

## Greenhill WSZ, Daer A WRZ Network discolouration May 2020

DWQR Inspector:  
Moirra Malcolm

Event No. 10994

### Event Category: Significant

A report of water rising in Greenhill water supply zone was investigated by leakage delivery and field customer response NSOs and determined to come from an open scour valve on an abandoned 15" main. They determined that the boundary valve between the 24" main and the abandoned 15" main may be partially open and supplying the disused main, and that it may have been operated in error recently, causing the leakage. In line with Scottish Water's procedures, the NSOs planned to isolate the valve to identify if this was the cause of the water rising. They turned the valve to isolate the abandoned pipe as per the GIS maps, however the operation resulted in an increase in water rising, so the valve was turned in the opposite direction to close it. Over the rest of that day 123 consumer contacts were made to Scottish Water reporting discolouration, with a further six follow-up contacts the next morning. Public health instigated a programme of flushing the network and sampling (at hydrants and standpipes due to Covid-19 restrictions) which resulted in failures for iron, manganese, aluminium, turbidity, *Clostridia* bacteria and hydrocarbons (benzo(a)pyrene and total PAHs).

The discolouration and sample failures were a result of the flow disturbance generated in the 24" main during the operation to isolate the disused 15" main. There was a 50% increase in flow which caused settled pipeline deposits and biofilm to dislodge from the internal surface of the pipe and enter the water and be flushed to consumers taps. The hydrocarbons were examined for their similarity to those found during the 2005 and 2015 Carfin incidents which occurred in the same zone and caused by hydrocarbon backsiphonage, but no similarity was found and so it is not suspected that these events are related. The hydrocarbon failures are likely to be from the sampling technique using standpipes which can strip any bitumen lining off the pipe. The disused main was not supplying any properties and the water pressure in the main was such that no backsiphonage into supply is suspected.

The event has been categorised as Significant. Scottish Water has identified five actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made no additional recommendations.