**Groundwater & Environment**

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When there is a release from a Coal Combustion Product (CCP) landfill or impoundment to groundwater, the resulting plume can be distinguished by its water quality signature. The signature for CCPs can be characterized by boron concentrations and major ion chemistry. Certain isotopic signatures can also be used when chemical signatures do not provide sufficient lines of evidence to determine whether observed concentrations are due to a release. This presentation will provide a high-level overview of the following topics:

* Water quality signatures for CCP’s
* Techniques to evaluate chemical signatures
* Isotopic analyses that can be useful at CCP sites

A case example will be presented to illustrate application of these concepts at a 960-acre CCP impoundment currently undergoing closure.