

Name:
Sophie

Job title:
In-organic scientist

Career:
I have always been interested in natural science and studied Environmental Science at university. After uni, I became a sample technician at Affinity Water for six months and was then promoted to become a scientist. You never know which opportunities are just around the corner once you have got your foot in the door. Water needs to be safe for people to use, and I actually learned a lot from my chemistry tests in school which I still apply on a daily basis.



Responsibilities:

- Deal with the samplers, who are the people who go out to get the samples from rivers, treatment works and homes or businesses all over Affinity Water's operating area.
- Carry out checks and investigations
- If the scientists have identified a problem with the water, they then need to find the source of the problem

Essential skills in my job:

- Good communication skills
- Organisational skills
- Knowing how to prioritise work

What I need to know in my job:

- Scientific and technical knowledge
- Health and safety protocols
- Statutory requirements



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In-organic scientist, Sophie

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There are currently forty scientists in my lab, who work in the Biology and Organic and In-organic Chemistry departments. 24 of the workers are female, so there is a very even split. The same applies to senior leadership.

On a daily basis, I deal with the samplers, who are the people who go out to get the samples from rivers, treatment works and homes or businesses all over Affinity Water's operating area. Again, over 50% of our samplers are female. Most samples are taken from our pipe network, reservoirs and water treatment sites to confirm that the water is of a very high quality. Sometimes the samples are requested by commercial organisations, and at other times, Affinity Water's customers call in because they feel that there is something wrong with their water or they have a question about water quality. Often their queries can be dealt with over the phone but in some cases Affinity Water has to send someone within 24 hours to check the water supply at the customer's house. About 500 samples are brought into the lab on a daily basis, where they are tested for a whole series of analysis to check that the water is 'wholesome' or fit to drink. If a high level of a particular substance is found, then the scientists have to carry out further checks and investigations to try and find out where it came from.

The main challenge for the scientists is to confirm whether a) the water is wholesome and fit to drink or b) investigate any elevated levels of material in the water. In the past, sea shells, hemp and a range of other materials have been found in the water before it has been treated, but 99.99% of all samples in our pipes and taps pass this quality test. If the scientists have identified a problem with the water, they then need to find the source of the problem, by re-visiting the place the water sample came from and checking whether anyone has been affected. This may be a dirty tap, but could also be problems with the customers' plumbing or other areas.

It was fascinating to learn that shells and snails in particular have become an invasive species in the River Thames. Changes to the natural ecosystems like this as well as the changes that happen to our pipe network underground can all potentially have an impact on our water; so as part of my job, I always have to talk to other teams and have a good understanding of what is going on so I can work out where a problem might be coming from. The Drinking Water Inspectorate (DWI) specifies the maximum levels of certain substances that are allowed to be in the water. All water contains natural levels of chemicals such as iron, aluminium and sulphate, which generally come from the bedrock and natural strata. Some substances such as pesticides, lead and fuel mainly come from human activities and our job is to measure the levels of all these substances and check that they are below the DWI levels. While we scientists only have 24 hours to do the first set of more simple tests to determine whether there is a contamination in the water, we have up to 10 days to find out about more complex contamination such as pesticides.

I sometimes travel around the UK with my work and there are opportunities to travel beyond the UK as science is the same all over the world. For example, I could also apply for work in the States or Asia if I wanted to.

Every day is different for me. I come in at 9am, check my emails, check the results analysis, send failure reports and prepare the machines and solutions for the next tests. The most interesting recent work has been fixing a broken machine, on which I worked for three months. I wrote a ten page document for the manufacturer and it helped everyone to understand the machine better.

I think that the most important aspect of the work is that you enjoy it and that you find it fun. Don't be scared to make mistakes.

