



# COAL COMBUSTION RESIDUE MANAGEMENT IN ILLINOIS

**Long before the TVA ash pond failure in 2008 in Tennessee, the Illinois EPA** recognized that coal combustion residue, often referred to as coal ash, might be an environmental concern. The Illinois EPA has taken a proactive approach in regulating coal ash. Since the early 1990s, new ash ponds (surface impoundments) have been required to be lined and groundwater monitoring wells have been installed at many of these new ash impoundments.

The Illinois EPA agrees with the U.S. EPA current proposal to regulate coal combustion residue in landfills and surface impoundments. Their "Subtitle D option" proposal is very similar to what we are already doing in Illinois. At this point, it is unclear if U.S. EPA groundwater standards are as stringent as Illinois non-degradation requirements.

There are 24 power plants in Illinois with a total of 83 impoundments and one permitted landfill where the coal ash is being disposed. There are also older ash ponds at many of these facilities. Starting two years ago Illinois EPA initiated an aggressive strategy to assess the geologic vulnerability of groundwater at the 24 power plants considering the presence of potable wells identified near the plants to determine the potential contamination threat to those wells. For many years, Illinois EPA has required the installation of groundwater monitoring well systems and hydrogeologic assessments at these facilities. Further, where groundwater contamination has been found we have required that cleanup/remediation be implemented. For detailed information on Illinois EPA's Ash Impoundment Strategy, dated August 4, 2010, go to:  
<http://www.epa.state.il.us/water/groundwater/publications/ash-impoundment-progress.pdf>

## **What is coal ash?**

Basically, anything that remains after coal is burned such as fly ash, bottom ash, slag, etc.

## **Is all coal the same?**

No. Coal is a rock formed from the remains of ancient plant life. It is not a uniform substance and can contain a wide variety of minerals depending on the nature of its vegetation source and how it was affected over time by temperature and pressure. For example, much of the coal mined in Illinois has high sulfur content, while "western coal" has a lower heat value (Btu).

## **Is all coal ash the same?**

No. Coal ash can vary depending on the source of the coal, the processing of the coal, the burning of the coal and the method of the collection of the ash. The coal ash collected as bottom ash (clinker, boiler slag, etc.) is different from the coal ash collected as fly ash from the smoke stack and the air pollution controls. Groundwater contaminants found in the monitoring wells installed adjacent to surface impoundments in Illinois show non-hazardous contaminants such as boron, total dissolved solids, and sulfates. Cadmium, a hazardous contaminant, has been detected in only one surface impoundment.



### **How is coal ash managed in Illinois?**

Power plants can determine how to manage their coal ash, but it all must meet the applicable Illinois regulations. The options include: on-site disposal cell (dry); off-site disposal cell (dry); disposal in surface coal mines (dry); disposal in underground coal mines (wet or dry); disposal in special waste landfills (dry); and beneficial reuse.

### **Is there any beneficial reuse of coal ash?**

Fly and bottom ash have been used in the manufacture of cement, concrete blocks, wallboard, snow and ice control, aggregate in cement, soil stabilization and as a sub-layer in road construction. Coal residue that can be used is identified as a coal combustion byproduct or a coal combustion product and must meet specific standards. It is estimated that up to 40 percent of coal combustion residue goes to beneficial reuse nationally.

### **How is coal ash regulated by Illinois EPA?**

Each Illinois EPA Bureau has a set of regulations covering coal ash:

**Bureau of Air:** Some coal ash is captured through air emissions equipment. As technology improves, air pollution laws continue to become stricter in limiting what can be released into the air.

**Bureau of Water:** State construction and operating permits issued in conjunction with National Pollution Discharge Elimination System permits require surface impoundments to be in compliance with the Illinois groundwater and surface water quality standards including non-degradation requirements. Permit conditions require low permeable liners and groundwater monitoring. Older impoundments over important aquifers were required to install a groundwater monitoring system and to submit compliance reports to the Illinois EPA.

**Bureau of Land:** Coal combustion residue can be disposed in special waste landfills with a proper permit. Again, permit conditions require low permeable liners and groundwater monitoring. Older impoundments over important aquifers were required to install a groundwater monitoring system and to submit compliance reports to the Illinois EPA.

### **Does any other State Agency Regulate Coal Ash?**

The Illinois Department of Natural Resources Office of Mines and Minerals would have a role in coal combustion residue if a permitted mine or permit applicant plans onsite disposal or if there are plans to use ash as part of a reclamation project.

### **Does the Illinois EPA support the USEPA initiative for stricter controls on coal ash?**

The Agency welcomes all initiatives that will support our mission to better protect the citizens and environment in Illinois. The USEPA proposal for coal combustion residues in surface impoundments at coal fired electric generating plants is very similar to Illinois EPA's existing approach.