



In the Stream

Brandon Shores Generating Station

FGD Wastewater Treatment

Brandon Shores Generating Station is an electric generating station located Maryland, near Glen Burnie, and is operated by Raven Power Holdings, Inc. Brandon Shores consists of two Babcock & Wilcox coal-fired boilers and two General Electric steam turbines with a combined nominal generating capacity of 1370 MW.

Optimized Treatment for LSFO Scrubber Effluent

Flue Gas Desulfurization (FGD) effluent from a Limestone Forced Oxidation (LSFO) scrubber system typically originates from the overflow of secondary hydrocyclones in the gypsum dewatering process. This effluent is directed to the equalization tank as the first step in the wastewater treatment system.

The FGD wastewater treatment system is an advanced physical-chemical process specifically engineered to de-saturate the effluent, precipitate heavy metals, and reduce suspended solids through a series of controlled reactions including flocculation, clarification, and dewatering.

Following treatment, contaminants are concentrated and removed as a solid cake, suitable for final landfill disposal. The clarified and treated effluent is discharged to a receiving water body, or optionally polished through a media filter to further reduce suspended solids prior to discharge.

The heart of this system is a specially designed ClearStream Solids Contact Clarifier. Due to the large quantity and heavy weight of the suspended solids, it was necessary to employ a lift for the solid contact clarifier mechanism. This lift allows the entire rake structure to be raised out of the sludge level during periods of excessive torque produced by the solids loading.



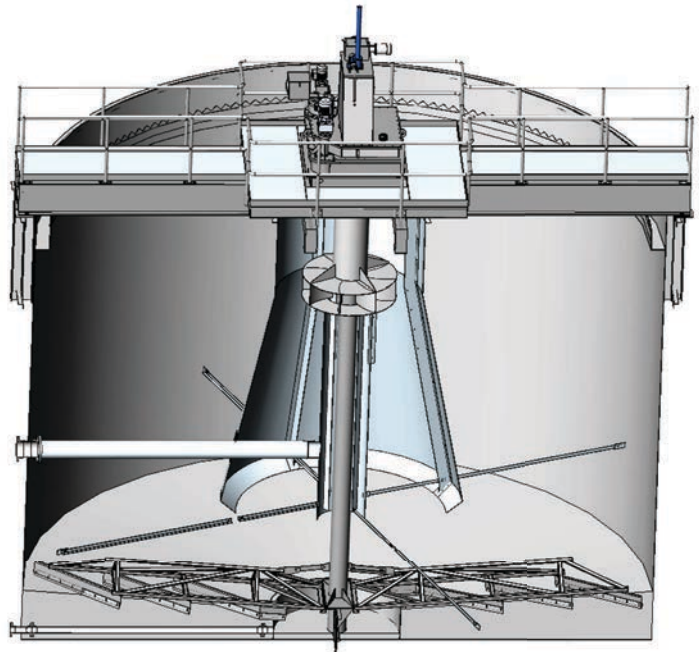
Dual Shaft Drive with Lift



Brandon Shores FGD Wastewater Treatment Plant

ClearStream manufactures a heavy duty, precision bearing dual drive with a lift mechanism. This drive design has a shaft within a shaft to rotate the impeller independent of the rake drive. The lift design allows the rakes to be raised without affecting either the speed or the height of the impeller.

Further, the Solids Contact design provides internal recycle of the previously Settled solids. This recirculation promotes complete chemical reactions and enhances the flocculation of solids producing a denser sludge and greater solids capture.



ClearStream Solids Contact Clarifier

**CLEARSTREAM OFFERS A COMPLETE LINE OF WATER AND WASTEWATER
TREATMENT EQUIPMENT FOR MUNICIPAL,
INDUSTRIAL, POWER, AND MINING APPLICATIONS.**

Headworks

Grit Detritors

Sedimentation Equipment

Segmented Rake, Plow Style

Spiral Blade Design

Suction Header Clarifiers

Suction Pipe Clarifiers

Solids Contact Clarifiers

RapidStream™ - High-rate Solids Contact
Clarifier/Thickeners

Rim Drive Clarifiers

Thickeners

DAF Units

Circular

Rectangular

CPI Type Oil/Water Separators

Rectangular

Packaged

API Type Oil/Water Separators

Rectangular

Circular

Walnut Shell Filters

Standard

Custom

Anaerobic Digester Covers

Buoyant Truss Steel Covers

Gasholder Truss Steel Covers

Radial Beam Fixed Steel Covers

Radial Beam Gasholder Steel Covers

Dual Membrane Gasholder Covers
(Tank Mount-

Biological Process Equipment

ClearFlo™ Jet Aeration Systems

ClearFlo™ Bullseye Oxidation Channel™

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ClearFlo™ Continuous Loop Reactors

ClearFlo™ Process Optimization/Retrofits

Trickling Filters

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