

## Hydraulic Fracturing Fluid Product Component Information Disclosure

<b>Last Fracture Date</b>	<b>10/08/2012</b>
<b>State:</b>	<b>California</b>
<b>County:</b>	<b>Kern</b>
<b>API Number:</b>	<b>04-030-48344</b>
<b>Operator Name:</b>	<b>Vintage Prod Of Cal</b>
<b>Well Name and Number:</b>	<b>Sill 2-14H</b>
<b>Longitude:</b>	<b>-119.24992</b>
<b>Latitude:</b>	<b>35.49755</b>
<b>Long/Lat Projection:</b>	<b>NAD27</b>
<b>Production Type:</b>	<b>Oil</b>
<b>True Vertical Depth (TVD):</b>	<b>8,032</b>
<b>Total Water Volume (gal)*:</b>	<b>335,958</b>

### 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%	83.00143%	
Alpha 125	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00743%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00345%	SmartCare Product
			Water	7732-18-5	97.00%	0.11168%	
High Perm CRB	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	60.00%	0.00071%	SmartCare Product
			Crystalline Silica Quartz	14808-60-7	30.00%	0.00036%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.02688%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.25342%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00422%	
			Water	7732-18-5	60.00%	0.25342%	
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.02103%	
			Glyoxal	107-22-2	30.00%	0.06308%	
			Sodium Hydroxide	1310-73-2	5.00%	0.01051%	
			Sodium Tetraborate	1330-43-4	10.00%	0.02103%	
XLW-32, 260 gal tote	Baker Hughes	Crosslinker	Boric Acid (H3BO3)	10043-35-3	30.00%	0.00356%	
			Methanol	67-56-1	60.00%	0.00711%	
			Methyl Borate	121-43-7	30.00%	0.00356%	

GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.03138%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO <sub>2</sub> )	14808-60-7	5.00%	0.03138%	
			Guar Gum	9000-30-0	60.00%	0.37652%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.03138%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.18826%	
			Petroleum Distillates	64742-47-8	30.00%	0.18826%	
Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	7.44987%	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.03556%	
Super LC, 20/40	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00074%	
			P/F Resin	9003-35-4	5.00%	0.37208%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	7.21833%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.05078%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.10155%	
			Water	7732-18-5	50.00%	0.08463%	
<b>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.</b>							
			2-Butoxy-1-Propanol	15821-83-7		0.0005020332%	
			Acetyl Triethyl Citrate	77-89-4		0.0268814174%	
			Cured Acrylic Resin	Trade Secret		0.0003555743%	
			Methanol	67-56-1		0.0000619573%	
			Water	7732-18-5		0.0185872023%	
* 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)							