

## Balmore Carron Valley WSZ Loss of Supply 03 September 2015

DWQR Inspector:  
Sue Petch

Event No. 7160

### Event Category: Serious

### Summary of Incident

At 05:12 on 3<sup>rd</sup> September 2015 the first of a significant number of 'no water' customer contacts were received by Scottish Water from the Cumbernauld area. A Network Service Operator (NSO) attended and identified a burst to a 30" diameter trunk main. The event was escalated and an Incident Command Team (ICT) formed to co-ordinate the repair and restoration of supplies. Access to effect isolation of the burst was complex as it had caused flooding of a nearby railway embankment and required liaison with Network Rail. Access to carry out the repair was further delayed by the need to partially demolish a concrete valve chamber to allow replacement of the burst length of pipe. To maintain supplies Scottish Water introduced three backfeeds into the system and supplemented this with tankering. There are 13,617 domestic properties and 946 non-domestic properties in this supply area which is made up of sixteen District Meter Areas (DMA's). Supplies were lost to 4938 properties in the area, which affected predominantly five of the DMA's, 1779 properties were intermittently supplied with water for up to 18 hours as the network recovered normal operating pressure. Two bottled water distribution sites were established and bottled water delivered to vulnerable customers.

Scottish Water began to repair the trunk main at 10:00 and this was completed by 19:15; recharging of the system continued until 02:30 the following day. When water was restored, sediment in the network was disturbed, resulting in 12 customer contacts regarding discolouration. Sampling was undertaken prior to and following restoration of supplies. Of the 59 samples taken between 3<sup>rd</sup> September and 11<sup>th</sup> September there were 32 recorded breaches of the regulatory standards for coliforms, *Clostridium perfringens*, turbidity, iron, aluminium and manganese which confirms that water in some DMA's during this period was not wholesome as defined in Regulation 4 of the Public Water Supplies (Scotland) Regulations 2014.

### DWQR Assessment of Cause of Incident

The root cause of the loss of supply was a 5 metre longitudinal crack in the trunk main. Subsequent investigations by Scottish Water have not shown any specific reason for the failure of the main. There had been no planned or unplanned activities in the network which could have caused disruption to flows and pressures in this main. Pressures in surrounding DMA's were reviewed and found to have been normal prior to the burst occurring. Scottish Water's inspection of the section of the main removed during the repair concluded that the main appeared to be in good condition internally and externally. The burst caused a depressurisation of the network, and this, in combination with the backfeed of supplies, tankering and restoration of supply caused disturbance of mains sediments, which had an impact on the wholesomeness of water supplies in this area.



## DWQR Assessment of Actions Taken by Scottish Water

Scottish Water responded promptly to the notification of loss of supplies and took appropriate steps to maintain and restore supplies. DWQR has noted a number of shortfalls in the incident response which relate predominantly to sampling:

1. A large number of samples were taken, as can be expected for an incident affecting a large population. DWQR considers that more samples should have been taken from those DMA's that had suffered a total loss of pressure and were therefore at greater water quality risk. For example only one sample was taken from Carbrain East which has 1484 properties.
2. Chlorine residual was not measured in the mains repair sample, this is in direct contravention of industry best practice as described in the Principles of Water Supply Hygiene Technical Guidance Note 3 – Repaired Mains and fails to meet Scottish Water's own DOMS procedures.
3. A number of samples taken from Seafar DMA failed the coliform standard. Scottish Water responded to these by flushing and carrying out localised chlorination. DWQR is critical of Scottish Water for failing to return to two properties to carry out further sampling to determine whether these actions restored water quality or whether the domestic distribution system was the problem. One property had 7 coliforms and a subsequent resample contained 68, but was not sampled again. The other property was sampled once and had a result of 36 coliforms without further resampling.

The event has been categorised as Serious. Scottish Water has identified a number of actions and DWQR accepts that these are appropriate. In addition, DWQR has made two recommendations following this incident and will be monitoring to ensure both these and the actions are completed prior to signing off the incident.

