

# QuenchFlow™

*An Integrated Quench Water Treatment System  
for Ethane Cracker Plants*



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## Veolia Water Technologies has developed QuenchFlow™, a unique, effective and economical integrated treatment system to clean the contaminated quench water generated from ethylene production operations.

This modular system is a closed-circuit solution that treats the quench water for reuse and recycles the waste streams. The modular design enables quick, easy installation with prefabricated modules that are factory assembled and tested prior to shipment. The result is a shorter project schedule, reduced cost, and minimization of risks associated with on-site activities.

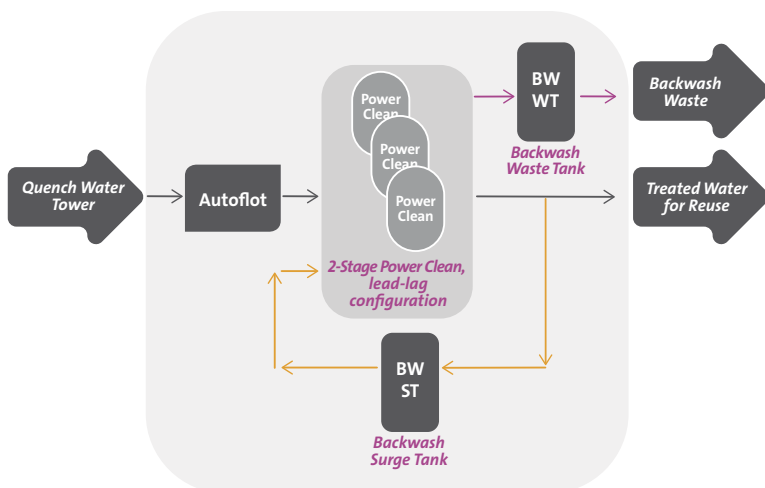
### Technology Description

QuenchFlow™ incorporates proven Veolia technologies, including Veolia's Autoflot™ induced gas flotation (IGF) and Power Clean® nutshell filters (NSF), in a fully integrated modular system. The contaminated quench water is chemically treated upstream of the Autoflot using an inline dosing system provided by Veolia. It then enters the Autoflot where gas is induced at the bottom of the unit via eductors. The gas bubbles float free oil and suspended solids to the gas/liquid section of the unit, where it forms a froth that is skimmed and removed.

Autoflot effluent then passes through a 2-stage nutshell filtration process. Three Power Clean nutshell filters are provided to operate in a lead-lag configuration with the third in cleaning/standby mode. The walnut shell media retains more oil than other media types and requires no chemicals or gas scour for media cleaning. The Power Clean uses a patented fluidized cleaning process that effectively strips solids and oil from the media with very little backwash water and no surfactants. Feed water or filtered water can be used for backwashing, after which it is recycled to the system inlet.

The treated water is then sent to the dilution steam generator for reuse, creating a closed circuit loop. The full system, including IGF, NSFs, backwash tanks and controls, is mounted on modular platforms for easy installation.

#### Typical QuenchFlow™ Battery Limit



### Application

Ethylene is produced from cracking different feed stock (i.e., ethane, naphtha, etc.) at high temperatures. In steam cracking technology, cracked gas is cooled at the Quench Tower (QT). The QT further separates the gas from liquids.

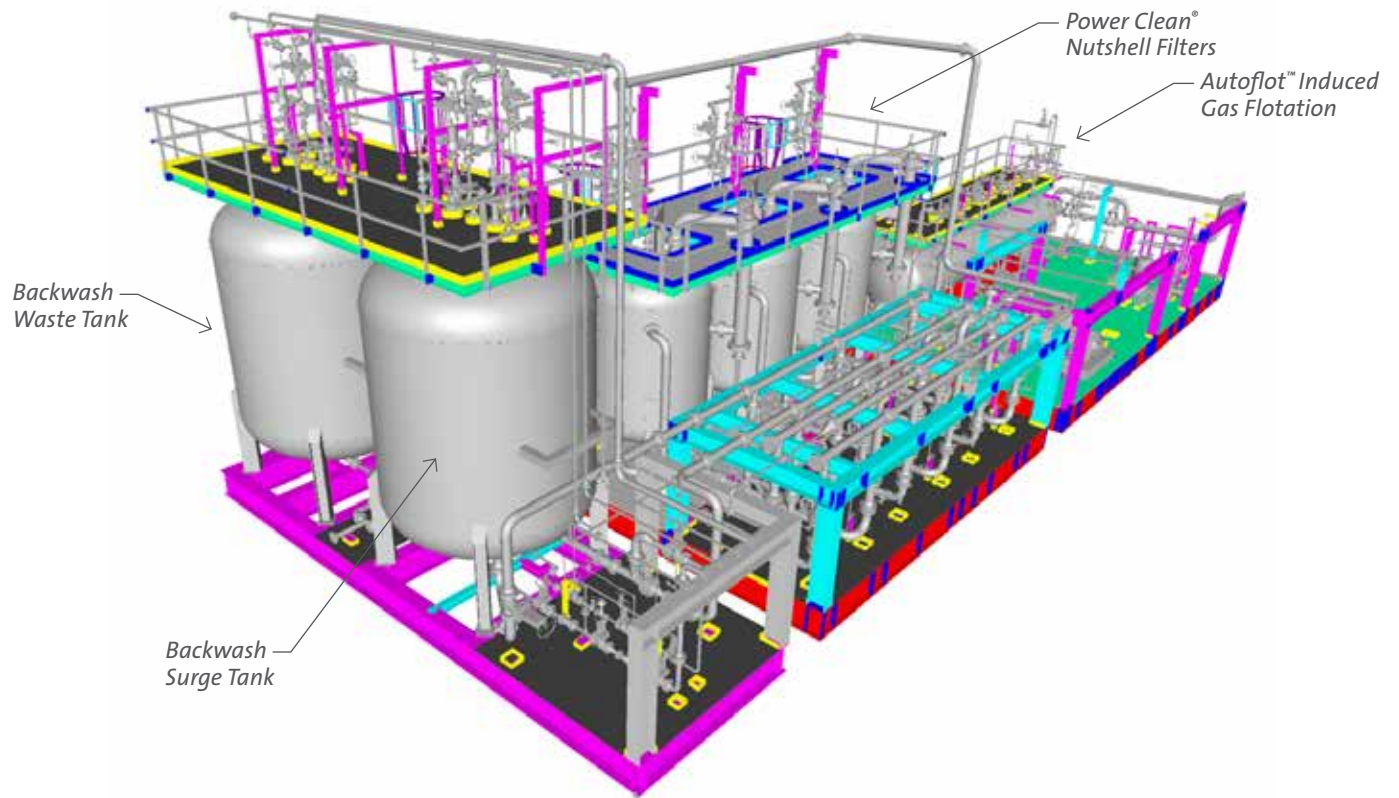
The gas product is H<sub>2</sub> plus light hydrocarbons, with ethylene being the major component. The QT effluent is water contaminated with coke fines and hydrocarbons comprised of more than five carbon atoms. Using QuenchFlow, the contaminated quench water is cleaned and then sent back to the dilution steam generator for reuse.



## Proven, Reliable Technology

The key process components of QuenchFlow have been proven to provide effective removal of oil and suspended solids in numerous Oil & Gas applications around the world. The packaging of these technologies into a unique, integrated modular system ensures reliable system performance.

3D Drawing of QuenchFlow™



*QuenchFlow™ is the technology of choice at ethane cracker plants in the United States, Canada, and China.*

Resourcing the world

**Veolia Water Technologies**

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