Total Life Cycle of Hydraulic Fracturing Fluids.

MESSER Gases for Life

Simple calculator tool.

Water-based fluid		Total barrels
# of stages		
barrels/stage		
Incremental water		bbl
Acquisition		method (source, recycle, reclaim...)
		$/bbl water
		$/ton CO_2
Management		
		months, flowback
		% flowback (over same months)
		days/month
		# storage tanks
		$/day/storage tank
		hrs setup/tank
		hrs monthly maintenance/tank
		$/hr labor for maintenance & setup
Disposal		
		method (source, recycle, reclaim...)
		$/bbl
CO_2 foam quality		
	0	# of stages
		foam volume improvement factor*
	-	barrels of foam
	-	barrels of water for foam
	5.41	CO_2 bbls/ton
	-	CO_2 tons

Input Calculated, can change value manually

Feed, can change value manually

*Use "Quality vs. Leak-off Values" for estimates. Barrels of foam estimated adjustment based upon leak-off, fluid clean up, embedment...(if targeting equal fracture volume).

Fracturing fluid cost comparison

				Incremental water	CO_2
	Unit	# Units	Unit costs	Total costs	Total costs
Acquisition					
Water - purchase	bbl	-	$	$	
CO_2 - purchase	ton	-	$		$
Management (post-frac) storage at wellhead					
Incremental tanks (24)	mths	-	$	$	NA
Set-up / tank	hrs	-	$	$	NA
Labor monthly	hrs	-	$	$	NA
Disposal					
Injection wells	bbl	-	$	$	
Total				$	$
Delta cost of water to CO_2				$	
Cost/bbl equivalent				Water	CO_2
Acquisition, management & disposal				$	$

"While initial CO_2 or N_2 acquisition costs may exceed water costs, in well-designed fracturing processes energized solutions can reduce other costs and improve well performance to yield a lower total operating cost or unit cost of production."

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