GWTT was tasked with providing a water treatment system to assist the client in reducing the contact surface and pore water of several coal ash ponds at one of their power generating sites. The ash pond water contained elevated levels of metals (specifically arsenic and selenium) and TSS.

Prior to the construction of the treatment system, GWTT began the process design as a concept and proposed bench-scale treatability testing to determine the best available technology to meet the client's effluent discharge permit limits. GWTT provided two independent treatability studies to determine the best available technology and treatment plant unit processes that would be required to meet the effluent parameters. Based on the two treatability studies performed and GWTT’s experience with complex water containing dissolved arsenic and selenium, a full-scale treatment plant was designed and constructed using unit operations verified in the bench-scale testing.

The treatment plant is capable of reducing dissolved metals and TSS through a number of physical and chemical processes and, has the ability to be modular in nature and robust in its treatment capacity. The system is currently configured at 1,500 GPM and can be scaled up or down as the project requires.

### Key Project Details:
- Performed on-site treatability studies for both the contact surface and pore water
- Identified the best available technology to treat for arsenic, selenium, and other soluble metals
- Designed, supplied, installed and commissioned a modular treatment plant
- Treatment system included all equipment: clarifiers, chemical feed tanks, enhanced metals filtration, pumps, filtration, controls, and alarms
- Currently providing ongoing 24/7 O&M services
- The system was mobilized and treating water in three weeks

### Project Challenges:
- Limited site space required on-site optimization and continuous improvement of system layout to realize operational efficiencies during equipment changeouts and consumables replenishment
- Ongoing weather and environmental conditions necessitated changes to designed system operator ingress/egress and control access points to maintain high safety standards
- Project duration was changed from short-term to long-term, which required an overall system hardening, including the addition of a semi-permanent tent enclosure

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**CCR Ash Pond Water Treatment Project Narrative**

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