

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/4/2014
Job End Date:	5/5/2014
State:	Texas
County:	Reagan
API Number:	42-383-38645-00-00
Operator Name:	Devon Energy Production Company L.P.
Well Name and Number:	UNIVERSITY 48-11 2 H
Longitude:	-101.31632300
Latitude:	31.10333200
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	0
Total Base Water Volume (gal):	4,562,294
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
Fresh Water	Operator	Base Fluid					
			Fresh Water	7732-18-5	100.00000	88.99873	Density = 8.340
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	7.36848	
SSA-2	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	2.24059	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.11533	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.03702	
Losurf 360	Halliburton	Surfactant					
			Poly(oxy-1,2-ethanediyl), alpha.-isodecyl-.omega.-hydroxy-	61827-42-7	30.00000	0.02549	Density = 8.370
			Complex alkylamine	Confidential	5.00000	0.00425	
OptiKleen-WF™	Halliburton	Concentrate					
			Sodium perborate tetrahydrate	10486-00-7	100.00000	0.01544	

Scalechek® SCP-2 Scale Inhibitor	Halliburton	Scale Preventer					
			Glassy calcium magnesium phosphate	65997-17-3	100.00000	0.00795	
3rd Party Biocide	Bosque	Biocide					
			Water	7732-18-5	85.00000	0.00239	
			Sodium chlorite	7758-19-2	35.00000	0.00098	Density = 11.100
			Sodium chloride	7647-14-5	5.00000	0.00014	
3rd Party Biocide	Bosque	Biocide					
			Water	7732-18-5	74.00000	0.00180	
			Hydrogen chloride	7647-01-0	37.00000	0.00090	Density = 9.610
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00119	
			Propargyl alcohol	107-19-7	10.00000	0.00020	
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 Ingredient(s)					
			Water	7732-18-5		1.22967	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.03702	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00617	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00617	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00617	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00617	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00123	
		Other Ingredient(s)					
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00123	
		Other Ingredient(s)					
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00059	
		Other Ingredient(s)					
			Alcohols, C14-C15, ethoxylated	68951-67-7		0.00059	
		Other Ingredient(s)					
			Fatty acids, tall oil	Confidential		0.00059	
		Other Ingredient(s)					
			Olefins	Confidential		0.00010	

		Other Ingredient(s)					
			Olefins	Confidential		0.00010	
		Other Ingredient(s)					
			Olefins	Confidential		0.00002	
		Other Ingredient(s)					
			Olefins	Confidential		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)