

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/3/2015
Job End Date:	3/11/2015
State:	Texas
County:	Reagan
API Number:	42-383-39202-00-00
Operator Name:	American Energy Permian Basin
Well Name and Number:	University 09 #0806H
Longitude:	-101.59483000
Latitude:	31.28312500
Datum:	WGS84
Federal/Tribal Well:	NO
True Vertical Depth:	7,830
Total Base Water Volume (gal):	8,724,022
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	American Energy Permian Basin	Carrier / Base Fluid					
			Water	7732-18-5	100.00000	86.98747	
40-70 mesh Brown Sand, Area 1	Universal Pressure Pumping, Inc.	PROPPANT					
			Crystalline silica quartz	14808-60-7	100.00000	7.36228	
100 mesh White Sand, Area 1	Universal Pressure Pumping, Inc.	PROPPANT					
			Silica, Quartz, SiO2	14808-60-7	100.00000	1.69783	
Texas Brite 40-70 mesh	Universal Pressure Pumping, Inc.	White Sand					
			Silica, Quartz, SiO2	14808-60-7	100.00000	1.63546	
40-70 mesh White Sand, Area 1	Universal Pressure Pumping, Inc.	PROPPANT					
			Silica, Quartz, SiO2	14808-60-7	100.00000	1.58076	
7 1/2% HCl Acid, Area 1	Universal Pressure Pumping, Inc.	HYDROCHLORIC ACID (Uninhibited)					
			Water	7732-18-5	74.00000	0.47066	
			Hydrogen Chloride	7647-01-0	37.00000	0.23533	
WFR-5	Universal Pressure Pumping, Inc.	FRICTION REDUCERS					
			Water	7732-18-5	35.00000	0.02357	
			Poly (Acrylamide and Adam methyl Chloride)	69418-26-4	31.00000	0.02088	

			Isoparaffinic Solvent	64742-47-8	26.00000	0.01751	
			Sorbitan Monooleate	1338-43-8	3.00000	0.00202	
			Ethoxylated Tridecyl Alcohol	78330-21-9	3.00000	0.00202	
			Ammonium Chloride	12125-02-9	1.00000	0.00067	
			Adipic Acid	124-04-9	1.00000	0.00067	
BIO-15G	Universal Pressure Pumping, Inc.	BIOCIDES					
			Glutaraldehyde	111-30-8	14.00000	0.00401	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	3.00000	0.00086	
			Alkyl Dimethyl Benzyl Ammonium Chloride	68424-85-1	3.00000	0.00086	
			Ethanol	64-17-5	3.00000	0.00086	
IR-1	Universal Pressure Pumping, Inc.	IRON CONTROL ADDITIVES					
			THIOGLYCOL	60-24-2	75.00000	0.00151	
			CUPRIC CHLORIDE DIHYDRATE	10125-13-0	7.00000	0.00014	
CIA - 5	Universal Pressure Pumping, Inc.	ACID CORROSION INHIBITORS					
			Methyl Alcohol	67-56-1	40.00000	0.00063	
			PROPARGYL ALCOHOL	107-19-7	8.00000	0.00013	
NE-1	Universal Pressure Pumping, Inc.	NON-EMULSIFIER AND DE-EMULSIFIERS					
			Water	7732-18-5	66.00000	0.00039	
			Methyl Alcohol	67-56-1	15.00000	0.00009	
			Ethylene Glycol Monobutyl Ether	111-76-2	15.00000	0.00009	
			Cocamide Diethanolamine Salt	68603-42-9	10.00000	0.00006	
			Diethanolamine	111-42-2	5.00000	0.00003	

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)