

WILSA™ EWC Enhances Recovery in West Texas Flowback

WILSA's technology improves efficiency of existing separation equipment, maximizing oil production and delivering cleaner water for potential reuse

Date: Jul - Aug 2014

Industry: Oil & Gas Production

Application: Frac Flowback

Success Factors:

- Increased oil recovery
- Less oil in disposed water
- Simple flowback process improvement
- Ease of installation into existing piping system

WILSA™ EWC Results:

- Increased efficiency of 4-phase separator to >99.9%
- Lowered oil content in water discharged from separators from >10,000 ppm (1%) to an average of 25.4 ppm



An operator in West Texas was processing frac flowback having 12% to 28% oil content through an undersized 4-phase knockout unit.

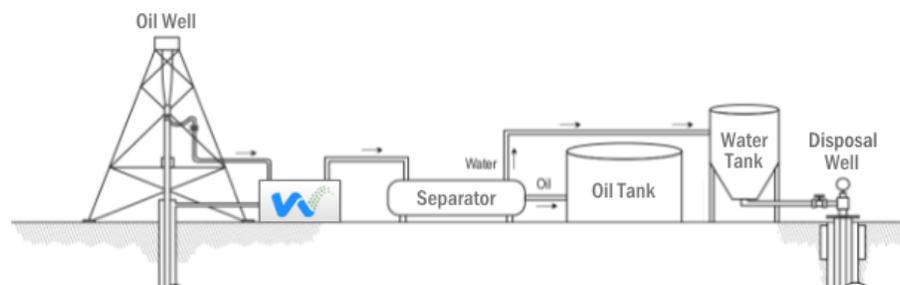
Water discharged from the separator had an oil content ranging from 1.5% to 3.6%. A solution was required to improve oil/water separation and reduce the amount of OIW (oil in water) transported to disposal wells.

A WILSA™ EWC G4 was installed upstream of the 4-phase separator, processing on average 30 bbls/hour. Although flow rates fluctuated, the

retention time of flowback fluid flowing through the separator was limited to only ~10 minutes.

No chemicals were injected into the fluid upstream of the separator. Flowback water separated by the knockout unit was directed to water collection frac tanks.

After the in-line installation of the EWC upstream of the separator, more oil was recovered from the flowback fluid and cleaner water was discharged to the water collection frac tanks for disposal.



1. CHALLENGE

An operator processing frac flowback at highly variable flow conditions was discharging 1-3% oil in their water for disposal

2. SOLUTION

WILSA's EWC G4 was installed upstream of the undersized 4-phase separator to improve its efficiency in oil/water separation

3. OUTCOME

WILSA conditioning of flowback led to a significant increase in process efficiency, resulting in improved oil recovery and cleaner water



4. VALUE

WILSA conditioning of flowback fluid allowed for greater recovery of product, and cleaner water being discharged from the separator. A summary of the data gathered is displayed in the table below.

	Oil in Flowback	OIW Discharged from Separator (Initially)	OIW Discharged from Separator (with WILSA™ EWC)	Improved Separator Efficiency
Well 1*	23.5%	1-3%	1.5 ppm	>99.9%
Well 2*	8.9%	1-3%	69.1 ppm	>99.9%
Well 3*	12.8%	1-3%	5.6 ppm	>99.9%
Well 4**	~20%	4.7%	12 ppm	>99.9%

* Samples collected and analyzed independently by operator

** Samples collected independently by operator, analyzed by XENCO Laboratories

WILSA™ EWC G4

The WILSA™ ElectroWave Conditioner (EWC) G4 accelerates phase separation. By altering the interfacial tension of fluids, it weakens intermolecular binding forces to disrupt oil/water emulsions.

APPLICATIONS

- Improved oil/water separation at variable flow conditions
- Enhanced settling of suspended solids

For more information, please contact:

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SPECIFICATIONS (WILSA™ EWC G4)

Skid Size	90"L x 30"W x 96"H
Total Weight	3,780 lbs
Pipe Size	2" - 4" SCH 80 (ASME/ANSI B36.10)
Pipe Length	8 ft
Pipe Connections	2" - 4" End fittings as required*
Electrical Connections	115 VAC (30 amps)
Enclosure	Class I, Div1 & Class I, Div2

*End fittings available with Victaulic, hammer union, flange or specified fittings

