

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	6/2/2012
State:	California
County/Parish	Kern County
API Number:	0403041965
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	2-9-36B
Longitude:	-119.464268
Latitude:	35.181087
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	3,071
Total Water Volume (gal)*:	32,641

### 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)*	-		70.81968%	
			Crystalline silica	14808-60-7	98.36150%	28.70220%	
			Guar gum	9000-30-0	0.81745%	0.23854%	
			Diammonium peroxidisulphate	7727-54-0	0.21561%	0.06292%	
			1, 2, 3 - Propanetriol	56-81-5	0.16655%	0.04860%	
			Methanol	67-56-1	0.13014%	0.03798%	
			Sodium tetraborate decahydrate	1303-96-4	0.09993%	0.02916%	
			Decyl-dimethyl amine	2605-79-0	0.06134%	0.01790%	

			oxide				
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.02793%	0.00815%	
			Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.02186%	0.00638%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.02186%	0.00638%	
			Ethoxylated propoxylated 4-nonylphenol-formaldehyde resin	30846-35-6	0.01634%	0.00477%	
			Heavy aromatic naphtha	64742-94-5	0.01104%	0.00322%	
			Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.01082%	0.00316%	
			Alcohol, C11-14, ethoxylated	78330-21-9	0.01082%	0.00316%	
			Non-crystalline silica	7631-86-9	0.01025%	0.00299%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00802%	0.00234%	
			Cationic polymer	Proprietary	0.00602%	0.00176%	
			Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00486%	0.00142%	
			Naphtalene (impurity)	91-20-3	0.00221%	0.00064%	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00147%	0.00043%	
			Decyldimethyl amine (impurity)	1120-24-7	0.00098%	0.00029%	
			Hydrogen peroxide (impurity)	7722-84-1	0.00059%	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)