

Incident Summary

Redcraigs DSR Loss of supply and discolouration 29 October 2020

DWQR Inspector:
Bill Byers

Event No. 11230

Event Category: Significant

On 19 September 2020, a loss of supply to Redcraigs service reservoir occurred due to a burst on the inlet to the tank. This being a 450mm diameter pipe and the fact one half of the tank was out of service for cleaning, the attending network service operator immediately escalated the event to his team leader. A full incident team was then formed to respond to the situation. Excavation of the main revealed the burst had occurred on the Y branch which split the inlet flow to the two service reservoir cells. This is a specially cast fitting and a replacement would not be supplied quickly. An alteration was therefore made to the inlet main pipework arrangement to allow full flow to be supplied to the out of service cell only and allow it's reintroduction to supply. The cell had been filled and tested in the days leading up to the event and authorisation was obtained to return the cell to service, which was achieved at 3:30am the following day. An air lock in the inlet ball valve caused a further delay in restoring the full supply until engineers could attend and strip down the valve. With no incoming water and the distribution system drawn down, the stored water was quickly depleted. Further mitigation of supply difficulties was achieved by activating back feeds from adjacent supply zones in two locations and the continuation of use of a fleet of tankers to inject water at key points within the distribution system, which had commenced at 8:30am. The ball valve was repaired by 12:00 permitting the inlet flow to be restored to the service reservoir and the distribution system to gradually recover. Tankering continued through the night however, ceasing at 1:00pm on 21st September, by which time the zone back feeds had also been closed off. Over the course of the event, sampling of the supply was carried out within the affected areas to monitor water quality. A sample taken at Redcraigs service reservoir shortly after inlet flow was restored to the tank space, failed the standards for aluminium, iron and manganese. The re-sample and all other chemical and microbiological samples in the distribution system met the required water quality standards. The service reservoir supplies an extensive area containing some 90,000 consumers. The response made reduced the number of consumers affected by loss of supply, to just over 23,000. Many of those would experience discoloured water, motivating 41 to contact Scottish Water concerning their drinking water quality.

It is clear the burst water main on the inlet to the service reservoir was the cause of the incident. The consequential draining down of the live cell and the higher elevation elements of the distribution

system, their recharge and the subsequent flow fluctuations, caused discoloration of drinking water supplies to consumers in the Dunfermline and Dalgety Bay areas. Part of this however would be attributable to the recovery actions taken by Scottish Water to introduce back feeds from adjacent supply zones and from the direct injection of tanker loads of water into the distribution system.

The event has been categorised as Significant. Scottish Water has identified one action which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made three additional recommendations.

