



PRIVATE WATER SUPPLIES – CASE STUDY 2013/10

Managing the risk to private supplies from chemical spills

This case study relates to a spillage of approximately 60,000 litres of liquid fertilizer from two storage tanks on a farm in a rural location. The tanks contained a mixture of urea, ammonium nitrate and sulphur, and the spillage is thought to have arisen as consequence of vandals opening tank valves.

The local authority was informed about the spillage by the EA on the same day that it came to their attention. The local authority was able to identify that there were eight private water supplies, all served by boreholes, within 2km of the spill. One served a milking parlour and the others were domestic supplies, four serving single dwellings and the other three were shared domestic supplies (classed as Regulation 10 supplies). At the time of the spillage the local authority had no quality information about any of these supplies and the Regulation 10 supplies had not been risk assessed.

In response, the local authority collaborated with the EA and the local PHE to assess the risk posed to the private supply consumers. The likelihood of the fertiliser reaching the groundwater and the borehole abstraction points could not be determined from the available information, therefore samples were taken from the three supplies closest to the spill location. While this monitoring was undertaken letters were hand delivered to consumers on all eight supplies to notify them of the situation and to advise them not to drink the water, as a precautionary measure.

The samples were found to be free from ammonium (<0.02mg/l) and all but one exhibited nitrate at levels below the standard of 50mg/l. The higher value of 58.2mg/l was not thought to be attributable to the fertiliser spill. A further set of samples were taken for nitrate and ammonium a week later. During these sampling visits the Inspectorate's Information Note on Nitrates was provided to all consumers, with a cover letter from the local authority. This second set of samples gave similar results to those found previously; ammonium was not detected and the nitrate levels were satisfactory in all cases except for the sample from the property that previously failed, where a similar value of 57.4mg/l was obtained. These observations were reassuring when considered in the context of other information provided after two weeks by a specialist acting on behalf of the farmer's insurance company. This investigation had identified that the spillage site comprised mainly of clay and this would have prevented the fertiliser from soaking straight down through the soil. In addition, soil samples had shown no evidence of fertiliser at a depth of one meter. Based on these findings the warning notice to the consumers was lifted.



About one month later, the specialist reported that the results of the ongoing investigations were showing low nitrate levels in all further soil samples. They concluded that the farmer's immediate action of removing the top layer of soil at the earliest possible opportunity had been significant and beneficial in its effect. This was supported by high nitrate results in the soil which had been removed.

This case study illustrates the importance of prompt and effective communication by the EA to the local authority of an environmental event with the potential to impact adversely on the quality of private supplies. This enabled a public health risk assessment to be carried out, leading to an agreed collaborative action plan and a prompt decision to warn consumers about the short-term steps they needed to take to safeguard themselves.

One objective of the new private supply regulations was to ensure that an accurate up-to-date record of the location and nature of private supplies is available to support the public health function of local authorities. A learning point from this case study is the way it highlights the value of the geographic information (such as grid references) that forms part of the information the Inspectorate requires local authorities to include in their records and annual returns. In this instance, the local authority used historical maps to establish the locations of private water supplies in proximity to the spill area.

The Inspectorate advises all local authorities to develop and keep up to date private supply maps, if a readily accessible mapping facility is not an integral part of the system containing the private supply records. If needs be, local authorities may contact the Inspectorate for assistance with mapping. When providing grid references in annual returns to the Inspectorate, local authorities should be aware that one purpose of this information is to develop the capacity of the Inspectorate to provide bespoke combined public and private supply maps to assist with risk management of serious emergencies and incidents requiring a multi-agency response (see case study below on the wider public health benefits of the regulations).

