

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	08/20/2012
State:	California
County:	Kern
API Number:	04-030-42051
Operator Name:	Vintage Prod Of Cal
Well Name and Number:	Vintage 1-14
Longitude:	-119.24788
Latitude:	35.48863
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	8,432
Total Water Volume (gal)*:	614,376

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	100.00%	74.90006%	
Alpha 125	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00738%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00552%	SmartCare Product
			Water	7732-18-5	97.00%	0.17833%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.02266%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.24956%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00416%	
			Water	7732-18-5	60.00%	0.24956%	
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.01877%	
			Glyoxal	107-22-2	30.00%	0.05630%	
			Sodium Hydroxide	1310-73-2	5.00%	0.00938%	
			Sodium Tetraborate	1330-43-4	10.00%	0.01877%	
GW-4LBF	Baker Hughes	Gelling Agent	Guar Gum	9000-30-0	60.00%	0.43255%	SmartCare Product
			Paraffinic Petroleum Distillate	64742-55-8	60.00%	0.43255%	
			Petroleum Distillate	64742-47-8	60.00%	0.43255%	
Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	10.79487%	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.09754%	
Super LC, 20/40	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00115%	

			P/F Resin	9003-35-4	5.00%	0.57606%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	11.17550%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.04790%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.09581%	
			Water	7732-18-5	50.00%	0.07984%	
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.							
			Acetyl Triethyl Citrate	77-89-4		0.0226606374%	
			Methanol	67-56-1		0.0000614681%	
			Sodium Bicarbonate	144-55-8		0.0720915325%	
			Water	7732-18-5		0.0184404337%	

* 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%

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)