

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	11/28/2012
State:	California
County:	Kern County
API Number:	0403045496
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	17E-35R
Longitude:	-119.480652
Latitude:	35.271074
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4,183
Total Water Volume (gal)*:	167,996

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, INDUSTRIAL ANTIMICROBIAL, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		78.36321%	
			Crystalline silica	14808-60-7	97.60714%	21.11905%	
			Phenolic resin	9003-35-4	2.34114%	0.50655%	
			Carbohydrate polymer	Proprietary	0.80058%	0.17322%	
			Propan-2-ol	67-63-0	0.51334%	0.11107%	
			Oxyalkylated Alcohol (2)	Proprietary	0.37241%	0.08058%	
			Aliphatic polyol	Proprietary	0.34757%	0.07520%	
			Diammonium peroxidisulphate	7727-54-0	0.26953%	0.05832%	
			2,2',2"-nitrilotriethanol	102-71-6	0.25645%	0.05549%	
			Potassium hydroxide	1310-58-3	0.15029%	0.03252%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.11696%	0.02531%	
			Zirconium dichloride oxide	7699-43-6	0.10073%	0.02180%	
			Aliphatic co-polymer	Proprietary	0.06242%	0.01350%	
			Methanol	67-56-1	0.03229%	0.00699%	
			Oxyalkylated Alcohol (1)	Proprietary	0.02349%	0.00508%	
			Alkylalcohol ethoxylated	Proprietary	0.02349%	0.00508%	
			Diocetyl sulfosuccinate sodium salt	Proprietary	0.02349%	0.00508%	
			Non-crystalline silica	7631-86-9	0.01300%	0.00281%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.01300%	0.00281%	

* 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)