

Muirdykes Supply Zone
Manganese Failure
24 June 2013

DWQR Inspector:
William Byers

Event Nos. 5397 & 5398

Event Category: Serious

Summary of Incident

A sample taken from a consumer's tap in Johnstone, Renfrewshire, on 24 June, failed the standard for manganese. Another, taken in Paisley on 26 June, also failed. Subsequent monitoring showed there to be a persisting issue within the supply zone and over a period of some 10 days, samples continued to fail the 50µg/l standard with the highest recording a level of 181µg/l Mn. Over the course of July, 270 consumer contacts were received from the area reporting discoloured water or other water quality issues.

Muirdykes Water Treatment Works (WTW) produces the water supply to this area and it is normally fed with raw water from Barcraigs and Camphill Reservoirs. The water main from Camphill had burst in mid-May and again at the beginning of June, necessitating the introduction of a supply from Rowbank reservoir on 17 June to compensate for the lost volume. Monitoring of raw water quality entering the works showed the level of manganese to be increasing and Rowbank reservoir was removed from supply on 24 June. Muirdykes WTW does not have adequate processes to fully remove manganese from the water with the result that the elevated levels in the raw water entering the works had caused discolouration in the supply zone. In all other respects, sample results show the final water supply as complying with Regulations.

DWQR Assessment of Cause of Incident

DWQR declared these events an incident due to the recurring nature of the failures and the level of consumer concern generated over water quality. DWQR is satisfied that the root cause of these events was the introduction of the raw water supply from Rowbank reservoir.

There is a known issue with the capability of the WTW to deal with manganese and Scottish Water has previously entered into an undertaking with DWQR to address the problems. This can be viewed on DWQR website <http://www.dwqr.org.uk/technical/undertakings.htm> It is recognised there is a fine balance to be taken between the use of Rowbank reservoir and allowing the level of Barcraigs reservoir to drop too far. Both of which can cause an increase in manganese entering the works.

DWQR Assessment of Actions Taken by Scottish Water

Scottish Water took appropriate action in responding to the elevated level of manganese entering the works and to the developing consumer concerns. The mitigation measures to minimise manganese in supply, set out in the Undertaking, are being met and a significant degree of cleansing of the distribution system has been carried out. A further cleansing programme commenced on 7 October in the areas worst affected by these events. DWQR has designated the events as serious.

