

Dear [REDACTED],

Thank you for your request for environmental information. We appreciate your interest, and we want to let you know that your request has been carefully considered in accordance with the Environmental Information Regulations (EIR). As the request contained a number of specific questions, this response, restates each part of the request (in bold) and then follows this with our response:

Additives added during the treatment process, their concentrations and any other substances introduced or remaining after treatment

Almost all drinking water treatment involves the use of chemicals to make the raw water safe to drink. Raw water is water which has not yet gone through a treatment process. All raw water needs to be treated to ensure that it is safe to drink; drinking raw water would risk public health and may cause serious illness. All chemicals used in the treatment process have to meet strict requirements that are set out in the relevant British Standards and the amount of chemical dosed is monitored closely to ensure that the minimum amount required is added. The dose applied varies through time and is set depending on the source water quality. We are unable to provide the concentrations of chemicals once dosed as this changes regularly to ensure that the treatment process operates correctly. Much of the chemicals applied are removed by later stages of treatment and so the levels applied within treatment do not reflect the levels received by customers.

The water supplied to your area (Water Supply Zone 309) comes from the Lake District, local reservoir sources and from other local ground water sources. Before it reaches your home, this raw water undergoes a thorough treatment process to ensure it is safe to drink. As the water you receive comes from several sources, it is treated at several of our water treatment works. As our water treatment works are designed specifically to treat the raw water it receives, the treatment does vary from site to site to ensure the treated water meets the required standards.

I have enclosed a fact sheet titled '**Water Treatment Chemicals**' with this response. This lists all the possible chemicals used throughout the treatment process. We do not necessarily add every chemical on this list at every one of our treatment sites. A full breakdown of the treatment processes and chemicals used at the treatment works supplying your property is included below.

As mentioned above, your water supply comes from the Lake District (lake and reservoir sources), local reservoir sources and from other local ground water sources. The first step in water treatment for these lake and reservoir sources involves removing particles from the raw water. This is done by adding chemicals called coagulants, such as aluminium sulphate or ferric sulphate, which help these particles stick together. A flocculant aid (polymer) is added to improve this process along with adjusting the pH of the water. This adjustment is done via the addition of sodium hydroxide, lime, or



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sulphuric acid. Once the particles have clumped together, they, along with the coagulant and coagulant aid, are removed through filtration systems. After filtration, the water goes through disinfection to remove any harmful bacteria. This is done using sodium hypochlorite (chlorine) and chlorine gas, although some sites supplying your property also use ultraviolet (UV) light. The amount of disinfectant used is carefully controlled and only the smallest amount possible is added whilst ensuring the water is safe to drink.

Water treatment for groundwater sources is less as groundwater has passed through layers of rock, which removes many impurities and harmful bacteria. This means it has been naturally filtered and only requires disinfecting with chlorine or ultraviolet (UV) light.

Before any water from any of our treatment works is sent out to homes and businesses, a small amount of phosphate is added. This helps protect against lead dissolving into the water from old pipework, especially in properties that still have lead pipes. Final adjustments can also be made to the pH to ensure the water is stable and suitable for distribution.

To summarise, I have listed the chemicals used within water treatment for your specific zone below:

- Coagulant: aluminium sulphate or ferric sulphate
- pH correction: sodium hydroxide or sulphuric acid
- Disinfection stage: sodium hypochlorite and sodium bisulphate
- Lead control: sodium orthophosphate

We collect samples daily from customer properties, water treatment works and service reservoirs and they are tested in an accredited laboratory to ensure that water quality meets the requirements set within the regulations. There is a list of parameters which we must monitor for and within this, a set of Prescribed Concentration or Values (PCVs) that are more simply, the regulatory standard or legal limit. All the results of these regulatory samples are made available to the public through our website as described below.

You can view the latest water quality data for the water supplied to your area on our website at <https://www.unitedutilities.com/help-and-support/your-water-supply/>. If you input your postcode on the website, the results of samples that have been taken in the last 12 months from your local area can be viewed. The report covers a rolling 12-month period and is updated weekly. The number of samples that are required to be taken is set out in the regulations. I have included a useful factsheet called '**Your Drinking Water Quality**'. This will help you understand the information included within this report.

You will see from this report that there has been a single exceedance of the water quality standards in your water supply zone for the past 12 months. This exceedance was for coliform bacteria.

Where there is an exceedance of the water quality standards a full investigation is carried out including and not limited to obtaining resamples from appropriate locations, onsite investigations by field staff and carrying out a review of water quality and online data. When a root cause is identified, action is

taken to rectify the issue and customers are advised how to prevent an occurrence where the cause is related to the condition of the internal plumbing within a customer's property. These detections and the subsequent investigations are reported to the Drinking Water Inspectorate.

As part of our investigations into the coliform bacteria exceedance, we determined the likely cause of the bacteria infringement was related to the specific property that was sampled and was not representative of the water supply to the area. The customer was advised of actions to take to prevent a reoccurrence.

You requested information with regards to specific parameters which we have expanded on below.

Levels of chlorine

With respect to chlorine, there is no specific regulatory maximum level of chlorine in drinking water in England, the World Health Organisation has set a guideline maximum value of 5 mg/l for chlorine. Typically, the water leaving the water treatment works has a chlorine residual between 1 and 1.5mg/l as we must maintain a residual as the water travels through the distribution network. The concentration of chlorine reduces with time and with distance from the treatment works which explains why there is variation in the results in your water supply zone. The levels detected at properties in your WSZ are well below these levels and are not unusual of public water supplies in the United Utilities area.

Levels of fluoride

We can confirm that the water supplied to your area is low in naturally occurring fluoride and is not artificially fluoridated. As you can see from within the Drinking Water Register, the results from within your area show that there is a very small amount of naturally occurring fluoride in your water supply and is below the WHO maximum value and PCV.

Presence of microplastics

All of our water treatment works that treat water from rivers, springs and reservoirs have robust treatment processes in place that remove microplastics from the drinking water. Conventional drinking-water systems can remove particles smaller than a micrometre through processes of coagulation, flocculation, sedimentation/flotation, and filtration. Water UK research shows that current water treatment processes remove 99.9% of microplastic particles from sources of drinking water. Raw water contained on average 4.9 microplastics per litre while potable water (water that has gone through a treatment process) contained only 0.00011 microplastics per litre. This was further confirmed by research published by the Drinking Water Inspectorate in 2022 [Publication of research on the Removal of Microplastics by Drinking Water Treatment Processes - Drinking Water Inspectorate \(dwi.gov.uk\)](#)

Based on the above, we do not currently monitor for microplastics in drinking water but will continue to be involved in research in this area, as well as development of standardised methods for

microplastic analysis.

Heavy metal traces (including lead, copper, and aluminium)

The concentrations of heavy metals from samples in your area are on our Drinking Water Register you can find by following the link shared above and in the attached report for your water supply zone. As I have mentioned above, the results from your area for the past 12 months met the water quality standards.

PFAS (“forever chemicals”)

Currently, there are no regulatory standards for PFAS in drinking water. However, recommendations have been made to include such standards in the next review of the Water Supply (Water Quality) Regulations. In the meantime, the Drinking Water Inspectorate (DWI) has issued guidance that the water industry must follow.

The DWI’s approach is based on a three-tier system, which reflects the level of PFAS detected and determines the actions required for detections at each level:

Tiers	Value	Risk Level
Tier 1	<0.01 µg/L	Low Risk
Tier 2	<0.1 µg/L	Medium Risk
Tier 3	>0.1 µg/L	High Risk

In line with this guidance, water companies focus PFAS monitoring at source locations and water treatment works (WTW). We’re pleased to share that the results from the source waters for the treatment works, and the WTW supplying your property are classified as Tier 1 (lowest risk) and for completeness, this data has been included in an accompanying document titled ‘EIR-629 PFAS Data’. Please note that in line with Regulation 12(5)(a) of the EIR, we are unable to disclose sample locations due to security and public safety and have therefore labelled each sample location as WTW 1-4. The sampling carried out is in line with the DWI guidance for low-risk sites. The data contains the most recent PFAS results for the treatment works supplying your property.

As mentioned above, we routinely monitor all our drinking water sources for PFAS, and all our treated drinking water is compliant with the requirements of the guidance and the proposed future standard for drinking water in England and Wales.

Pipe infrastructure quality

We are not aware of any known contamination issues or risks with the pipework within the area feeding your property. We’re currently looking to upgrade over 925km of water mains across the North West as part of our five-year plan for AMP8. We will be using a range of techniques, including slip-lining where new pipe is inserted into the old pipe, to minimise disruption.



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The replacement mains are expected to last for more than 100 years and are built to withstand high pressure and temperature variations to help protect against bursts and reduce leaks, both of which will play a key role in safeguarding water supplies for millions of customers across the region. You can read more about this here: [United Utilities investing £380m to upgrade water mains across the region.](#)

We previously offered to arrange water quality sampling at your property on 16 December 2025, but understood your preference was to wait for our written response before proceeding with such. If you would now like to arrange sampling, please contact EIRRequests@uuplc.co.uk, and we'll be happy to organise a sampler to attend your property at a time that suits you.

We hope that this response answers your request. However, if you're not satisfied with how we've handled it, you can request an internal review. To do this, please write to us at Environmental Information Office, Haweswater House, Lingley Mere, Warrington, WA5 3LP or email us at EIRRequests@uuplc.co.uk, addressing your request to [REDACTED] and explaining why you're unhappy with our response. We'll be very happy to review your request and ensure we've done everything we can to assist you.

Any request for an internal review should be made within 40 working days of receipt of this response, and we will reply within 40 working days from receipt of the request for internal review.

Kind regards,



We'd love to hear your feedback on how we handled your request! If you have a moment, please complete our short survey [here](#) – your input helps us improve our service.