
Geochemistry

Geochemistry is the study of the chemistry of geological materials. It is an important tool in investigating the detailed composition of geological materials, as well as facilitating interpretations of the processes which have formed, and continue to influence, these materials. A range of analytical techniques in isotope geochemistry provides a diversity of methods for dating geological materials. Studies of regional geochemistry are important in mineral exploration and offer important means of investigating the distribution and dispersal of chemical elements in the environment.

Geochemistry in the AONB

Significant research on the geochemistry of minerals and mineral assemblages from the ore deposits of the North Pennine Orefield have greatly advanced understanding of their nature and origins, including the framing of important hypotheses on the origins of similar deposits worldwide. Particularly significant has been work on fluid inclusions and concentrations of rare earth elements.

The distribution of a large range of chemical elements in stream sediments and stream water across the AONB is depicted in two Geochemical atlases, published by the British Geological Survey. These provide a wealth of information on natural as well as anthropogenic concentrations of these elements, and can be used to interpret patterns of dispersion, including contamination, across the area.

Selected references

British Geological Survey, 1992; British Geological Survey, 1996

[Full references](#)