Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	9/21/2012
State:	California
County:	Kern
API Number:	0403047680
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	23-31R
Longitude:	-119.549988
Latitude:	35.27728
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	3,261
Total Water Volume (gal)*:	35,026

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
7% KCL Water	Operator				100.00%	73.13267%	Density = 8.670
SAND - PREMIUM BROWN	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	26.27305%	
LOSURF-300M™	Halliburton	Surfactant	1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00090%	
			Ethanol	64-17-5	60.00%	0.05416%	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.02708%	
			Naphthalene	91-20-3	1.00%	0.00090%	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-,branched	127087-87-0	10.00%	0.00903%	
FE-1A ACIDIZING COMPOSITION	Halliburton	Misc Additive	Acetic acid	64-19-7	60.00%	0.02590%	
			Acetic anhydride	108-24-7	100.00%	0.04317%	
MO-67	Halliburton	Buffer	Sodium hydroxide	1310-73-2	30.00%	0.01304%	
BC-140	Halliburton	Crosslinker	Ethylene glycol	107-21-1	30.00%	0.01806%	
			Monoethanolamine borate	26038-87-9	60.00%	0.03612%	
LGC-36 CBM	Halliburton	Gelling Agent	Paraffinic solvent	Confidential Business Information	60.00%	0.19854%	
GBW-30 BREAKER	Halliburton	Breaker	Hemicellulase enzyme	9012-54-8	15.00%	0.00361%	
			Carbohydrates	Confidential Business Information	95.00%	0.02288%	
BE-3S BACTERICIDE	Halliburton	Biocide	2,2 Dibromo-3-nitrilopropionamide	10222-01-2	100.00%	0.00217%	
			2-Monobromo-3-nitrilopropionamide	1113-55-9	5.00%	0.00011%	

* 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)