Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/4/2017
Job End Date:	8/2/2017
State:	Texas
County:	Crockett
API Number:	42-105-42367-00-00
Operator Name:	EP Energy
Well Name and Number:	University 38 Block Unit 3819KH
Latitude:	31.05957900
Longitude:	-101.08071800
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,848
Total Base Water Volume (gal):	18,241,138
Total Base Non Water Volume:	1,490,378

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	85.42366	
Sand	Multiple Suppliers	Proppants					
			Silicon Dioxide	14808-60-7	100.00000	11.90421	
15% Hydrochloric Acid	Reagent	Scale Dissolver					
			Water	7732-18-5	85.00000	2.10903	
			36% Hydrochloric Acid	7647-01-0	15.00000	0.37218	
CS-15	ACE Completions	Clay Control / Stabilizers					
			Magnesium Chloride	7791-18-6	100.00000	0.01834	% is Proprietary
			Choline Chloride	67-48-1	100.00000	0.01834	% is Proprietary
			Water	7732-18-5	100.00000	0.01834	% is Proprietary
MCS-376	Ace Completions	Surfactants					
			Water	7732-18-5	75.00000	0.03023	
			Proprietary	Proprietary	15.00000	0.00605	Proprietary Data
			Ethylene oxide/propylene Oxide co-polymer	9003-11-6	10.00000	0.00403	
			Coconut diethanolamide	68603-42-9	8.00000	0.00322	
			Alcohol	68609-68-7	5.00000	0.00202	

			Poly(oxy-01,2-ethanediyl), alpha hexyl-omega-hydroxy-	31726-34-8	5.00000	0.00202	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00202	
			Diethanolamine	111-42-2	1.00000	0.00040	
			Solvent Naptha(Petroleum), Heavy	64742-94-5	1.00000	0.00040	
NE-227	ACE Completions	Non and De-Emulsifiers					
			Water	7732-18-5	90.00000	0.03620	
			Proprietary	Proprietary	15.00000	0.00603	Proprietary Data
			Poly(oxy-1,2-ethanediyl), alpha hexyl-omega-hydroxy	31726-34-8	5.00000	0.00201	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00201	
			Alcohol	68609-68-7	5.00000	0.00201	
			Solvent Naptha(Petroleum), Heavy Aromatic	64742-94-5	1.00000	0.00040	
FR-900	SNF Inc.	Friction Reducers					
			Distallates(petroleum), hydrotreated light	64742-47-8	45.00000	0.03442	
			Alcohols, C12-15-branched and linear, ethoxylated propoxylated	120313-48-6	5.00000	0.00382	
FE-4	Finoric LLC	Iron Controller / Reducers					
			Water	7732-18-5	52.00000	0.00556	
			Citric Acid Annhydrous	77-92-9	52.00000	0.00556	
I-123	Finoric LLC	Acid Corrosion Inhibitors					
			Ethylene Glycol	107-21-1	40.00000	0.00195	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00098	
			Cinnamaldehyde	104-55-2	10.00000	0.00049	
			Ethoxylated Nonylphenol	68412-54-4	10.00000	0.00049	
			1-Decanol	112-30-1	10.00000	0.00049	
			Tar based, quinoline derived, benzyl chloride-quaternized	72480-70-7	10.00000	0.00049	
			2-Butoxyethanol	111-76-2	10.00000	0.00049	
			Triethyl Phosphate	78-40-0	2.50000	0.00012	
			Isopropyl Alcohol	67-63-0	2.50000	0.00012	
			1-Octanol	111-87-5	2.50000	0.00012	

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)