

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/29/2017
Job End Date:	8/28/2017
State:	Texas
County:	Loving
API Number:	42-301-33170-00-00
Operator Name:	Shell Oil Company affiliate
Well Name and Number:	University 19 PW Unit 1503H
Latitude:	31.67005970
Longitude:	-103.42841583
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	10,949
Total Base Water Volume (gal):	8,573,362
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	Shell	Carrier/Base Fluid	Water	7732-18-5	100.00000	80.31352	None
100 Mesh	Keane	Proppant	Crystalline Silica (quartz)	14808-60-7	100.00000	19.31282	None
15% HCL Acid	Keane	Acid	Hydrochloric Acid	7647-01-0	100.00000	0.24436	None
Flojet DR 42	SNF	Friction Reducer	Poly(oxy-1, 2-ethanediyl), a-tridecyl-w-hydroxy, branched	69011-36-5	30.00000	0.01983	None
			Distillantes, Petroleum, Hydrotreated Light	64742-47-8	5.00000	0.00331	None
AIC100D	Nalco	Iron Control	Citric Acid	77-92-9	100.00000	0.01913	None
B-84	Xchem	Biocide	Glutaraldehyde	111-30-8	30.00000	0.00534	None
			n-Alkyl(C12-C16) dimethyl benzyl ammonium chloride	68424-85-1	10.00000	0.00178	None
			Didecyl dimethyl ammonium chloride	7173-51-5	10.00000	0.00178	None
			Ethanol	64-17-5	5.00000	0.00089	None

S-212	Rockwater	Gelling Agent					
			Distillates, Petroleum, Hydrotreated Light	64742-47-8	60.00000	0.00449	None
			Guar Gum	9000-30-0	45.00000	0.00337	None
Payzone 217 SI	Catalyst	Scale Inhibitor					
			Phosphorous Compound	Proprietary	10.00000	0.00181	None
FWB100D	Nalco	Live Breaker					
			Ammonium Persulphate	7727-54-0	100.00000	0.00025	None
X-Corr LT	Nalco	Corrosion Inhibitor					
			Isopropyl Alcohol	67-63-0	60.00000	0.00012	None
			Fatty Alcohol Ethoxylate	Proprietary	30.00000	0.00006	None
			Ethoxylated Alcohol	Proprietary	10.00000	0.00002	None
Product 6191	Nalco	Surfactant					
			Branched Alcohol Oxyalkylate	Proprietary	30.00000	0.00006	None
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.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Poly(oxy-1, 2-ethanediyl), a-tridecyl-w-hydroxy, branched	69011-36-5	30.00000	0.01983	
			Guar Gum	9000-30-0	45.00000	0.00337	
			Didecyl dimethyl ammonium chloride	7173-51-5	10.00000	0.00178	
			n-Alkyl(C12-C16) dimethyl benzyl ammonium chloride	68424-85-1	10.00000	0.00178	
			Ethanol	64-17-5	5.00000	0.00089	
			Fatty Alcohol Ethoxylate	Proprietary	30.00000	0.00006	
			Ethoxylated Alcohol	Proprietary	10.00000	0.00002	

* 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)