

Government continues to proactively follow up on water quality incidents at Queen's Hill Estate and Shan Lai Court

The Water Supplies Department (WSD) and the Housing Department (HD) attach great importance to the water quality incidents at Queen's Hill Estate and Shan Lai Court and have immediately set up a working group to closely follow up on the incidents, including checking water supply pipes, cleaning water tanks, installing filters, conducting daily testing on water samples continuously and sending samples of sediments to the Government Laboratory for testing.

So far, all water samples have complied with the Hong Kong Drinking Water Standards, including the Rapid Toxicity Test (light emitting bacteria) and Carcinogenic Benzo(a) pyrene for testing carcinogens. These two parameters were negative in all the results of the water samples tested. While ensuring that the water quality met standards, the WSD also conducted traceability work and passed 126 samples of materials collected from each block in the estates for the Government Laboratory's testing on June 3. Preliminary test results indicated that most of the samples consist of bitumen mixed with resin.

Bitumen was commonly used as a protective coating to prevent rust inside steel water pipes around the world in earlier years. It is an inert material and is insoluble in water. According to experts' views, bitumen will not release materials harmful to human body after mixing with water. In other words, even if drinking water has come into contact with water pipes coated with bitumen, relevant water quality will still comply with the drinking water standards. However, after prolonged use of water pipes, bitumen coating is prone to spalling, which is not durable and affects the clarity of drinking water and the public's perception. Therefore, bitumen coated steel pipes have been replaced with durable epoxy resin-coated steel pipes for water supply pipes laid after 2005.

As to whether drinking water containing bitumen will affect health, the WSD commissioned an expert consultant in 2020 to conduct an experiment by boiling 10 grams of bitumen in three litres of hot water. The result confirmed that no toxic substances were released. Currently, the sediments (bitumen) in the water samples taken from Queen's Hill Estate are three-thousandth of the amount used in that experiment (per litre), so members of the public need not worry even if they have consumed drinking water with bitumen.

According to records, the relevant pipes in the Queen's Hill Estate and Shan Lai Court do not contain bitumen materials. Furthermore, following a

similar water quality incident at Queen's Hill Estate in 2022, the WSD installed screen filters outside the Queen's Hill Estate in December 2022, which can block substances larger than 0.1 millimeters in diameter. Since then, the WSD has regularly inspected the condition of the filters on a weekly basis. After receiving a report on the water quality incident on May 30, the WSD checked the filters again and confirmed it remained intact, without any damage. Given that the sediments found within the estate exceed 0.1mm, they should not have entered the estate's water supply system after the filters were installed (i.e. after December 2022). Upon reviewing the information, it was found that there is a section of steel water pipe upstream coated with bitumen on the inner wall. As such, the WSD reckoned that the sediments are likely residual bitumen materials that flowed into the pipes of the Queen's Hill Estate from the aforementioned steel pipe before December 2022. As for the resin material, based on its color, appearance, and chemical composition, it is likely due to the flaking off of the protective layer of water valves.

The WSD will continue the investigation based on the above assumptions, and as always, will submit the investigation report of this incident to the Drinking Water Safety Advisory Committee for review.

Currently, the WSD will enhance the flushing of pipes to remove any residual bitumen materials, and strengthen water sampling. Sampling and testing will be conducted daily until no related sediments are found. The valves in the water supply system will also be checked. Any materials that have flaked off will be replaced if necessary. Understanding the public's concerns regarding this incident, the WSD will continue to arrange temporary water supply through water tanks.

To address the issue, maintenance teams of the HD have responded swiftly by installing additional nine screen filters with a density that can block impurities with a diameter of 0.1 millimetres or larger on the existing facilities in Queens Hill Estate and Shan Lai Court. The HD also continued to install additional filtering facilities with the same density that can block impurities with a diameter of 0.1 millimetres or larger in Queens Hill Estate and Shan Lai Court (seven and six respectively) today (June 5). The works will be completed today. Within a short period of time, the HD has tried its best to have 22 new filtering facilities installed, hoping that by quickly providing an effective, multi-layered protective filtration system, residents can feel more at ease when consuming the water.

To further alleviate public concerns, the WSD will release the test results of water samples on its website every morning.