

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	3/18/2012
State:	California
County:	Kern
API Number:	0403028273
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	334-36S
Longitude:	-119.35211
Latitude:	35.27671
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	8,449
Total Water Volume (gal)*:	196,728

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
4% KCL Water	Operator				100.00%	88.71047%	Density = 8.540
CRC SAND PREMIUM	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	10.34200%	
			Hexamethylenetetramine	100-97-0	2.00%	0.20684%	
			Phenol / formaldehyde resin	9003-35-4	5.00%	0.51710%	
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	0.21121%	
SAND - COMMON WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	0.15841%	
LoSurf-300M	Halliburton	Non-ionic Surfactant	1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00122%	
			Ethanol	64-17-5	60.00%	0.07290%	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.03645%	
			Naphthalene	91-20-3	5.00%	0.00608%	

			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydr oxy-, branched	127087-87-0	5.00%	0.00608%
CAT-3 ACTIVATOR	Halliburton	Activator	EDTA/Copper chelate	Confidential Business Information	30.00%	0.00532%
VICON NF BREAKER	Halliburton	Breaker	Chlorous acid, sodium salt	7758-19-2	10.00%	0.00541%
			Sodium chloride	7647-14-5	30.00%	0.01622%
CL-28M CROSSLINKER	Halliburton	Crosslinker	Crystalline silica, quartz	14808-60-7	5.00%	0.00421%
			Borate salts	Confidential Business Information	60.00%	0.05056%
BA-40L BUFFERING AGENT	Halliburton	Buffer	Potassium carbonate	584-08-7	60.00%	0.04026%
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic acid	64-19-7	60.00%	0.00284%
			Acetic anhydride	108-24-7	100.00%	0.00473%
LGC-36 UC	Halliburton	Liquid Gel Concentrate	Guar gum	9000-30-0	60.00%	0.12874%
			Naphtha, hydrotreated heavy	64742-48-9	60.00%	0.12874%
K-38	Halliburton	Crosslinker	Disodium octaborate tetrahydrate	12008-41-2	100.00%	0.01130%
BE-3S BACTERICIDE	Halliburton	Biocide	2,2 Dibromo-3-nitrilopropionamide	10222-01-2	100.00%	0.00264%
			2-Monobromo-3-nitrilopropionamid e	1113-55-9	5.00%	0.00013%
			Crystalline silica, quartz	14808-60-7		
			Fatty alcohol polyglycol ether surfactant	9043-30-5		
			Inorganic mineral	Proprietary		
			Oxyalkylated Phenolic Resin	Confidential Business Information		
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			Polymer	Proprietary		
			Quaternary ammonium compounds, bis(hydrogenated tallow alkyl) dimethyl,salts with bentonite	68953-58-2		
			Water	7732-18-5		

* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredients Listed Below (white line). This Line Are Part of the Fluid Composition Provided by Halliburton Which Do Not Appear On the Material Safety Data Sheets (MSDS)

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