

## APPLICATION NOTE

# Enhancing Separation

## EWS Enhances Conventional Separation Methods

OriginClear's proprietary Electro Water Separation™ (EWS) technology can be combined into pre-existing conventional gravity separation systems, for improved oil-water separation.

OriginClear's Single Step Extraction (SSE) reactor tubes, the first stage of the EWS Petro process, can easily be incorporated ahead of, or in, a slip-stream design with any conventional gravity based separation process. Oil-water separation and system capacity of existing systems can be improved by performing in-line emulsion breaking and/or micro-bubble flotation, depending on the influent type.

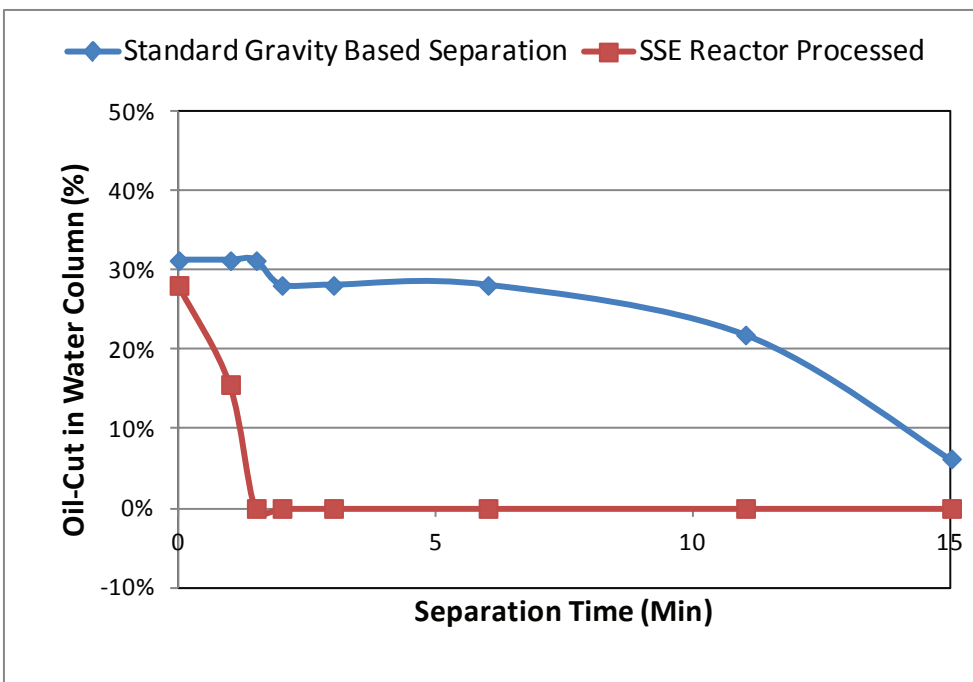
In the data shown below, OriginClear's SSE reactors were operated to provide an in-situ coagulation and flotation for the water column within a gun barrel containing a 70% water cut emulsion. Processing of the emulsion increased the rate of oil separation from 277 mg/sec for standard gravity based separation alone, up to 3,125 mg/sec, when combined with SSE tubes.

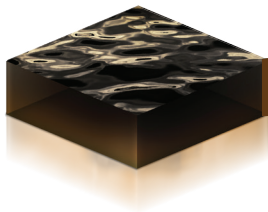


Oil cut samples from water column in conventional gravity based separator.



Oil cut samples from water column after combining with SSE processing.





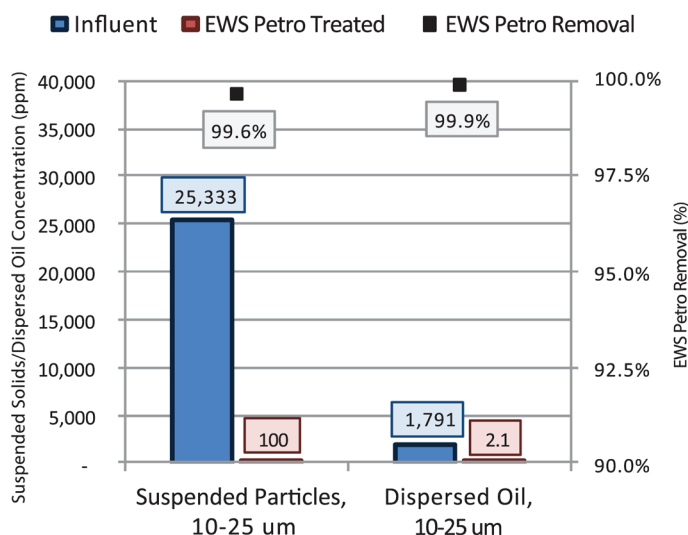
A 1000 barrel per day SSE Reactor skid and control system can be self contained within a 24 ft2 (2.23 m2) foot print and installed and integrated to existing systems onsite.

## Removal of Suspended Solids and Dispersed Oil

EWS Petro technology removes suspended solids & dispersed oil fraction, while providing bacterial disinfection for advanced downstream polishing in third party testing.

*The tests evidence a 99.9% reduction in dispersed oil and a 99.5% reduction in suspended solids. They show a dramatic decrease in oil and suspended particles.*

The testing presented here quantifies the separation of hard to remove suspended solids and the dispersed Oil & Grease fraction, both of which interact negatively with frac fluid & proppant and increase the risk of damaging reservoir and fluid integrity.



Ben Spaulding, Lab Manager, Fluid Imaging Technologies:

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Breakthrough water cleanup technology