

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	10/22/2012
State:	California
County:	Kern
API Number:	04-030-35996
Operator Name:	Vintage Prod Of Cal
Well Name and Number:	Section 34 BE-Q1
Longitude:	-119.81279
Latitude:	35.44785
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	2,312
Total Water Volume (gal)*:	65,478

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%	70.99966%	
Alpha 125	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00515%	SmartCare Product
GBW-5	Baker Hughes	Breaker	Ammonium Phosphate	7727-54-0	100.00%	0.00390%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00358%	SmartCare Product
			Water	7732-18-5	97.00%	0.11570%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.01843%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.07778%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00130%	
			Water	7732-18-5	60.00%	0.07778%	
Clay Master-5C (Tote)	Baker Hughes	Clay Control	Oxyakylated Amine Quat	138879-94-4	60.00%	0.05450%	
XLW-32, 260 gal tote	Baker Hughes	Crosslinker	Boric Acid (H3BO3)	10043-35-3	30.00%	0.01473%	
			Methanol	67-56-1	60.00%	0.02946%	
			Methyl Borate	121-43-7	30.00%	0.01473%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.02116%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.02116%	
			Guar Gum	9000-30-0	60.00%	0.25389%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.02116%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.12695%	
			Petroleum Distillates	64742-47-8	30.00%	0.12695%	

Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	27.49251%	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.39015%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.02093%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.04187%	
			Water	7732-18-5	50.00%	0.03489%	
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.							
			2-Butoxy-1-Propanol	15821-83-7		0.0003385246%	
			Acetyl Triethyl Citrate	77-89-4		0.0184345472%	
			Methanol	67-56-1		0.0000429359%	
			Water	7732-18-5		0.0128807741%	
* 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)							