

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/25/2015
Job End Date:	5/12/2015
State:	Texas
County:	Andrews
API Number:	42-003-46381-00-00
Operator Name:	ConocoPhillips Company/Burlington Resources
Well Name and Number:	University Andrews 3002
Longitude:	-102.73698800
Latitude:	32.15676400
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,811
Total Base Water Volume (gal):	6,528,842
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
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.							
A286, B080, B386†, F112, H036, J218, J318, J580, J610, J618, L058, M298L, M298L-R, M300, U042, S100, S012-4070, S333-3050	Schlumberger	Acid Corrosion Inhibitor, Activator, Scale Inhibitor B386, Surfactant, Acid, Breaker, Breaker Aid, Gelling Agent, Crosslinker, Friction Reducer, Ir					
			Water (Including Mix Water Supplied by Client)*	NA		93.30368	
			Quartz, Crystalline silica	14808-60-7	92.50085	6.19416	
			Hydrochloric acid	7647-01-0	3.44599	0.23075	
			Guar gum	9000-30-0	1.36784	0.09159	
			Glutaraldehyde	111-30-8	0.54666	0.03661	
			Phenolic resin	9003-35-4	0.46265	0.03098	
			Organo phosphorus salt	Proprietary	0.34740	0.02326	TEST - Trade Secret Texas Comment
			Potassium borate	1332-77-0	0.26583	0.01780	
			Sodium chloride	7647-14-5	0.17848	0.01195	
			Hexamethylenetetramine	100-97-0	0.13205	0.00884	
			Polyethylene glycol monohexyl ether	31726-34-8	0.12464	0.00835	

		Propan-2-ol	67-63-0	0.12317	0.00825
		Potassium hydroxide	1310-58-3	0.09824	0.00658
		Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.08934	0.00598
		Glycerol	56-81-5	0.08669	0.00580
		Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.05489	0.00368
		Diammonium peroxodisulphate	7727-54-0	0.05063	0.00339
		Distillates (petroleum), hydrotreated light	64742-47-8	0.04949	0.00331
		Tetrasodium ethylenediaminetetraacetate	64-02-8	0.04263	0.00285
		Tetrakis(hydroxymethyl) phosphonium sulfate	55566-30-8	0.03113	0.00208
		Sodium erythorbate	6381-77-7	0.02202	0.00147
		2,2',2"-nitrioltriethanol	102-71-6	0.01650	0.00111
		Fatty acid, tall-oil reaction products with acetophenone	68188-40-9	0.00988	0.00066
		Alcohols, C12-C16, ethoxylated	68551-12-2	0.00824	0.00055
		Methanesulfonic acid, hydroxy-, monosodium salt	870-72-4	0.00764	0.00051
		Sodium hydrogensulphite	7631-90-5	0.00764	0.00051
		Isodecanol w/6-7 Moles Ethylene Oxide	26183-52-8	0.00554	0.00037
		Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00519	0.00035
		Alcohol, C11-14, ethoxylated	78330-21-9	0.00513	0.00034
		Alcohols, C9-11-iso-, C10-rich	68526-85-2	0.00515	0.00034
		Sorbitan, (Z)-9-octadecenoate (2:3)	8007-43-0	0.00391	0.00026
		Cinnamaldehyde	104-55-2	0.00362	0.00024
		Non-crystalline silica (impurity)	7631-86-9	0.00343	0.00023
		Sodium Glycolate (impurity)	2836-32-0	0.00345	0.00023
		Sorbitan monooleate, ethoxylated	9005-65-6	0.00226	0.00015
		Sodium hydroxide	1310-73-2	0.00115	0.00008
		Trisodium Ethylenediaminetetraacetate (impurity)	150-38-9	0.00115	0.00008
		Disodium Ethylene Diamine Tetra Acetate (impurity)	139-33-3	0.00115	0.00008
		Amines, tallow alkyl, ethoxylated	61791-26-2	0.00106	0.00007
		Methanol (impurity)	67-56-1	0.00076	0.00005
		Trisodium nitrilotriacetate (impurity)	5064-31-3	0.00058	0.00004
		Dodecyl poly(oxyethylene) ether	9002-92-0	0.00045	0.00003
		Glycols, polyethylene, monotetradecyl ether	27306-79-2	0.00032	0.00002
		Acetic acid	64-19-7		
		Acetic acid, potassium salt	127-08-2	0.00001	

\* 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)