

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/22/2016
Job End Date:	6/22/2016
State:	Texas
County:	Crockett
API Number:	42-105-42255-00-00
Operator Name:	Warren American Oil Company
Well Name and Number:	University of Texas 245 #6
Latitude:	30.99021100
Longitude:	-101.35980800
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	2,343
Total Base Water Volume (gal):	46,222
Total Base Non Water Volume:	4,010



## 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	Operator	Base Carrier Fluid	Water	7732-18-5	100.00000	82.29858	
Sand	Multiple Suppliers	Proppants	Silicon Dioxide	14808-60-7	100.00000	16.86913	
SG-15G	ACE Completions	Gelling Agents	Petroleum Distillate	64742-47-8	60.00000	0.26570	
			Guar Gum	9000-30-0	50.00000	0.22141	
			Bentonite Clay	14808-60-7	10.00000	0.04428	Ace Completions 1301 W. 1st St. Odessa, Tx 79763 Jeff Louis 713-703-2172
			Surfactant	68439-51-0	10.00000	0.04428	CAS # Proprietary
CS-15	ACE Completions	Clay Control / Stabilizers	Choline	67-48-1	100.00000	0.08453	Ace Completions 1301 W. 1st St. Odessa, Tx 79763 Jeff Louis 713-703-2172
			Water	7732-18-5	100.00000	0.08453	% is Proprietary
			Magnesium Chloride	7791-18-6	100.00000	0.08453	% Proprietary
XL-335	PIP	Crosslinkers	Glycerol	56-81-5	45.00000	0.04741	

			Sodium Metaborate	7775-19-1	40.00000	0.04214	
			Water	7732-18-5	15.00000	0.01580	PIP Mo Hossain 14227 Fern Houston, Tx 77079 281-589-0047
GB-150	Chemplex	Gel Breakers/Delayed Breakers					
			Water	7732-18-5	90.00000	0.08285	
			Sodium Chloride	7647-14-5	15.00000	0.01381	
			Ethylene Glycol	107-21-1	5.00000	0.00460	
			Mannanase Enzymes	37288-54-3	1.00000	0.00092	
NE-227	ACE Completions	Non and De-Emulsifiers					
			Proprietary	Proprietary	25.00000	0.02203	ACE Completions Jeff Loius 1301 W. 1st Odessa, Tx 79763 1-713-703-2172
B-15	Brenntag	Iron Controller / Reducers					
			Water	7732-18-5	80.00000	0.01553	
			Tetrakis (hydroxymethyl) phosphonium sulfate	55566-30-8	20.00000	0.00388	

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)