REFERENCE

2526331

RELEASE DATE

October 2025

SUBJECT

Information regarding monitoring and sampling of wastewater treatment works and sewage discharge outlets operated by NI Water in Northern Ireland.

RESPONSE

NI Water replies to each of your queries in turn as follows.

1. **How often, in the last ten years, have ground-based upstream and downstream water quality samples been taken at NI Water discharge points? Please break this down by year.**

Please find attached as Annex A a copy of the results of this sampling from 2015 to 2024.

2. **For each instance of such sampling, please specify:**

- **The location (treatment works or discharge outlet name and receiving water body).**
- **Whether the discharge was treated wastewater, untreated sewage, or storm overflow.**
- **The type of parameters tested (e.g. nutrients, phosphorus, nitrogen, chlorophyll, biological indicators, etc.).**
- **Whether both upstream and downstream of the discharge point were sampled.**

Please see Annex A.

3. **Please provide copies or summaries of the resulting reports, datasets, or findings, including any analysis of impacts on water quality or ecology.**

NI Water is currently progressing water quality models of the seven major river systems which discharge into Lough Neagh. These industry leading models identify pollution sources and clearly evidence how much is attributable to all sources, including both wastewater and agricultural, based on sound data. Ultimately, the models will be used by NI Water as a tool to inform the targeting of investment action in the right locations to deliver better water quality outcomes.

NI Water has undertaken extensive data collection across the seven river systems flowing into Lough Neagh, the main focus being wastewater assets. Water quality sampling is systemically undertaken at key locations to assess NI Water's impact on the receiving waterbodies, typically upstream and downstream of storm overflows.

NI Water also samples final effluent (FE) from Wastewater Treatment Works (WwTW) on a routine basis, as well as targeting wet weather event sampling.

The following data is collected:

- **Continuous Monitoring -** Real-time continuous river data measurements via sondes installed at 166 sites upstream and downstream of key NI Water assets, capturing Temperature, pH, conductivity & Dissolved Oxygen (DO).
- **Routine Sampling -** Fortnightly sampling across catchments at 179 sites to track baseline water quality and trends for Phosphorus, Oxidised Nitrogen, Total Nitrogen, Ammonium, Biological Oxygen Demand (BOD).
- **Rainfall Event Sampling -** Targeted sampling during storms to assess overflow impacts. High intensity sampling, typically hourly for 24 hours over approximately 170 sites recording Ammonium, BOD, Phosphorus, Oxidised Nitrogen, Total Nitrogen.
- **Overflow Verification -** Cameras at wastewater treatment works and pumping stations confirm overflow events.
- **River and Rainfall Data -** Using gauges and weather instruments.

Water quality data has been collected or is currently being collected throughout the catchments to support model building (calibration and validation). The collected data,

alongside longer-term Water Framework Directive (WFD) data, ensures the models reflect, as closely as possible, actual water quality conditions.

NI Water's assessments undertake Water Framework Directive (WFD) analysis of BOD, Ammonia, SRP. We also undertake Urban Pollution Management (UPM) assessments in the form of high percentiles, BOD and Ammonia and FIS assessments (Fundamental Intermittent Standards) for DO and unionised ammonia.

All NI Water's models are audited by a third-party independent modelling specialist at key milestones, including but not limited to – model conceptualisation, hydraulic calibration, water quality calibration and baseline compliance assessment.

NI Water actively liaise with key stakeholders throughout the modelling process. The Catchment Based Outcomes (CBO) group is a monthly forum where NI Water engage with Northern Ireland Environment Agency (NIEA), Department of Agriculture, Environment and Rural Affairs (DAERA) and Agri-Food and Biosciences Institute (AFBI) ensuring collaboration, data sharing and robust challenge.

Data collection and modelling of the Maine, Ballinderry and Moyola rivers is now complete. Emerging results indicate that, on average, across the three river catchments, around 20-22% of Phosphorous is attributable to NI Water wastewater sources. There are other private and commercial wastewater sources not within NI Water's control. Importantly, based on the results to date, there is a clear pattern showing that storm overflows contribute less to nutrient loading than final treated effluent from treatment works. These indicative results would support and appear to align with the broader source apportionment figures already published.

Results for the Blackwater are anticipated later this year, with the other three river catchments due for completion in 2027.

NI Water is also committed to working with Uisce Éireann on the WEST project (Water Enhancements through Sustainable Treatment). This project represents a cross-border partnership working collaboratively to improve water quality within the cross-

border Erne catchment. Scoping of the catchment has been completed with water quality and flow monitoring due to commence in early 2026.

4. **If no such upstream/downstream ground-based sampling has been conducted at NI Water outlets in the last ten years, please confirm this explicitly.**

Not applicable.