

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	3/22/2012
State:	California
County/Parish	Kern County
API Number:	0403046698
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	2-2B-36B
Longitude:	-119.464526063361
Latitude:	35.1920900134876
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2950
Total Water Volume (gal)*:	143,361

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
YF125ST	Schlumberger	Surfactant , Breaker, Crosslinker, Gelling Agent, Clay Control Agent, Bactericide, Demulsifier, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		68.40658%	
			Crystalline silica	14808-60-7	98.27036%	31.04696%	
			Guar gum	9000-30-0	0.56622%	0.17889%	
			Diammonium peroxidisulphate	7727-54-0	0.32250%	0.10189%	
			1, 2, 3 - Propanetriol	56-81-5	0.31294%	0.09887%	
			Sodium tetraborate decahydrate	1303-96-4	0.18776%	0.05932%	
			Methanol	67-56-1	0.11179%	0.03532%	
			Decyl-dimethyl amine	2605-79-0	0.05701%	0.01801%	

			oxide				
			Zirconium dichloride oxide	7699-43-6	0.05060%	0.01598%	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.02459%	0.00777%	
			Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.01987%	0.00628%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.01987%	0.00628%	
			Ethoxylated propoxylated 4-nonylphenol-formaldehyde resin	30846-35-6	0.01485%	0.00469%	
			Heavy aromatic naphtha	64742-94-5	0.01003%	0.00317%	
			Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.00983%	0.00311%	
			Alcohol, C11-14, ethoxylated	78330-21-9	0.00983%	0.00311%	
			Non-crystalline silica	7631-86-9	0.00580%	0.00183%	
			Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00442%	0.00139%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00425%	0.00134%	
			Naphtalene (impurity)	91-20-3	0.00200%	0.00063%	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00129%	0.00041%	
			Decyldimethyl amine (impurity)	1120-24-7	0.00091%	0.00029%	
			Hydrogen peroxide (impurity)	7722-84-1	0.00055%	0.00017%	

* 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%

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