

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	12/02/2012
State:	California
County:	Los Angeles Offshore
API Number:	04-237-27460
Operator Name:	Thums Long Beach Co
Well Name and Number:	B-530
Longitude:	-118.15903
Latitude:	33.75213
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	5,254
Total Water Volume (gal)*:	159,684

## 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%	73.12626%	
Superset-W, 330 gl tote	Baker Hughes	Activator	Methanol	67-56-1	50.00%	0.10169%	
			Poly (Oxyethylene) Nonylphenol Ether	9016-45-9	50.00%	0.10169%	
X-Cide 207	Baker Hughes	Biocide	2-Methyl-4-Isothiazolin-3-One	2682-20-4	5.00%	0.00028%	
			5-Chloro-2-Methyl-4-Isothiazolin-3-One	26172-55-4	10.00%	0.00056%	
			Crystalline Silica: Cristobalite	14464-46-1	1.00%	0.00006%	
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00006%	
			Diatomaceous Earth, Calcined	91053-39-3	60.00%	0.00336%	
			Magnesium Chloride	7786-30-3	5.00%	0.00028%	
			Magnesium Nitrate	10377-60-3	10.00%	0.00056%	
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00387%	SmartCare Product
			Water	7732-18-5	97.00%	0.12527%	
High Perm CRB	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	60.00%	0.00494%	SmartCare Product
			Crystalline Silica Quartz	14808-60-7	30.00%	0.00247%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.00934%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.32315%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00539%	

			Water	7732-18-5	60.00%	0.32315%	
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.02393%	
			Glyoxal	107-22-2	30.00%	0.07180%	
			Sodium Hydroxide	1310-73-2	5.00%	0.01197%	
			Sodium Tetraborate	1330-43-4	10.00%	0.02393%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.03120%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.03120%	
			Guar Gum	9000-30-0	60.00%	0.37435%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.03120%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.18717%	
			Petroleum Distillates	64742-47-8	30.00%	0.18717%	
Super LC, 16/30	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00242%	
			P/F Resin	9003-35-4	5.00%	1.20948%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	23.46385%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.04407%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.08813%	
			Water	7732-18-5	50.00%	0.07344%	
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		0.0004991294%	
			Acetyl Triethyl Citrate	77-89-4		0.0093425364%	
			Cured Acrylic Resin	Trade Secret		0.0024715705%	

\* 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)