

Infrastructure Category: Water and Wastewater Systems

National Scenario:

A once-in-a-lifetime heatwave hits the UK and Western Europe. In England, infrastructure suffers across the board, but particularly within the water sector. Increased demand and high rates of evaporation lead to a declaration of severe drought. Reservoirs and groundwater reserves begin to run dry, especially in the southeast. Limits are established on water use for civilians and for agriculture. Water suppliers work overtime to keep the nation supplied with clean water.

Regional Scenario:

The UK's water industry is privatised. Mercia Water* owns dozens of water treatment plants and reservoirs that supply millions of consumers in central and southern England. Poor management and prioritisation of short-term shareholder profits over long-term strategic resilience has left the company in a vulnerable state. There are no significant contingency plans for conditions of severe drought; their infrastructure is old and poorly maintained; and staff development opportunities, such as cybersecurity training, are rarely prioritised.

Habney Edge* is one of Mercia Water's treatment plants, and supplies drinking-quality water to the medium-sized town of Godchester*, home to around 400,000 people. The drought led Habney Edge's normal water sources, a pair of large artificial reservoirs, to drop to record low levels. The plant turned to its backup supplies of stored treated water, kept in an underground tank at a secure site.

Some days prior, a cybercriminal organisation used an AI-assisted phishing attack to access the physical security systems of the water storage site. By disabling these systems, they were able to access the site undetected and contaminate the tanks with high levels of the industrial pesticide Epsilox*. The organisation is an extreme right-wing group called Advance Guard*, who object to the UK's recently relaxed immigration policy for climate refugees from northern Africa. Godchester was targeted as it is home to many minority communities, including recently-settled African refugees.

Because Epsilox is not used in the UK, standard water quality tests did not detect the pesticide; instead, a manual tester the following day reported a strange odour which prompted further tests and led to the discovery of the contaminant.

Response:

Upon detection, Mercia Water immediately reported the finding to the Ministry of Water and Sewage* and cut off supplies. Water that was already in the distribution network was collected by tankers from mains access points. As there was a high chance that contaminated water could already be downstream of these access points, Mercia Water and the Ministry collaborated to communicate risks to water users.

Mercia Water contacted Godchester residents via text, email, and calls with instructions to not use tap water for any purposes; some hours later, the government mobilised the army to perform door-to-door calls. Some consumers did not receive these communications, misunderstood them, or resisted them and drank tap water regardless; while a small number were later hospitalised complaining of gastrointestinal pain, the majority showed no reported symptoms – though possible long-term health effects were not captured.

The following day, the army distributed clean water at checkpoints throughout Godchester, though logistical issues sourcing water and heat-induced damage to the transport network delayed deliveries. Consumers were instructed to avoid contact with water and to dispose of any water within their pipes by running taps until dry; standard treatment methods at the connected wastewater treatment plants were assumed to be sufficient to destroy the contaminant and prevent environmental harm.

Mercia Water had been negotiating with competitors prior to the incident to ensure consistent water supply, but without resolution. During the crisis, the Ministry took over negotiations and ordered competitors to reroute some of their supplies to Godchester and other areas supplied by Mercia Water. This left consumers in other regions with limited water availability.

Mercia Water worked to develop solutions to treat the contaminated water, but the development of new tests and process for approval from the UK's water quality regulator took a week. Ongoing concerns about pesticide residues within the pipe network also led many residents to demand continued access to water checkpoints, which the government permitted for a further fortnight.

Other Impacting Factors:

The UK's infrastructure is not designed for, nor accustomed to, extreme heat. Heat-damaged roads and railways lead to traffic bottlenecks and delays for water deliveries and mobilisation. Failing transformers, servers, and data centres lead to communications challenges, which makes coordinating a rapid joined-up response difficult. Heat also places stresses on the human body and makes tasks such as decision-making and risk analysis more difficult. This may have contributed to the success of the phishing attack as well as suboptimal responses to the crisis.

When the crisis was declared, water-consuming services in public buildings were temporarily put on hold, though resumed a few hours later after receiving priority clean water deliveries. Nevertheless, for the town's hospital, this pause led to a cascade of delays and postponed or cancelled appointments, compounded by the high volume of patients being treated for heat-related illnesses.

The ongoing climate refugee crisis also divides resources. The government earmarked Godchester as a prime resettlement site, and the influx of refugees placed strains on the town's infrastructure and residents' comfort. In past elections the town consistently overwhelmingly voted for the current government, by a large enough margin that the government predicted that any loss of support due to these strains would not impact an overall constituency victory for their party. However, the poisoned water crisis threatened this

margin – influencing the government to take strong and rapid action to compensate, even at the cost of fewer resources for neighbouring regions.

After countless government bailouts, the political situation surrounding the water industry has been growing steadily more tense over decades. The present government has long-term plans to bring the water sector back into public hands for the first time since the late 1980s. However, this necessitates short-term costs, namely refusing water companies access to public funds, in order to build the case that the private sector is incapable of effectively managing the nation's water. This contributed to Mercia Water's lack of preparedness for the crisis.

**Names are fictional.*