

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	09/26/2011
State:	California
County:	Kern
API Number:	04-030-43948
Operator Name:	Vintage Prod Of Cal
Well Name and Number:	Farmland Reserve 21-2H
Longitude:	-119.280677
Latitude:	35.56149
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	7,695
Total Water Volume (gal)*:	549,528

## 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
Water	Operator	Carrier	Water	7732-18-5	100.00%	80.46689%	0
Alpha 125	BHI	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00654%	0
Enzyme G-I	BHI	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00486%	0
0	0	0	Water	7732-18-5	97.00%	0.15709%	0
BC-3	BHI	Breaker Catalyst	Non-Hazardous Ingredient	N.A.	100.00%	0.02479%	0
BF-7L, Tote	BHI	Buffer	Potassium Carbonate	584-08-7	50.00%	0.16508%	0
XLW-56, 330 gal tote	BHI	Crosslinker	D-Glucitol	50-70-4	10.00%	0.01798%	0
0	0	0	Glyoxal	107-22-2	30.00%	0.05393%	0
0	0	0	Sodium Hydroxide	1310-73-2	5.00%	0.00899%	0
0	0	0	Sodium Tetraborate	1330-43-4	10.00%	0.01798%	0
GLFC-1B	BHI	Gelling Agent	Alkanes / Alkenes	Multiple	45.00%	0.28965%	0
0	0	0	Guar Gum	9000-30-0	50.00%	0.32184%	0
Sand, White, 20/40	BHI	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	18.04100%	0
Sand, White, 100 mesh	BHI	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.21074%	0
InFlo 250W	BHI	Surfactant	2-Butoxyethanol	111-76-2	20.00%	0.03271%	0
0	0	0	Methanol	67-56-1	30.00%	0.04907%	0

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

