# Coal Ash Pond Heavy Metal Removal at Decommissioned Electric Utility Plant

## BACKGROUND

A Mid-Atlantic fossil fuel electric generation plant completed the demolition of the coal burning facility over a multiple year process. The decommissioning of the coal ash retention pond is one of the final phases.

Coal ash is the waste product generated when coal is burned for energy. This waste contains harmful heavy metals, including arsenic, mercury, hexavalent chromium, nickel, lead, cadmium, and selenium. Even low-level exposure is linked to cancer, respiratory problems, neurological difficulties, and gastrointestinal disease.

Coal ash is a challenge for many power plants. Coal ash disposal sites are almost always located near rivers, creeks, and streams because coal-fired power plants require large quantities of water, and operators typically dispose of coal ash on-site. Many of these coal ash waste sites are not lined or capped (to prevent leaching of heavy metals) because they predate both modern state and federal solid waste disposal safeguards.

AqueoUS Vets® (AV®) worked with its partner on this Design-Bid-Build project developed for the treatment of metals-bearing water from the remediation of a coal ash pond at 4.8MM GPD.  A second phase of the program is set to be installed in early 2025.

## AV PROJECT SCOPE

AV's treatment system included three (3) 12-foot diameter vessel systems using activated alumina. Each system is comprised of two (2) 125 PSI ASME code adsorbers with interconnecting manifold and piping. Systems are designed for operations in parallel and/or series (lead/lag) configurations with dedicated backwash supply and return lines as part of the four-tier manifold.

AV continues to grow its existing and new customer base in the Mid-Atlantic region with drinking water and remediation projects. AV is staffed and equipped to support east coast customers with the recent addition of the Jacksonville, Florida, vessel manufacturing facility.

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## PROJECT DETAILS

| ITEM DESCRIPTION | UNIT | VALUE |
|---|---|---|
| Number of Systems/Vessels per System | - | 3 / 2 |
| Operating Configuration | - | Parallel/Lead-Lag |
| Media Type | - | Activated Alumina |
| Media Capacity (Volume per Vessel) | $ft^3$ | 1005 |
| Design Flow Rate (Overall /per Vessel) | gpm | 1,500 / 500 |
| Empty Bed Contact Time (per Vessel/per System) | Minutes | 10 / 20 |
| Underdrain | - | External Ring Header |

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