

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	7/28/2012
State:	California
County:	Los Angeles Offshore
API Number:	04-237-23047
Operator Name:	Thums Long Beach Co
Well Name and Number:	C-246
Longitude:	-118.13742
Latitude:	33.73992
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	6,101
Total Water Volume (gal)*:	106,176

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%	76.60196%	
Superset-W, 55 gal drum	Baker Hughes	Activator	Methanol	67-56-1	50.00%	0.08601%	
			Poly (Oxyethylene) Nonylphenol Ether	9016-45-9	50.00%	0.08601%	
X-Cide 207	Baker Hughes	Biocide	2-Methyl-4-Isothiazolin-3-One	2682-20-4	5.00%	0.00026%	
			5-Chloro-2-Methyl-4-Isothiazolin-3-One	26172-55-4	10.00%	0.00052%	
			Crystalline Silica: Cristobalite	14464-46-1	1.00%	0.00005%	
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00005%	
			Diatomaceous Earth, Calcined	91053-39-3	60.00%	0.00312%	
			Magnesium Chloride	7786-30-3	5.00%	0.00026%	
			Magnesium Nitrate	10377-60-3	10.00%	0.00052%	
GBW-5	Baker Hughes	Breaker	Ammonium Persulfate	7727-54-0	100.00%	0.00303%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00563%	SmartCare Product
			Water	7732-18-5	97.00%	0.18195%	
High Perm CRB	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	60.00%	0.00363%	SmartCare Product
			Crystalline Silica Quartz	14808-60-7	30.00%	0.00182%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.21606%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00360%	

			Water	7732-18-5	60.00%	0.21606%	
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.01852%	
			Glyoxal	107-22-2	30.00%	0.05557%	
			Sodium Hydroxide	1310-73-2	5.00%	0.00926%	
			Sodium Tetraborate	1330-43-4	10.00%	0.01852%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.02459%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.02459%	
			Guar Gum	9000-30-0	60.00%	0.29513%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.02459%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.14756%	
			Petroleum Distillates	64742-47-8	30.00%	0.14756%	
Super LC, 16/30	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00212%	
			P/F Resin	9003-35-4	5.00%	1.06050%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	20.57371%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.03964%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.07928%	
			Water	7732-18-5	50.00%	0.06607%	
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		0.0003935052%	
			Cured Acrylic Resin	Trade Secret		0.0018171106%	

* 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%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.