

Consultation Response: Defra Consultation on Continuous Water Quality Monitoring and Event Duration Monitoring (Implementing s.81 and s.82 of the Environment Act 2021)

Questions, and our responses:

- 1. Are you responding as a charity, consumer or interest organisation, sewerage undertaker, academic, or other (please state)?**

SWS Response: Sewerage undertaker

Part 1: EDM

- 1. Question: Are you content to allow for equipment failure, so long as sewerage undertakers are required to take all reasonable steps to address any failures as soon as possible?**

SWS Response: Yes. It will be useful to have some definitions around this. We would seek to drive for availability targets, as well as dealing with any equipment failure in a reasonable period of time, if not, as soon as practically possible to do so.

- 2. Question: Are you content near-real-time event duration monitor reporting will apply everywhere it is technically feasible?**

SWS Response: Yes. We have already made available our EDM results for coastal locations, in near-real time, through our Beachbuoy App. We have engaged partner organisations and pressure groups (e.g. Surfers Against Sewage) in the development of our App. Customers are keen for us to include all storm overflows on the App to provide near real-time data on all discharges. We are keen to do so as soon as practically possible.

Part 2: Continuous WQ Monitoring

- 1. Question: Should the objectives include any additional aims? Yes or No. If Yes, what additional objectives should be included?**

SWS Response: Yes, to identify other sources of pollutants in rivers to support the delivery of the Government's wider Environment Targets, including reduction in phosphorus from agriculture into waterbodies, and potential sources / high levels of chemicals in others discharges (e.g. within discharges from surface water outfalls).

The aims should encompass the identification of wider catchment pollution impacts from, e.g. agriculture and industry. Parameters of N, P, pesticides, microplastics, emerging contaminants, bacterial load and turbidity would help identify sources of impact upstream on sewer network assets. Investing in monitoring networks should also be an enabler for the catchment approach to water management.

It will be important to consider who pays for the monitoring if wider objectives (e.g. agricultural nitrate pollution) is included within the objectives – a catchment-based approach is required in collaboration with agriculture and other industries, with financial contributions based on fair share principles.

2. Question: Are UPM FIS the appropriate standards against which to benchmark the programme for storm overflow impacts? If not, why?

SWS Response: Yes, although FIS only looks at impact on fish, not invertebrates, and doesn't provide a long-term view – just short-term impacts. It's the best we currently have for intermittent discharges. An alternative approach would be to link to WFD status to capture both urban and rural factors. This would also capture all the elements of Good Ecological Status (GES), including invertebrates – which are a better view of long-term impacts.

But it isn't all about the environmental parameters, it's also about water quality from an amenity value. Customers will want us to reflect reporting in this context too. Should this be for water companies to determine or should the EA be held to account for real time reporting and insight into the quality of water in the environment?

3. Question: Are UPM FIS the appropriate standards against which to benchmark the programme for sewage treatment work final effluent discharge impacts? If not, why?

SWS Response: No. The UPM FIS is a complex calculation that is made for intermittent discharges. It does not work for continuous discharges. This is where WFD status should be used to capture both urban and rural factors that is impacting on achieving Good Ecological Status (GES), or potential (GEP).

4. Question: Should Defra explore in future (when technically feasible) if and how nitrates can be monitored in freshwater sites? Yes or No. If Yes, why?

SWS Response: Yes. This would enable other sectors to support the achievement of favourable condition of Habitat sites and improvements to ecological status of waterbodies. Nitrates from agriculture is 70% of the cause for not achieving good status.

Nitrate in groundwater is an important part of our risk analysis for potable water and environmental work. So, we already do look at nitrates in freshwater sites. Our DWMP is

supporting better controls and investment to reduce leakage of nitrates from our sewers in groundwater protection zones. Integrating monitoring for both water and wastewater represents a potential efficiency for government and customers.

The monitoring will need to assess the impact on river WQ from all sources (i.e. including non-water company sources) in order to better inform future WINEP obligations for nutrients - e.g. do we need to address intermittent or continuous discharges to attain WFD / CMSG compliance.

5. Question: Would you support, where technically feasible, the inclusion of nitrate monitoring at wastewater treatment works for freshwater sites in catchments caught by nutrient neutrality rules – for example, in the Tees, The Broads or Stodmarsh? If so, why?

SWS Response: Yes. See response to previous question.

We will need nitrate monitoring of our final effluent at our treatment works where we have an N permit, although this would not be required to be in real time and published. For wastewater treatment works without a N permit, then monitoring of nitrate in effluent is not required.

Nitrate monitoring in the watercourse would be good, but upstream monitors would then definitely be needed to distinguish between high nitrate levels from agriculture and other sources, rather than from wastewater discharges.

6. Question: Is the 24hr lag sufficient for all watercourses? Yes or No. If No, should the lag be longer or shorter and why?

SWS Response:

This depends upon the location of the sensors in proximity to the outfall(s). Ammonia will not last 24 hours in rivers, so the proposed 24 hour period is too long. However, dissolved oxygen sags caused by algal blooms can last days so maybe in locations susceptible to these issues, the lag will need to be extended beyond 24 hours.

The frequency of sampling should be 15mins only for the first two hours of any spill, then revert to hourly. This is to take account of groundwater induced spills which could last for weeks.

The 15 mins sampling needs to be for as less time as possible, due to the energy requirements arising from the pumped sampling approach that is proposed.

7. Question: Is using the maximum point of harm arising from ammonia the right approach, rather than dissolved oxygen? Yes or No. If No, why not?

SWS Response:

Yes. Ammonia is more easily linked to wastewater point sources (sewerage or agricultural). DO is less easily linked to point sources as flow, temperature, diurnal cycles and algal blooms can alter this metric. Ammonia harm is closer to the discharge so easier to monitor than DO. However, ammonia only has EQS for saltwater, not freshwater, so this needs to be considered. For DO, it is likely to need a second monitor.

8. Question: Is the rule of “not more than 500m downstream from the point of cross-sectional mixing” appropriate? Why?

SWS Response: No, the distance could be too far, depending upon the number of other outfalls within that stretch of river. For example, the tidal reach of the River Itchen has 9 storm overflows, and 50 surface water outfalls. The surface water outfalls may contain wastewater from misconnections, hence if the sensor is too far downstream of our outfalls then we will not be able to ascertain the impacts of our discharges on water quality. More flexibility is required to take into account local conditions.

9. Question: Would the 500m rule be better expressed as a ratio based on the width of the watercourse? Why?

SWS Response: No, for the reasons stated above.

10. Question: Should there be any other site-specific considerations? If so, which?

SWS Response:

Yes, considerations should include:

- (a) number and position of other outfalls / and ownership of these other outfalls
- (b) the potential run-off from agriculture between our discharge point and the sensors
- (c) land ownership (common land)
- (d) security of equipment (theft and vandalism)
- (e) communications reliability (mobile phone signal strength)
- (f) access to power supplies (solar panels will not provide sufficient power for a pumped sampling solution).
- (g) Safe access and egress for installation and maintenance
- (h) Impact of monitoring infrastructure on community blue and green spaces
- (i) Impact of monitoring infrastructure on ecology, habitats and species
- (j) Flood risk issues – need for flood risk activity permits, protection from flooding and damage from waterborne debris, and watercourse maintenance.

11. Question: Would this rule be better if expressed as below? If yes why, or why not? “Where there are two or more assets with overlapping mixing zones within 250m of one another in a single length of watercourse, these can be considered a cluster and monitored by one pair of monitors.”

SWS Response:

The principle of clustering is fine when discharges within the cluster are only from water company assets. In these cases, then the water company must investigate the source of a breach of water quality standards. Water company customers should not be required to pay for investigations into discharges from other operators and/or sectors, such as agriculture or highways.

12. Question: Do you agree with the proposed cap of 10 on clustering? If not, why not, and what should the cap be?

SWS Response:

We do not consider that a cap on clustering is necessary. The purpose of the monitoring is to allow sewerage undertakers to assess the impact of discharges from their assets on the receiving watercourse. This will not be possible for large clusters as there will be other factors impacting on the water quality, such as road runoff and discharges from agriculture.

Water companies and EA should work together to decide on the appropriate number of monitors in order to determine the impact of discharges from only water company assets.

13. Question: Is it reasonable to require sewerage undertakers to attribute the source of a breach of standards to a particular asset? Why?

SWS Response:

Yes - we want to have real-time information on receiving water quality so we can be on top of the performance of our assets. Investigations funded by our customers should be limited only to our assets. The permit compliance monitoring at our assets will need to take precedence over river WQ monitoring – hence any investigation into breach of standards within the river will first look at compliance. If our discharges are found to be compliant then the investigation ends, and information passed to the Environment Agency.

14. Question: Should there be any additional exemptions? How would they benefit the programme?

SWS Response:

Exemptions need to be considered for assets where there is no record of discharges (i.e. zero spills). Water company customers have already paid for EDMs for all storm overflows irrespective of whether they have ever had any spills, and WINEP for AMP8 is seeking to extend monitoring to emergency overflows too. Therefore, there is a good level of monitoring of assets to report on number of spills. This exception could be extended to any assets with less than, say 5 or 10 spills per annum, or even if they are spilling in accordance with the permit and only in storm conditions (i.e. achieving the dilution requirements). We are investing to bring the number of discharges to less than ten – so why install monitors for any spilling less than 10 – especially as we will not be able to invest further to reduce spills to less than 10 under the Defra storm overflow discharge reduction programme.

Discharges to coastal or transitional waters should not require upstream and downstream monitoring.

Exemptions should be allowed where the waterbody is currently in good ecological status (or potential) or is only not achieving good due to reasons other than water company operations.

It may be technically possible to provide monitoring for sites, although considerations for exemptions need to consider the requirements for landowner permission, security/safety of the installation, the equipment itself and access for maintenance. Where it is unreasonable or disproportionate cost to install and maintain monitoring then an exemption should be allowed.

Finally, an exemption is required for shallow rivers, or during periods of low flows (i.e. less than 4cm depth of flow).

The exceptions could be temporary to enable the programme to be affordable and deliverable, using phasing of the installation to enable experience to be gained and reduce costs for future installations.

15. Question: What data should be included and what is the best way to display this data to ensure it usefully informs the public/meet your needs?

SWS Response:

We have experience of publishing spill data in near real-time through the creation and development of our Beachbuoy App. We have been working with other organisations, including Surfers Against Sewage, to obtain customer feedback and input into design and features for presenting spill data in the public domain.

We are concerned that if left to water companies then the service provided to customers will vary across the country. If the continuous WQ monitoring is managed and data provided by a third party to all water companies then there will be greater consistency in the data and a single source of data. The single provider would be independent of water companies and they will be able to obtain a better feel of what customers want. Consistency is a WINEP requirement. There is also a question of trust. Customers may not trust data collected and provided by water companies. This approach could be funded through an annual fee paid by water companies to obtain the data.

We have consulted our customers on river and coastal water quality data. Their feedback was that the Environment Agency should be doing this. They said it is the EA's job to do this so they can regulate water companies. Customers are more likely to trust the data if collected and published by the EA. The EA also has local areas covering the whole of England, and powers of entry / access to sites for the purpose of monitoring. They also have expertise in instrumentation in rivers (such as spot sampling, continuous sampling and river gauging). The EA could be funded by water companies to provide the data, although customers consider that this would not make the EA independent.

A final thought, if monitoring is clustered and can potentially detect other sources of pollutants, then we are concerned that the burden of proof will fall on water companies to demonstrate it's not us but someone else. If we live report, despite what we say past that point people will assume we have caused the issue. This is why the independent reporting and then categorisation is important.

16. Question: What other contextual information is required to ensure that everyone will be able to understand the data?

SWS Response:

We have experience of this as a result of the development and launch of our Beachbuoy App to publish EDM data in near real-time. We are happy to meet to discuss this further. Issues to consider include:

- Data relative to triggers and thresholds – need to be agreed with the EA / regulators.
- Reason for failure in the waterbody - its not necessarily going to be due to a water company asset, e.g. engineered rivers and DO - we need to put the bends back in and pool / riffle sequences
- Relevant WFD / CMSG targets for parameters monitored
- Other potential sources of nutrients and causes of poor water quality.