



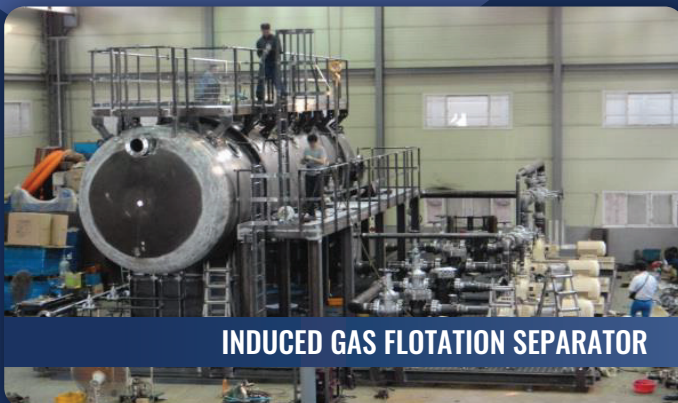
# PRODUCED WATER TREATMENT

## CONTAMINANT REMOVAL FROM PRODUCED WATER

**Produced water is the largest volume by-product or waste stream generated during oil and gas exploration and production.**

As oil and gas are brought to the surface, produced water accompanies them. This water contains chemical properties from both the formation it originated from and the associated hydrocarbons.

A produced water treatment package is utilized to separate and divide this water from the oil or gas. Effective management of this large volume of water is crucial for oil and gas producers, as it significantly impacts cost management.



**INDUCED GAS FLOTATION SEPARATOR**



**DAF**

## PRODUCED WATER TREATMENT METHODS

### ADVANCED SEPARATORS

Including inclined plate and corrugated plate. Provide enhanced oil capture compared to basic oil/water separators impacts cost management.

### HYDROCYCLONE

Hydrocyclone offer the benefit of no moving parts and effectively and reliably separates free oil.

### FILTRATION

Filtration via different types of filter media, offering oil and grease removal.

### CENTRIFUGE

Centrifuge provides good separation of free and dispersed oil.

### COALESCENCE

Coalescence gathers small oil droplets and combines them into larger droplets, making them easier to remove using other technologies.

### FLOTATION

Flotation effectively removes free and dispersed oil.

## TECHNOLOGIES OVERVIEW



### CPI (CORRUGATED PLATE INTERCEPTOR) OIL-WATER SEPARATOR

CPI is the most widely used oil-water separator, utilizing the specific gravity difference method to separate oil and sludge from oily wastewater. It employs multiple slate or corrugated plates, or enhanced oil separation plates, which are installed either slanted at a 45~60° angle. This design directs the flow from the upper portion to the lower portion, increasing the effective horizontal surface area of the separator without enlarging the separator basin.



### DGF (DISSOLVED GAG FLOTATION)

DGF is a water treatment technique used to clarify wastewater by removing suspended matter such as oil or solids. This process involves saturating treated water with gas in a pressurized vessel and then releasing it at atmospheric pressure in a flotation tank or basin. The released gas forms tiny bubbles that attach to the suspended matter, causing it to float to the surface, where it can be removed by a skimming device.



### IGF (INDUCED GAS FLOTATION)

A water treatment process that clarifies wastewater (or other waters) by removing suspended matter such as oil or solids. This removal is accomplished by injecting gas bubbles into the water or wastewater in a flotation tank or basin or a mechanical type that employs a motor-driven rotor (impeller) to draw gas from the vapor phase at the top of the vessel directly into the water phase.



### WALNUT SHELL FILTER

The Walnut Shell Filter effectively removes free oil and suspended solids from produced water, refinery wastewater and any water source. It is highly efficient in treating suspended solids, oily residues, ash and metallic hydroxides from industrial liquids generated by petrochemical and other industries. Walnut shell media are resistant to heavy oil surges and experience significantly less fouling compared to other media.



WALNUT SHELL FILTER



CORRUGATED PLATE INTERCEPTOR