

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/25/2017
Job End Date:	12/8/2017
State:	Texas
County:	Loving
API Number:	42-301-33226-00-00
Operator Name:	Shell Oil Company affiliate
Well Name and Number:	University 19 D 0904H
Latitude:	31.69927130
Longitude:	-103.41844828
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,635
Total Base Water Volume (gal):	6,758,329
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	78.53887	None
100 Mesh	Preferred Sands	Proppant					
			Crystalline Silica (quartz)	14808-60-7	100.00000	21.24099	None
15% HCL Acid	FSTI	Acid					
			Hydrochloric Acid	7647-01-0	100.00000	0.10333	None
Flojet DR 42	SNF	Friction Reducer					
			Poly(oxy-1, 2-ethanediyl), a-tridecyl-w-hydroxy, branched	69011-36-5	30.00000	0.01988	None
			Distillantes, Petroleum, Hydrotreated Light	64742-47-8	5.00000	0.00331	None
B-84	Xchem	Biocide					
			Glutaraldehyde	111-30-8	30.00000	0.00508	None
			n-Alkyl(C12-C16) dimethyl benzyl ammonium chloride	68424-85-1	10.00000	0.00169	None
			Didecyl dimethyl ammonium chloride	7173-51-5	10.00000	0.00169	None
			Ethanol	64-17-5	5.00000	0.00085	None
PGS-212	Rockwater	Gelling Agent					

			Distillates, Petroleum, Hydrotreated Light	64742-47-8	60.00000	0.00486	None
			Guar Gum	9000-30-0	45.00000	0.00365	None
AIC100D	Nalco	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00809	None
Payzone 217 SI	Catalyst	Scale Inhibitor					
			Phosphorous Compound	Proprietary	10.00000	0.00169	None
FWB100D	Nalco	Live Breaker					
			Ammonium Persulphate	7727-54-0	100.00000	0.00030	None
X-Corr LT	Nalco	Corrosion Inhibitor					
			Isopropyl Alcohol	67-63-0	60.00000	0.00005	None
			Fatty Alcohol Ethoxylate	Proprietary	30.00000	0.00002	None
			Ethoxylated Alcohol	Proprietary	10.00000	0.00001	None
Product 6191	Nalco	Surfactant					
			Branched Alcohol Oxyalkylate	Proprietary	30.00000	0.00003	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	0.01988	
			Guar Gum	9000-30-0	45.00000	0.00365	
			n-Alkyl(C12-C16) dimethyl benzyl ammonium chloride	68424-85-1	10.00000	0.00169	
			Didecyl dimethyl ammonium chloride	7173-51-5	10.00000	0.00169	
			Ethanol	64-17-5	5.00000	0.00085	
			Fatty Alcohol Ethoxylate	Proprietary	30.00000	0.00002	
			Ethoxylated Alcohol	Proprietary	10.00000	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)