

Water Protection Zones Environment Agency

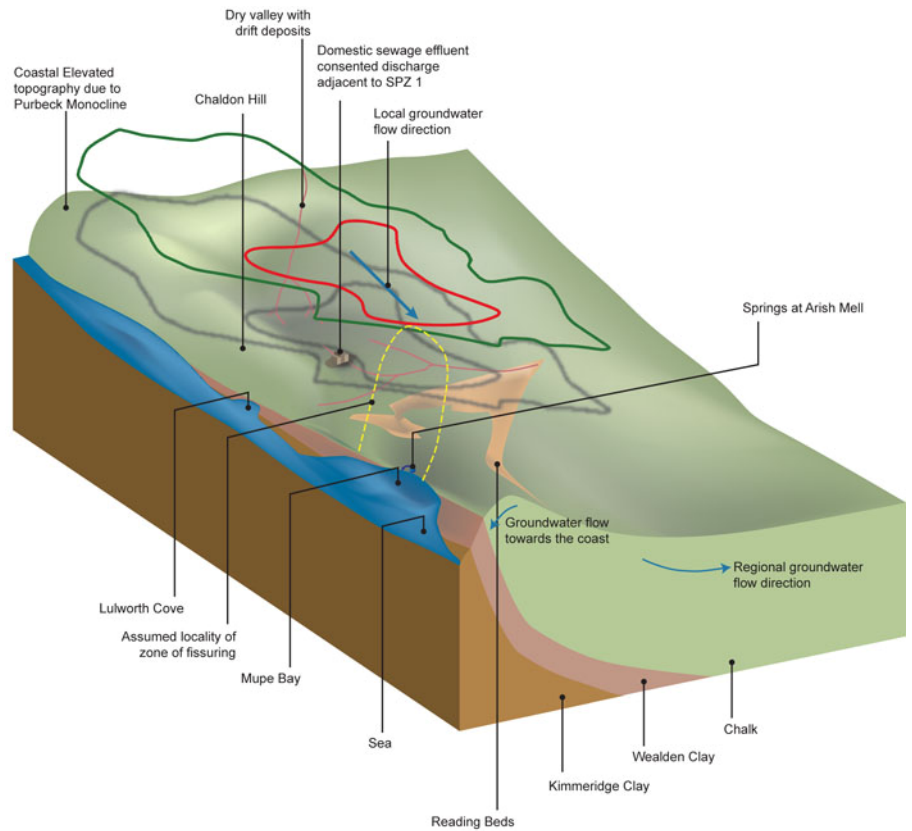
Prioritising public water supplies for specific protection measures, based on a conceptual understanding of catchment water quality issues

Benefits of Entec's Approach

- Strong relationships with water companies helped achieve their sign-up to the project.
- Good working relationship with Environment Agency project board helped bring together the final design of the reports.
- Knowledge of available data sources broadened the information base for the conceptual model development.
- Prior knowledge of the issues faced by some of the water companies helped in reporting on the conceptual understanding of each catchment.
- Strong groundwater modelling experience at both regional and catchment scales helped in providing information for specific sites as well as helping in development of conceptual understanding.
- Flexibility in design of reports and graphics provided a final product with an immediate visual impact.

The Environment Agency (Agency) is required to protect the quality of raw surface and groundwater that is abstracted for human consumption under Article 7 of the Water Framework Directive (WFD). To do this they need to aim to prevent any deterioration in water quality and so avoid the need for additional water treatment. The Environment Agency has set a target to stabilise the proportion of groundwater sources requiring treatment at 50% of water abstracted - the current level.

To help in meeting the Article 7 objective the Agency proposes to designate



Water Protection Zones (WPZs) around selected abstractions. In these zones specific additional statutory measures would be put in place to reduce pollution to an acceptable level. Entec has provided support in prioritising groundwater public water supplies that may be put forward for consideration as designation as WPZs.

The Agency provided Entec with a prioritised list of 16 top sites of groundwater abstraction sources that have, or are at risk of, failing to meet WFD objectives. Quality issues included rising nitrate, spikes in pesticides and bacteriological contamination at public water supply abstractions from major aquifers. Entec produced dossiers of information collated from the respective water company, Agency and Defra sources, on each of the 16 top sites. Each dossier included a short report on the conceptual understanding of the water quality issue and identified the current groundwater protection measures in place

(e.g. NVZ). The end product provided clear and concise text and figure based description of the conceptual understanding of the top 16 catchments, including a 3D representation of our understanding of the catchment water quality issues.

The completed work will be used by the Agency to support the process of identifying candidate groundwater water protection zones. The site characterisation brought together the current understanding of catchment water quality issues into one document with a holistic approach. The documents will be a future reference for the protection of abstracted groundwater.

