



COKE CUTTING WATER

The key benefit of delayed coking is full conversion of heavy residual oils, such as vacuum resid, to lighter products. This allows refiners to increase profit margins by processing lower-cost, heavier crude slates. Light products from the delayed coker are further treated in other process units to produce transportation fuels, such as gasoline and diesel.

Benefits of an optimized filtration solution:

- Increasing the life of the high-pressure jet pumps, piping, cutting tool and water piping system
- Reduces the risk of unscheduled downtimes
- Improves the efficiency of the coke cutting water process

The Delayed Coking process introduces heat to the hydrocarbon stream prior to feeding the coke drums. The lighter hydrocarbons vaporize and exit the top of the coke drum, while heavier components form solid coke, which is deposited in the drums. This petroleum coke is considered a byproduct and has uses in the electric power and industrial sectors as fuel inputs or as manufacturing raw material used to produce electrodes for the steel and aluminum industries.

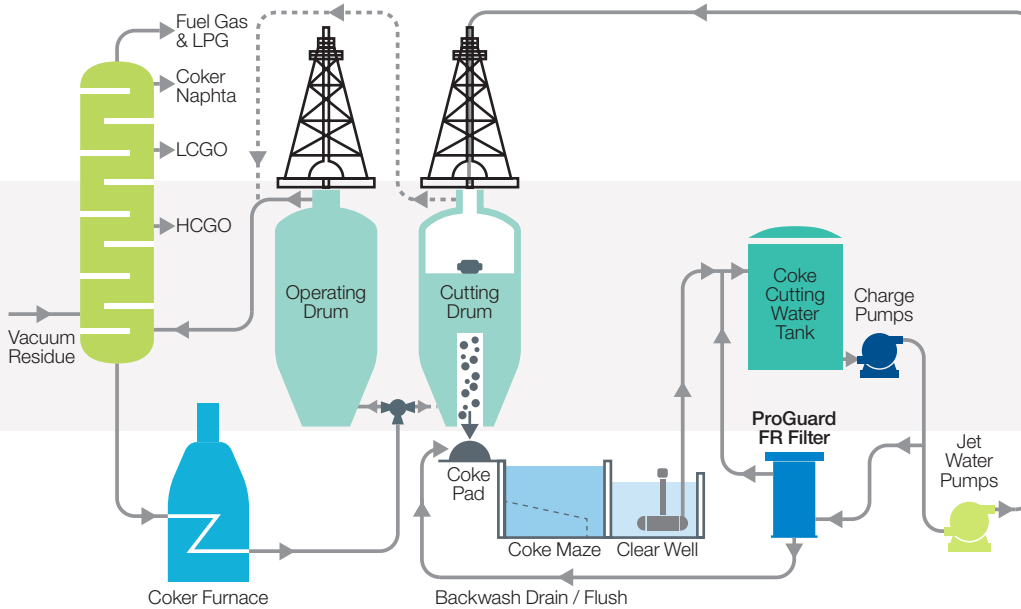
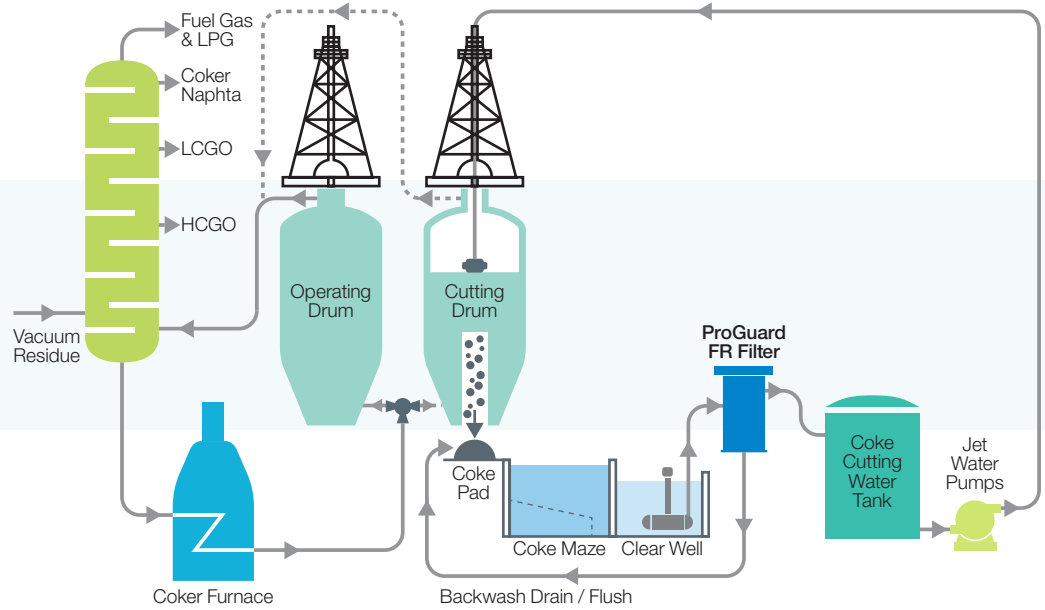
The coke deposition in the drums is cleaned out using a high pressure water jet. This process is coke cutting. To effectively reuse this coke cutting water, the water must be recaptured, and entrained coke fines need to be removed. Some of the heavier particulates settle but the fine particles continue in the recirculation loop, scouring the high-pressure pumps and piping. Eventually, the damage will require maintenance and downtime, possibly unplanned.

Many refineries currently accept the high maintenance on jet pumps and piping as inevitable. High solids contaminants makes this a challenging application however, proper filtration can reduce the maintenance needs as well as extend the life of the jet pump components.

Coke Cutting Water Flow Chart

OPTION 1 - ONCE THROUGH FILTRATION

A once through filtration system with direct feed from the Clear Well sump pump.



OPTION 2 TANK CLARIFYING

A kidney loop side-stream filtration with feed from the booster pump downstream of the Coke Cutting Water Tank. Requirements: 60 - 200 psig operating pressure.

Advantages of the coke cutting water ProGuard filtration solution:

- Continuous operation with automatic self-cleaning
- Lower maintenance system
- No additional infrastructure required to clean the water for reuse
- Low backflush rates, optimal cleaning of filter element
- Wedge wire filter element for maximum durability
- Housings operate in parallel configuration

Filter Solution

01 ProGuard FR

Filter Purpose

Remove the solid contaminants from water

Filter Benefit

Protects the jet pumps and other equipment downstream of the pump

