

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	2/22/2013
State:	California
County:	Kern
API Number:	04-030-49844
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	77-18R
Longitude:	-119.540452
Latitude:	35.312674
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	3,141
Total Water Volume (gal)*:	22,391

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
Produced Water (Oxy Provided), YF122 Flex	Schlumberger	Activator , Surfactant , Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, Scale Inhibitor, Industrial Antimicrobial, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		84.82270%	
			Crystalline silica	14808-60-7	94.08774%	14.27997%	
			Phenolic resin	9003-35-4	1.92016%	0.29143%	
			Propan-2-ol	67-63-0	0.86136%	0.13073%	
			Guar gum	9000-30-0	0.82599%	0.12536%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.63978%	0.09710%	
			Potassium borate	1332-77-0	0.33595%	0.05099%	
			Diammonium peroxidisulphate	7727-54-0	0.29610%	0.04494%	
			Glycerol	56-81-5	0.16496%	0.02504%	
			Ethane-1,2-diol	107-21-1	0.14950%	0.02269%	
			2,2',2"-nitrilotriethanol	102-71-6	0.14477%	0.02197%	
			2-Propenoic acid, polymer with sodium phosphinate	129898-01-7	0.14346%	0.02177%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.13751%	0.02087%	
			Potassium hydroxide	1310-58-3	0.10982%	0.01667%	
			Zirconium dichloride oxide	7699-43-6	0.08362%	0.01269%	
			Crosslinked PO/EO-block polymer	68123-18-2	0.05012%	0.00761%	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.03125%	0.00474%	
			Sodium chloride	7647-14-5	0.02945%	0.00447%	
			Non-crystalline silica	7631-86-9	0.02020%	0.00307%	
			Tetrakis(hydroxymethyl)phosphonium	55566-30-8	0.01795%	0.00272%	

