

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/22/2017
Job End Date:	11/12/2017
State:	Texas
County:	Ward
API Number:	42-475-37198-00-00
Operator Name:	Jagged Peak Energy
Well Name and Number:	UTL 2932-17 2H
Latitude:	31.64471300
Longitude:	-103.20515500
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,576
Total Base Water Volume (gal):	28,023,618
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	91.62647	
Sand, White	BJ Services	Proppant					
				Listed Below			

Sand, Brown	BJ Services	Proppant					
				Listed Below			
Other Chemical (s)	BJ Services	See Trade Name (s) List					
			Water	7732-18-5	85.00000	0.54477	
HCl, 10.1 - 15%	BJ Services	Acidizing					
				Listed Below			
FRW-15C	BJ Services	Friction Reducer					
				Listed Below			
MAQUAT 12:3	BJ Services	Biocide					
				Listed Below			
Inflo 78	BJ Services	Surfactant					
				Listed Below			
GBW-5	BJ Services	Breaker					
				Listed Below			
GW-4LDF	BJ Services	Gelling Agent					
				Listed Below			
CI-14	BJ Services	Corrosion Inhibitor					

				Listed Below			
NE-35	BJ Services	Non-emulsifier					
				Listed Below			
InnoFrac DP	BJ Services	Diverter					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline Silica (Quartz)	14808-60-7	100.00000	11.71558	
			Hydrochloric Acid	7647-01-0	15.00000	0.04681	
			Petroleum distillates	64742-47-8	98.00000	0.03020	
			Dipropylene Glycol Methyl Ether	34590-94-8	30.00000	0.02455	
			Sodium Chloride	7647-14-5	3.00000	0.02349	
			2-Propenic acid, polymer with 2-propenamide, sodium salt	25987-30-8	11.00000	0.01846	
			Glutaraldehyde	111-30-8	12.50000	0.00589	
			Hydrocarbon Ester	Trade Secret	7.00000	0.00573	
			Citrus Terpenes	68647-72-3	7.00000	0.00573	
			Ammonium Chloride	12125-02-9	2.00000	0.00336	
			9-Octadecenamide, N,N-Bis(2-hydroxyethyl)-(9z)-	93-83-4	2.00000	0.00336	
			Ammonium Persulfate	7727-54-0	100.00000	0.00269	
			Sorbitan, mono-(9Z)-9octadecenoate	1338-43-8	1.00000	0.00168	
			Sorbitan, mono-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs.	9005-65-6	1.00000	0.00168	
			Alcohols, C12-16 Ethoxylated	68551-12-2	1.00000	0.00168	
			Ethanol	64-17-5	2.00000	0.00094	

			Quaternary Ammonium Compound	68424-85-1	1.00000	0.00085	
			Alkyl Quaternary Compound	7173-51-5	1.20000	0.00057	
			Methanol	67-56-1	100.00000	0.00043	
			Petroleum Distillate Blend (1)	64742-47-8	70.00000	0.00019	
			Petroleum Distillate Blend (3)	8042-47-5	18.00000	0.00019	
			Petroleum Distillate Blend (2)	64742-55-8	70.00000	0.00019	
			Guar Gum	9000-30-0	60.00000	0.00017	
			Polyoxyalkylenes	68951-67-7	5.00000	0.00013	
			Polylactide resin	9051-89-2	30.00000	0.00009	
			Nonionic glycol ester	68400-71-5	25.00000	0.00008	
			Propylene Glycol	57-55-6	14.00000	0.00005	
			Fatty Acids	61790-12-3	10.00000	0.00004	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00003	
			Olefin	64743-02-8	5.00000	0.00002	
			Propargyl Alcohol	107-19-7	1.80000	0.00002	
			Sodium octylimodpropionate	94441-92-6	1.00000	0.00001	
			Benzenesulfonic acid, hexadecyl (sulfophenoxy)-, disodium salt	65143-89-7	2.00000	0.00001	
			Formaldehyde	50-00-0	1.00000	0.00000	
			Sodium lauriminodipropionate	14960-06-6	1.00000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)