Paul:
I've come to Glasgow, home to the River Clyde. Running through the heart of the city, it's a river that has impacted by an industrial heritage and a growing population.
Doctor John Wilkinson and Professor Alistair Boxall, from the University of York, have been conducting research into the health of rivers across the world, including the Clyde, focusing on the presence of pharmaceuticals in our waterways.
What a preposterous bucket you've got there.
Dr John Wilkinson:
It's a little one, yeah. The nice thing about it is it's small and it's light and we can send it to every corner of the planet. Some of the places that we do a lot of work are places like Nairobi in Kenya, across the United States and China, in Australia. Every continent on the Planet.
Paul:
Antarctica? You said seven continents.
Dr John Wilkinson:
We do have Antarctica, yeah.
Alistair Boxall:
And a really remote village in the Amazon.
Paul:
Alistair and John's research has been ground-breaking, winning worldwide acclaim and awards. But it's their findings closer to home which are some of the most damning.
Dr John Wilkinson:
Some of the pharmaceuticals that we tend to find most frequently in the UK are things like metformin. It's used to treat type 2 diabetes.
We also find things like ibuprofen, paracetamol and even some antidepressants as well. Anything that we put in our bodies that will eventually make its way to a sewage treatment plant and eventually to a river.
On the River Clyde is where we measured the highest levels of pharmaceutical contaminants that we observed across the entire UK.
Paul:
So the Clyde is the most contaminated - this part of the Clyde - contaminated river in the UK?
Dr John Wilkinson:
From what we observed, yeah, when we were, when we were monitoring the Clyde and that has a lot to do with what's just to our right here, which is the sewage treatment works.
So we will see residues of the things that we put in our bodies that come out of these plants.
The wonderful thing about waste water and sewage is that it is a mirror of the health and well being of people who live above it.

Paul:
The wonderful thing about it.
Dr John Wilkinson:
If there is anything.
Paul:
If there's anything wonderful about it.
Dr John Wilkinson:
What we think happened was probably a permitted discharge under a combined sewage overflow. You always are going to have some signature of the chemical lives that we live in treated waste water.
But when that wastewater completely bypasses that treatment process in a CSO event, that's just magnified.
We get astronomical concentrations of these contaminants and therefore we start to pick chemicals up in our analysis that we don't usually see.
So, for example paracetamol is typically really well degraded by Wastewater Treatment Plants like this one.
But when we see these combined sewage overflows, that sewage is not being treated and therefore, we end up seeing a load of it in the river that we wouldn't normally see.
Paul:
You know, I love, I love rivers and I'm really starting to feel their pain. I'm getting a bit tree-huggy here, but it is, it's very sad, isn't it. And you can almost hear 'em crying, the poor things. You know? We've just, we've just abused them for so long.