

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/26/2013
Job End Date:	8/26/2013
State:	Oklahoma
County:	Logan
API Number:	35-083-24105-00-00
Operator Name:	Devon Energy Production Company L.P.
Well Name and Number:	RM 2-18N-2W 2MH
Longitude:	-97.37545333
Latitude:	36.07089972
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	5,435
Total Base Water Volume (gal):	4,216,740
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	93.87840	Density = 8.330
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	5.56193	
HYDROCHLORIC ACID 10-30%	Reagent	Acid					
			Hydrochloric acid	7647-01-0	30.00000	0.10764	Density = 8.95
ER-25	Halliburton	Resin					
			Dipropylene glycol monomethyl ether	34590-94-8	100.00000	0.01959	
			Bisphenol A / Epichlorohydrin resin	25068-38-6	30.00000	0.00588	
			Butyl glycidyl ether	2426-08-6	5.00000	0.00098	
RockOn™ MX 5-2556	Multi-Chem	Surfactant					
			Propoxylated Alcohol	Proprietary	13.00000	0.01200	
			Ethoxylated Alcohol	Proprietary	13.00000	0.01200	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01559	
SandWedge®	Halliburton	Conductivity Enhancer					

			Isopropanol	67-63-0	60.00000	0.01064	
			Heavy aromatic petroleum naphtha	64742-94-5	10.00000	0.00177	
			Methanol	67-56-1	5.00000	0.00089	
OptiKleen-WF™	Halliburton	Concentrate					
			Sodium perborate tetrahydrate	10486-00-7	100.00000	0.01118	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00359	
			Acetic acid	64-19-7	60.00000	0.00216	
FE-2A	Halliburton	Additive					
			Citric acid	77-92-9	60.00000	0.00248	
HAI-404M™	Halliburton	Corrosion Inhibitor					
			Isopropanol	67-63-0	30.00000	0.00010	
			Methanol	67-56-1	30.00000	0.00010	
			Aldehyde	Confidential	30.00000	0.00010	
			Quaternary ammonium salt	Confidential	10.00000	0.00003	
			1-(Benzyl)quinolinium chloride	15619-48-4	10.00000	0.00003	
Chlorine Dioxide	Bosque	Biocide					
			Chlorine Dioxide	10049-04-4	100.00000	0.00000	
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		0.46650	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.01559	
		Other Ingredient(s)					
			Fatty acid amine salt mixture	Confidential		0.01064	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00263	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00260	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00260	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00260	
		Other Ingredient(s)					
			Quaternary ammonium compound	Confidential		0.00177	
		Other Ingredient(s)					
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00052	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00052	
		Other Ingredient(s)					
			Naphthenic acid ethoxylate	68410-62-8		0.00010	
		Other Ingredient(s)					

			Polyethoxylated fatty amine salt	61791-26-2		0.00003	
		Other Ingredient(s)					
			Fatty acids, tall oil	Confidential		0.00003	
		Other Ingredient(s)					
			Epichlorohydrin	106-89-8		0.00002	
		Other Ingredient(s)					
			Ethoxylated amine	Confidential		0.00002	
		Other Ingredient(s)					
			Ammonium phosphate	7722-76-1		0.00000	
		Other Ingredient(s)					
			Sodium iodide	7681-82-5		0.00000	

* 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)