

Combining precautionary laboratory data with precautionary safety factors ranging between 10 and 50 and the precautionary use of the most sensitive indicators results in a set of standards that are extremely risk-averse. In our view, this is inconsistent with the stated aim of driving decisions that are not wasteful. It is also asymmetric in terms of risk – there is a very wide range of concentrations that could be adopted to avoid potential harm, and yet a very precautionary standard is adopted and then allied to a precise compliance regime.

While we recognise the pressure for a precautionary approach to be taken, such risk averse standards lead to misrepresentation of the quality of waterbodies, increased risk of an inability to meet the target, delays in implementation, lower environmental targets or unnecessary expenditure to achieve compliance.

Thames Water strongly advocates that the standards derived should be indirect standards to mitigate against this, particularly where safety factors are applied.

As a more general observation, Thames Water finds the conclusions of table 4 ('Implications for England') very surprising, given the apparent rigour of the selection process. To us, the table would suggest that no action will be required in respect of the majority of the substances considered – in which case, it begs the question of how they became selected for consideration, bearing in mind Article 11. Alternatively, the table presents an erroneously optimistic view of water quality. A more robust approach would be not to set an EQS now, but to gather environmental data and then relate this data to impact. If there remains a case for establishing an EQS then this could be undertaken in a subsequent review.

Selection of molluscicides

UKTAG's review of substances has resulted in the selection of the molluscicide methiocarb for classification as a specific pollutant. Thames Water supports this selection, but notes that the molluscicide metaldehyde has not been selected as well. We believe there is a strong case for the selection of metaldehyde as a specific pollutant as it is in widespread use, is persistent in the environment and runs off land into the water environment. Aquatic based molluscs are obviously at risk from this substance, but there is some evidence showing toxicology impacts on other aquatic life as well.

Specific proposed standards

Copper/Zinc

We support the principle of moving to a bioavailable approach to assessing compliance for metals, however we remain opposed to the use of safety factors applied to laboratory based PNECs when setting the standard. Initial analysis of these proposed changes undertaken by independent consultants on behalf of UKWIR indicate an increase in compliance failures on average across England and Wales, with particular increase in hard water areas, including the South East.

As you will be aware, copper and zinc are ubiquitous in their use and prevalence across the UK and control at source options are relatively limited, particularly for copper. This background, in combination with the more stringent standards proposed, increases the probability that potentially expensive end-of-pipe measures will be the only viable solution to meet these objectives. While we understand these standards have been set for environmental quality objectives, it should be noted that standards for zinc and copper in drinking water are several orders of magnitude less stringent than the proposed limits, where they exist.

Thames Water therefore advocates that these standards should be categorised as indirect standards, requiring supporting biological evidence before intervention should be considered.

It is also not clear why zinc is classified considering the natural background concentration whereas copper is not. There is merit in considering the background concentration when classifying a waterbody and we would recommend that copper standard should also be developed to recognise background concentrations. This will be of significant benefit where copper mines have existed historically.

Iron

Thames Water strongly objects to classifying this element based on a total iron concentration basis. Iron toxicity is very strongly correlated with the speciation of this element and setting a standard based on the total concentration results in perverse outcomes. Water industry discharges of treated wastewater where phosphorus limit permit conditions apply typically will contain total levels of iron significantly in excess of the proposed standard as iron salts are used to precipitate the phosphorus out of solution. However concentrations of the more toxic iron species contained in the treated effluent have been shown to very rapidly speciate to less toxic forms, where environmental risk is significantly decreased. With the proposed standard this will lead to additional treatment requirements for no environmental benefit.

The current compliance gap for phosphorus in England and Wales is the most significant of all the classification elements. The combination of this new proposed standard for iron and the forthcoming more stringent standard for phosphorus later this year will significantly increase the challenge of meeting the environmental objectives for a proportional cost, yet offers no additional environmental protection.

When challenged at the UKTAG hosted launch of this consultation, Andy Rodgers on behalf of UKTAG stated that the smothering effects of iron sediments partially accounted for the need for a total iron based standard. Thames Water disagrees that this is an appropriate response to any impacts of smothering due to the high variation of sedimentation between waterbodies.

Thames Water strongly advocates that standards based on the different species of iron are derived to ensure the environment is adequately protected without unnecessarily increasing wastewater treatment costs or increasing the risk of the need to use exemptions. If UKTAG are unmovable on the use of a total iron based standard then Thames Water recommends that it should only be applied as an indirect standard to mitigate such undesirable outcomes.

Chapter 3 – Groundwater

Thames Water supports the proposal for use of threshold values linked to further investigation when assessing nitrate in groundwaters. The proposed methodology for assigning confidence to the final classification is logical.

With regards to the requirement to prevent or limit the input of pollutants into groundwater, Thames Water have concerns about setting standards based on laboratory routine limits of quantification. The limit of quantification will vary depending on the sample characteristics and over time as new analytical techniques are developed, with some techniques entailing significant cost. This approach leads to a standard that is not based on science or linked to risk, but is variable, hard to regulate and potentially unnecessarily expensive. A BATNEEC approach may mitigate the impacts of this latter point, although it would be eminently more sensible for UKTAG to recommend pragmatic interim values in the absence of formal standards.

For non-hazardous pollutants, we note UKTAG is recommending the point of compliance to be between 50m and 250m from the source of the pollutant in the direction of the groundwater flow for all aquifers, regardless of their hydraulic properties and catchment characteristics or the type of pollutant. This prescriptive approach is unlikely to reflect the true risk adequately and Thames Water advocates that UKTAG develops a risk-based approach for setting the distance at which compliance is measured.

Chapter 4 – Alien species

The idea of introducing a list of moderate impact species and an alert list is sensible and pragmatic. However the concept of developing a locally absent species assessment as part of a classification system should be pursued cautiously to avoid confusing the impacts of alien species with other environmental pressures.

Chapter 5 – River flows

Thames Water supports the proposed revisions to flow standards and the stated aim of developing indicators of ecological impacts of flow alternations. As the impacts of flow alterations on ecology is rarely well correlated, it is recommended that this remains as an indirect standard for England and Wales.

Chapter 6 – Water levels in lakes

While Thames Water notes that the proposed revisions to water levels in lakes appears logical and an improvement on the previous standards, it would like to highlight that "lakes" is not a recognised term under the WFD, rather such waterbodies are classified as "still waterbodies". Pumped storage reservoirs, which have very limited similarities with lakes, are also classified as still waterbodies and as such, Thames Water urges that great caution is applied to ensure these standards do not unwittingly apply to these reservoirs as well. It is recognised that this is not the intention of the proposals.

Chapter 7 – Intermittent discharges

The standards proposed in relation to intermittent discharges are broadly familiar as they are based on long-standing values derived from the Urban Pollution Management Manual (UPM2). However, these standards have been used in the past as design standards for improving existing intermittent discharges. Their use as a design parameter is entirely different to the application of these standards on a statutory basis for compliance assessment.

In particular, the use of the high percentile (99%ile) limit and/or an 'instantaneous' standard - or at least one applicable to very short duration – is a significant departure for the UK in terms of river quality compliance. Nor is it clear how compliance would be assessed, given the routine 'spot' samples collected at the vast majority of locations

We do not believe that the full implications of adopting such standards as part of the statutory assessment scheme have been adequately considered. Indeed, a more fundamental question is "why?" when they have been successfully used for many years on a non-statutory basis to secure improvements to intermittent discharges.

Thames Water believes that these standards could drive substantial investment to secure compliance, and no justification for their inclusion has been made. Until a thorough assessment has been made of the potential consequences, these must remain as indirect standards, or not be adopted under WFD at all, remaining as design guidance.

Chapter 8 – Acidification in rivers

Thames Water has no comments on these proposals.

If you would like to discuss any of the concerns we have highlighted here, please contact either myself or Jonathan Westlake, Environmental Regulation Manager on 020 577 9181 or at jonathan.westlake@thameswater.co.uk. We are happy for our comments to be published.

Yours faithfully,

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