

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/10/2014
Job End Date:	12/20/2014
State:	Texas
County:	Andrews
API Number:	42-003-46529-00-00
Operator Name:	SM Energy
Well Name and Number:	UNIVERSITY LANDS 6-21 UNIT 5H
Longitude:	-102.29184000
Latitude:	32.47324000
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	17,595
Total Base Water Volume (gal):	13,356,168
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	Operator	Carrier					
			Water	7732-18-5	100.00000	90.17237	
Sand, White, 40/70	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		6.41879	
Sand, White, 100 mesh	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		2.70675	
HCl, 10.1 - 15%	Baker Hughes	Acidizing					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.49136	SmartCare Product
S-200	Baker Hughes	Surfactant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.08391	
FRW-18	Baker Hughes	Friction Reducer					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.05206	SmartCare Product
ClayCare, ClayTreat-2C, 330 gl tote	Baker Hughes	Clay Control					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02478	SmartCare Product
Scaletrol 720, 330 gl tote	Baker Hughes	Scale Inhibitor					

			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01383	SmartCare Product
Alpha 1427	Baker Hughes	Biocide					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01032	SmartCare Product
GW-4	Baker Hughes	Gelling Agent					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00164	SmartCare Product
CI-14	Baker Hughes	Corrosion Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00150	
Ferrotrol 280L , 330 gl tote	Baker Hughes	Clay Control					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00109	SmartCare Product
GBW-5	Baker Hughes	Breaker					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00069	SmartCare Product
NE-23, 330 gallon tote	Baker Hughes	Non-emulsifier					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00032	
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.							
Ingredients in Additive (s) (MSDS and non- MSDS)	Baker Hughes	See Trade Name(s) List					
			Crystalline Silica (Quartz)	14808-60-7	100.00000	9.12347	
			Water	7732-18-5	85.00000	0.53060	
			Hydrochloric Acid	7647-01-0	15.00000	0.07370	
			Choline Chloride	67-48-1	75.00000	0.01858	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.01562	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000	0.01562	
			Ethanol	64-17-5	10.00000	0.00890	
			Ethylene Glycol	107-21-1	45.00000	0.00622	
			Alcohols, C6-12 ethoxylated propoxylated	68937-66-6	5.00000	0.00419	
			Alcohols, C10-16, ethoxylated propoxylated	69227-22-1	5.00000	0.00419	
			Alcohols, ethoxylated	68551-12-2	4.00000	0.00336	
			Glutaraldehyde	111-30-8	30.00000	0.00309	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000	0.00277	
			Sodium Chloride	7647-14-5	5.00000	0.00274	
			Amines, unsatd. alkyl, ethoxylated	68155-39-5	2.00000	0.00168	
			Guar Gum	9000-30-0	100.00000	0.00163	
			Ammonium Chloride	12125-02-9	3.00000	0.00156	
			Methanol	67-56-1	100.00000	0.00150	
			2-Mercaptoethanol	60-24-2	100.00000	0.00109	
			Oleamide DEA	93-83-4	2.00000	0.00104	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00104	

		Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00103	
		Calcium Chloride	10043-52-4	5.00000	0.00069	
		Ammonium Persulfate	7727-54-0	100.00000	0.00069	
		Quaternary Ammonium Compound	68424-85-1	5.00000	0.00052	
		Polyoxyalkylenes	68951-67-7	30.00000	0.00045	
		Polyoxyethylene Sorbitan Monooleate	9005-65-6	0.50000	0.00026	
		Sorbitan Monooleate	1338-43-8	0.50000	0.00026	
		Olefin Sulfonate	30965-85-6	30.00000	0.00019	
		Fatty Acids	61790-12-3	10.00000	0.00015	
		Potassium Chloride	7447-40-7	1.00000	0.00014	
		Modified Thiourea Polymer	68527-49-1	7.00000	0.00011	
		Quaternary Amine Compounds	61789-68-2	30.00000	0.00010	
		Isopropanol	67-63-0	30.00000	0.00010	
		Propargyl Alcohol	107-19-7	5.00000	0.00008	
		Olefin	64743-02-8	5.00000	0.00008	
		Cupric Chloride	7447-39-4	5.00000	0.00005	
		Ammonium Hydroxide	1336-21-6	5.00000	0.00005	
		Polyester	68511-95-1	15.00000	0.00005	
		Ethoxylated Nonylphenol	9016-45-9	5.00000	0.00002	
		Formaldehyde	50-00-0	1.00000	0.00002	
		Benzyl Chloride	100-44-7	1.00000	0.00000	
		Bis (hydroethyl) cocamine	68439-72-5	1.00000	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)