

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/20/2013
Job End Date:	11/20/2013
State:	Kansas
County:	Haskell
API Number:	15-081-22034-00-00
Operator Name:	Occidental Oil and Gas
Well Name and Number:	BCU 412
Longitude:	-100.96296217
Latitude:	37.65152478
Datum:	NAD27
Federal/Tribal Well:	YES
True Vertical Depth:	5,269
Total Base Water Volume (gal):	9,114
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	OXY	Frac Water					
			H2O	N/A	100.00000	99.20540	N/A
Plexsurf 210E	Chemplex	Flowback Aid					
			Methyl Alcohol	67-56-1	30.00000	0.02784	N/A
			Alcohol Alkoxylate	N/A	20.00000	0.01856	N/A
			Ethyleneglycol Monobutyl Ether	111-76-2	5.00000	0.00464	N/A
DF 100	DFT	Water Foaming Agent					
			Isopropyl Alcohol	67-63-0	5.00000	0.01550	N/A
			Methyl Alcohol	67-56-1	5.00000	0.01550	N/A
			Ethyleneglycol Monobutyl Ether	111-76-2	5.00000	0.01550	N/A
Plexbor 101	Chemplex	Oil Field Crosslinker					
			Potassium Metaborate	13709-94-9	30.00000	0.02983	N/A
			Ethylene Glycol	107-21-1	10.00000	0.00994	N/A
			Potassium Hydroxide	1310-58-3	5.00000	0.00497	N/A
Plexbreak 134	Chemplex	Non Emulsifier					
			Isopropyl Alcohol	67-63-0	20.00000	0.01959	N/A
Ammonium Persulfate	Chemplex	Breaker					
			Ammonium Persulfate	7727-54-0	98.00000	0.01409	N/A
Plexgel Breaker HT	Chemplex	Encapsulated Breaker					

			Ammonium Persulfate	7727-54-0	90.00000	0.00823	N/A
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Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)