



Coal Ash at A.B. Brown and Public Health

Executive Summary

Coal ash is the by-product that is left over after coal is burned. More than 100 million tons are generated in the U.S. each year. Coal ash is stored in open-air pits and surface waste ponds, many of which lack adequate safeguards, leaving nearby communities at risk from potential large-scale disasters. Coal ash contains arsenic, lead, mercury, selenium, cadmium, and chromium. If there is prolonged exposure, these toxic substances can cause cancer, heart damage, lung disease, kidney disease, reproductive problems, gastrointestinal illness, impaired bone growth in children, and neurological disorders.

Vectren Corporation has a coal-burning power plant called A.B. Brown in Posey County, Indiana, near the border with Vanderburgh County and a half mile from the Ohio River. A.B. Brown makes 284,000 tons of coal ash each year. For comparison, the average American produces 4.4 pounds per day of trash plus recycled or composted waste. That means it would take the entire city of Evansville, IN, (population 120,300) nearly 3 years to make as much waste as A.B. Brown produces in one year.

Of the coal ash produced at A.B. Brown, 27% gets used in cement, 59% is stored in a landfill and the rest goes into unlined ash ponds. The two ponds were created by building an earthen dam across an existing ravine next to the plant in 1978, and then 24 years later building a second dam further upstream in the ravine. Water is used to rinse the ash into the ponds. The ponds' combined surface area is 156 acres, and at their deepest point the ash/water mix is 5 to 6 stories high (62 feet). As of October of 2016, the two ponds held a total of 6.8 million cubic yards of mixed water and ash. That's enough to fill 2,080 olympic-sized swimming pools.

Brown's landfill contains another 6.8 million cubic yards of coal combustion waste, but in a dry form. As of October, 2015, 61% of the landfill was covered with soil and vegetation, and approximately half of that also had an impermeable cover called geomembrane in addition to soil. In the active area, 18% of the landfill lacked any cover. The landfill permit requires cover annually. Vectren uses other methods, as necessary, to control fugitive dust.

Coal ash can be a threat to humans through contamination of water or inhalation of airborne dust or, if a dam bursts, through a spill of the ash and water mixture.

Impact on ground water:

There is already ground water contamination by coal ash at the A.B. Brown dry landfill. Vectren has been required to monitor it for more than 20 years and take corrective action.

Ground water contamination is also likely from the ponds, though it has not been tested. A hydrogeologist evaluated the data on A.B. Brown's ash along with data on the local geology and concluded that contaminants from Brown's coal ash ponds are likely moving into the ground water in several directions. People using wells within a mile of the ash ponds or landfill for drinking or cooking should have their water tested for metals, sodium and sulfate.

Impact on the Ohio River:

A.B. Brown has a permit to discharge wastewater to the Ohio River. Their discharge report from August, 2015, showed that Brown was releasing 2.88 million gallons per day with an arsenic concentration slightly above the US drinking water standard. The discharge also carries selenium and dissolved solids which are harmful to aquatic life.

Airborne Dust:

Dry coal combustion waste at A.B. Brown could produce fugitive dust either where it is being loaded onto barges or from the dry waste landfill. Neighbors have described occasional incidents of wind-blown, gray ash covering their yards and homes. Inhalation of fine particles in the dust can irritate the lungs, worsen lung diseases including asthma, and increase the risk of cardiovascular disease. As of fall 2015, Vectren has a fugitive dust control plan in place at A.B. Brown. If there are future incidents of fugitive dust, they should be reported to

- Indiana Department of Environmental Management Office of Air Quality at (317) 233-5674 and ask for the appropriate county inspector
- or the IDEM complaint line at (800) 451-6027 ext.24464
- or by email to CCR_inquiries@vectren.com

Spill risk:

Both dams at AB Brown were rated 'significant hazard' by the EPA, meaning if the dam failed, there would not be loss of life, but it could cause significant economic and environmental damage. As to whether the dams could fail, the EPA rated the upper dam in 'satisfactory' structural condition. The lower dam was rated in 'fair' condition, meaning acceptable performance is expected, but minor deficiencies may require repair or further investigation. In February of 2016, Vectren published plans to disassemble parts of the upper dam and strengthen the lower dam.

The A.B. Brown compliance reports including the fugitive dust plan and inspection reports are available at:

[https://www.vectren.com/Community/Environmental Stewardship/CCR Rule Compliance Data and Information.jsp](https://www.vectren.com/Community/Environmental%20Stewardship/CCR%20Rule%20Compliance%20Data%20and%20Information.jsp)

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