



Peter Brown
Regulation Manager
Scottish Water
Castle House
6 Castle Drive
Carnegie Campus
DUNFERMLINE
KY11 8GG

Your ref:
Our ref: B4520142
25 August 2011

Dear Peter

Information Letter 1/2011 The Augmentation of Drinking Water Supplies by Tanker

DWQR is aware that it is sometimes necessary for Scottish Water to augment water supplies, especially smaller supplies in remote rural locations and islands where direct feeds from neighbouring water supply zones are not available. DWQR believes that this activity introduces an additional risk to the quality of water supplied and Scottish Water is required to actively manage this risk and demonstrate that it has done so. This information letter highlights the main points that Scottish Water is required to address when transferring supplies by tanker. It does not aim to be exhaustive, and Scottish Water may wish to undertake its own assessment of how the risk from tankering water is managed.

Circumstances of Tankering

Tankering of water from one supply system to another should not be treated as a routine activity. Where it becomes necessary to undertake this activity on a regular basis, over a prolonged period, this should be taken as an indication that the receiving supply is inadequately sized to meet demand and Scottish Water should consider whether appropriate investment is required to upgrade the supply. It is vital that an accurate record of instances of tankering is provided to staff involved in investment planning so that the issue may be taken into account.

The supply from which water is to be taken (the donor supply) must be appropriate for that use. As far as possible, relevant water quality characteristics should match those of the receiving supply. Particular attention should be given to those parameters likely to be noticed by consumers, such as chlorine residual, colour and hardness. Where free chlorine and chloraminated supplies are mixed, risking taste and odour issues, staff should be aware of these risks and how they may be controlled, documenting them via the risk assessment. All tankering operations must be authorised by a senior member of Scottish Water's operational staff.

Staff Involved in Tankering Operations

All personnel involved in the collection and delivery of tankered water between supplies should have appropriate training both on the specific task and general water hygiene, as demonstrated by the possession of a valid National Water Hygiene Card (Blue Card). This should be the case whether the person is a member of Scottish Water operational staff or a contractor. Staff driving tankered water from/to a Scottish Water asset who are not directly involved in the transfer operation at either end and do not come into contact with treated water are not required to hold a hygiene card. Water shall not be collected from or delivered to a site without an appropriately trained person being present. Ideally this shall be a Scottish Water employee, however if this is not possible a contractor may be used provided they have received equivalent training and are sufficiently familiar with the sites concerned.

Equipment Used in Tankering Operations

It is Scottish Water's responsibility to ensure that all equipment used in tankering operations is appropriate for that use and complies with the relevant materials in contact with water requirements. Tankers should have been thoroughly cleaned and disinfected prior to use. Ideally such vehicles should be restricted to drinking water use. In exceptional circumstances tankers normally used for the transport of appropriate food-grade liquids may be used, but these should be subject to additional cleaning, disinfection and flushing. Particular care should be taken to avoid taints and odours. A passing microbiological sample should be obtained from each tanker prior to use for any delivery operation. Where the tanker has been in continuous use between two sites a microbiological sample is only required on first use, provided chlorine residuals measured at collection and delivery do not give any cause for concern.

All equipment used in the tankering process, such as hoses, couplings and hydrants must, as a minimum, have WRAS approval and be kept specifically for drinking water use. They must be clean, in good condition and have been disinfected prior to use. Care must be taken with storage of these items, ensuring they remain clean during transit and in particular that they cannot come into contact with any hydrocarbons such as fuel, or other chemicals.

All equipment used in the tankering operation must be traceable and its usage recorded.

Operational Practice During Tankering

Extreme care must be taken to avoid contamination at every stage of the process. All risks should be considered, along with measures to mitigate against these, and these should be recorded via a written impact assessment.

An appropriate connection should be used to connect the tanker to both filling and discharging points, probably using a disinfected hydrant and appropriate couplings. Thought must be given to the effects of removing a large volume of water from the donor service reservoir (SR) – care must be taken to avoid starving the system, causing vortexing and air entrainment or disturbing any sediment in the reservoir or associated distribution mains. Similar care must be taken on discharging. Filling and discharge points should be selected with these issues in mind.

Tankering operations should take place as rapidly as possible, to avoid the potential for a deterioration in quality due to water remaining in the tanker for excessive periods.

If, in exceptional circumstances, a tanker is used via a semi-permanent connection to create additional storage for a system, a full written risk assessment must be undertaken. The risk assessment, and the requirement for the tanker, must be reviewed on a monthly basis. A sample programme must be created to satisfy the requirements of Regulation 6 of the Water Supply (Water Quality)(Scotland) Regulations 2001. The requirements of the regulation shall be considered a

minimum and the sample programme should also address any risks highlighted in the risk assessment. This aspect could be the subject of future inspection by DWQR.

Quality Monitoring of Tankered Water

It is vital that the quality of water is monitored during a water transfer operation in order to protect consumers by verifying that the water used in the transfer has remained wholesome and to provide a record of quality at each stage should any issues subsequently come to light.

Water quality checks must be made and recorded at the following stages and locations for each tanker– load of water transferred:

WQ check / sample	Location	Stage in Process	Purpose
Free Chlorine Total Chlorine	Outlet tap of donor SR	Prior to filling tanker	To verify that donor SR water was wholesome and provide reference chlorine residuals
Free Chlorine Total Chlorine	Outlet of tanker	Immediately prior to discharge into receiving tanker	To verify water remains wholesome in tanker and to check for excessive reduction in chlorine residual
Free Chlorine Total Chlorine Visual appearance (on site) Taste (on site) Odour (on site)	Outlet tap of receiving SR (or other appropriate point downstream)	Once tanker is discharged, allowing for mixing time	To verify that water supplied to consumers is wholesome and acceptable to consumers

Should a significant reduction in chlorine residual occur in the water in the tanker during transit, the water shall not be discharged into the receiving water supply system. It is for Scottish Water to determine what constitutes significant, however this shall be documented in procedures and guidance provided to staff.

Procedures and Records

Scottish Water shall keep a record of all tankering operations of the nature described in this information letter. This record shall include, as a minimum:

- name of donor SR;
- name of receiving reservoir;
- reason for tankering;
- last clean & disinfection of tanker;
- results of microbiological sample taken from tanker upon first use;
- date and time of filling tanker;
- date and time of discharging tanker;
- results of all tests as specified above;
- name of senior Scottish Water staff member authorising transfer.

The requirements of this information letter shall be incorporated into Scottish Water’s operational procedures.

Any queries arising from this Information Letter should be directed to the Operations Team, DWQR. Copies of this letter will be sent to the Water Industry Commission for Scotland and the Drinking Water Inspectorates in England and Wales and Northern Ireland.

Yours sincerely

PO Box 23598
Edinburgh
EH6 6WW



M. Bower.

MATTHEW BOWER
Operations Team Leader
Drinking Water Quality Regulator for Scotland

PO Box 23598
Edinburgh
EH6 6WW

