

Water UK position paper on groundwater protection for unconventional oil and gas extraction

Summary

Water UK's members are committed to delivering high quality drinking water that meets standards set within the Drinking Water Directive and providing wholesome water at all times. Delivering these objectives includes ensuring good quality source waters - groundwater or surface waters.

Water UK considers that a risk-based approach should be taken to the protection of groundwater resources whereby risks are identified and assessed, and then appropriate, measured actions taken to mitigate the impacts on the environment and public health. This approach enables protection measures to be developed in the most sensitive areas whilst still allowing carefully managed industrial practices to take place safely.

Background

Groundwater is critical to the drinking water supply in large parts of the UK and both aquifers and abstraction sources used for drinking water purposes need to be protected from contamination. In England, the EA has designated some 2000 sites as needing groundwater protection¹ and established source protection zones (SPZs) in these areas as part of their GP3 policy, Groundwater Protection: Principles and Practice. This provides a framework to protect water supplies from developments that could affect quality and quantity.

The establishment of different source protection zones (based on groundwater travel times) allows the EA to take a risk-based approach to assessing whether to permit any activity which may have impacts on groundwater. The highest levels of protection need to be given to those abstraction sources and source protection zones where there is the highest risk of impacts on drinking water quality. The permissibility of activity within zones will depend on the activity itself and also on local factors. To this end the EA need to have flexibility to decide what activity can take place in which zones. There will inevitably be a need to assess any applications for permits on a case-by-case basis.

¹<http://apps.environment-agency.gov.uk/wiyby/37833.aspx>

Considerations specific to unconventional oil and gas

With reference to the exploration for and extraction of unconventional oil and gas, the established EA policy is that activity would not be permitted in SPZ1 (the highest risk zones most proximal to a groundwater abstraction point) and that careful consideration would be given to planning applications in SPZ2 and SPZ3. It is unclear whether vertical wells drilled outside a particular SPZ would be permitted to extend horizontally under higher vulnerability SPZs.

The total area of an SPZ3 can be substantial and therefore a moratorium on hydraulic fracturing inside these zones could preclude large areas of land from exploration, although the activity itself is not necessarily adding any significant risk to groundwater resources. It would be appropriate to consider this on a case-by-case basis, accounting for vertical separation between the aquifer and the target hydrocarbon source rock as well as the geological integrity of the intervening strata. This exercise could be completed as part of the EA's determination of the permit.

The conditions established in the Infrastructure Act 2015² do not clearly express what the government's expectations would be for the scope of groundwater protection in addition to that protection that already exists. The condition as laid could be prohibitive to shale gas activity. This contrary to the established risk-based approach. Further clarity on this is expected during the development of secondary legislation.

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²<http://services.parliament.uk/bills/2014-15/infrastructure.html>