

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/4/2014
Job End Date:	9/8/2014
State:	Texas
County:	Crockett
API Number:	42-105-41480-00-00
Operator Name:	EP Energy
Well Name and Number:	UNIVERSITY 4613-1H
Longitude:	-101.35365300
Latitude:	30.95887800
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,627
Total Base Water Volume (gal):	6,822,942
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	0.84285	
40/70 White	FTSI	proppant					
			Silica, Quartz	14808-60-7	100.00000	0.08218	
100 Mesh Sand	FTSI	proppant					
			Silica, Quartz	14808-60-7	100.00000	0.06601	
Hydrochloric Acid (HCl)	FTSI	Acid					
			Water	7732-18-5	63.00000	0.00295	
			Hydrogen Chloride	7647-01-0	37.00000	0.00173	
HVG-1	FTSI	Water Gelling Agent					
			Petroleum Distillate	64742-47-8	55.00000	0.00123	
			Guar Gum	9000-30-0	55.00000	0.00123	
			Raffinates (Petroleum), Sorption Process	64741-85-1	50.00000	0.00111	
			Clay	1302-78-9	5.00000	0.00011	
			Clay	14808-60-7	2.00000	0.00004	
			Surfactant	24938-91-8	1.00000	0.00002	
			Surfactant	154518-36-2	1.00000	0.00002	
			Surfactant	9043-30-5	1.00000	0.00002	

SHALE SURF 1000	FTSI	Surfactant					
			Water	7732-18-5	85.00000	0.00035	
			Ethoxylated alcohol	Proprietary	20.00000	0.00008	
			Poly-(oxy-1,2-ethanediyl)-alpha-undecyl-omega	34398-01-1	11.00000	0.00005	
			Cyclohexene	5989-27-5	10.00000	0.00004	
			2-Propanol	67-63-0	10.00000	0.00004	
			2-Butoxyethanol	111-76-2	10.00000	0.00004	
			Methanol	67-56-1	10.00000	0.00004	
KCLS-3	FTSI	Clay Control					
			Tetramethylammonium Chloride	75-57-0	50.00000	0.00051	
			Proprietary	Proprietary			
NE-100	FTSI	Non-emulsifier					
			Water	7732-18-5	90.00000	0.00037	
			2-Propanol	67-63-0	10.00000	0.00004	
			2-Butoxyethanol	111-76-2	10.00000	0.00004	
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00002	
			Benzene, C10-16 Alkyl Derivatives	68648-87-3	0.04000	0.00000	
			Unsulphonated Matter	Proprietary	0.03000	0.00000	
			Sulfuric Acid	7664-93-9	0.01000	0.00000	
			Sulfur Dioxide	7446-09-5		0.00000	
ICI-150	FTSI	Biocide					
			Gluteral	111-30-8	50.00000	0.00007	
			Water	7732-18-5	50.00000	0.00007	
			Methanol	67-56-1	0.50000	0.00000	
APB-1	FTSI	Gel breaker					
			Ammonium Persulfate	7727-54-0	100.00000	0.00003	
FE-100L	FTSI	Iron control					
			Water	7732-18-5	60.00000	0.00001	
			Citric acid	77-92-9	55.00000	0.00001	
CI-150	FTSI	Acid Corrosion Inhibitor					
			Ethylene Glycol	107-21-1	30.00000	0.00000	
			Isopropanol	67-63-0	30.00000	0.00000	
			Organic amine resin salt	Proprietary	30.00000	0.00000	
			Aromatic aldehyde	Proprietary	10.00000	0.00000	
			Dimethylformamide	68-12-2	10.00000	0.00000	
			Alkylene Oxide Block Polymer	Proprietary	10.00000	0.00000	
			Quaternary ammonium compound	Proprietary	10.00000	0.00000	
			Water	7732-18-5	5.00000	0.00000	
			Diethylene glycol	111-46-6	1.00000	0.00000	
			Fatty Acid	Proprietary	0.10000	0.00000	
			Aliphatic alcohol	Proprietary	0.10000	0.00000	
			Fatty Acid Salt	Proprietary	0.10000	0.00000	

FRW-200	FTSI	Friction reducer					
			Water	7732-18-5	48.00000	0.00000	
			Copolymer of acrylamide and sodium acrylate	25987-30-8	33.00000	0.00000	
			Petroleum distillate hydrotreated light	64742-47-8	26.00000	0.00000	
			Acrylamide P/W acrylic acid, ammonium salt	26100-47-0	25.00000	0.00000	
			Ammonium Chloride	12125-02-9	12.00000	0.00000	
			Surfactant	Proprietary	7.00000	0.00000	
			Hydrotreated heavy paraffinic	64742-54-7	5.00000	0.00000	
			Alcohols (C12-C14), ethoxylated	68439-50-9	4.00000	0.00000	
			Alcohols (C10-C16), ethoxylated	68002-97-1	4.00000	0.00000	
			Alcohols (C12-C16), ethoxylated	68551-12-2	4.00000	0.00000	
			Polyethylene glycol monooleate	9004-96-0	3.00000	0.00000	
			Sorbitan Monooleate	1338-43-8	3.00000	0.00000	
			Sorbitol Tetraoleate	61723-83-9	2.00000	0.00000	
			Dewaxed heavy paraffinic	64742-65-0	1.50000	0.00000	
			Alkylloxypolyethyleneoxyethanol	84133-50-6	1.00000	0.00000	
			Ammonium Acrylate	10604-69-0	0.50000	0.00000	
			Isopropanol	67-63-0	0.30000	0.00000	
			Acrylamide	79-06-1	0.10000	0.00000	
NE-100W	FTSI	Non-emulsifier					
			Water	7732-18-5	80.00000	0.00000	
			Methanol	67-56-1	15.00000	0.00000	
			2-Butoxyethanol	111-76-2	10.00000	0.00000	
			2-Propanol	67-63-0	10.00000	0.00000	
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00000	
			Benzene, C10-16 Alkyl Derivatives	68648-87-3	0.04000	0.00000	
			Unsulphonated Matter	Proprietary	0.03000	0.00000	
			Sulfuric Acid	7664-93-9	0.01000	0.00000	
			Sulfur Dioxide	7446-09-5		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.

* 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)