

Hydraulic Fracturing Fluid Product Component Information Disclosure

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|-----------------------------------|----------------------------|
| Last Fracture Date | 05/28/2012 |
| State: | California |
| County: | Kern |
| API Number: | 04-030-46403 |
| Operator Name: | Vintage Prod Of Cal |
| Well Name and Number: | Blaze 4H |
| Longitude: | -119.27705 |
| Latitude: | 35.53706 |
| Long/Lat Projection: | NAD27 |
| Production Type: | Oil |
| True Vertical Depth (TVD): | 7,823 |
| Total Water Volume (gal)*: | 433,524 |

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% | 75.13858% | |
| Alpha 125 | Baker Hughes | Biocide | Glutaraldehyde | 111-30-8 | 30.00% | 0.00664% | SmartCare Product |
| Enzyme G-I | Baker Hughes | Breaker | Hemicellulase Enzyme Concentrate | 9025-56-3 | 3.00% | 0.00401% | SmartCare Product |
| | | | Water | 7732-18-5 | 97.00% | 0.12979% | |
| BC-3 | Baker Hughes | Breaker Catalyst | No Hazardous Ingredients | Trade Secret | 100.00% | 0.02632% | |
| BF-7L | Baker Hughes | Buffer | Potassium Carbonate | 584-08-7 | 60.00% | 0.25922% | SmartCare Product |
| | | | Potassium Hydroxide | 1310-58-3 | 1.00% | 0.00432% | |
| | | | Water | 7732-18-5 | 60.00% | 0.25922% | |
| XLW-56, 330 gal tote | Baker Hughes | Crosslinker | D-Glucitol | 50-70-4 | 10.00% | 0.02031% | |
| | | | Glyoxal | 107-22-2 | 30.00% | 0.06092% | |
| | | | Sodium Hydroxide | 1310-73-2 | 5.00% | 0.01015% | |
| | | | Sodium Tetraborate | 1330-43-4 | 10.00% | 0.02031% | |
| GLFC-1B | Baker Hughes | Gelling Agent | Alkanes / Alkenes | Multiple | 45.00% | 0.26569% | |
| | | | Guar Gum | 9000-30-0 | 50.00% | 0.29521% | |
| Sand, White, 20/40 | Baker Hughes | Proppant | Crystalline Silica (Quartz) | 14808-60-7 | 100.00% | 18.53771% | |
| Sand, White, 100 mesh | Baker Hughes | Proppant | Crystalline Silica (Quartz) | 14808-60-7 | 100.00% | 0.44277% | |
| Super LC, 20/40 | Baker Hughes | Proppant | Hexamethylenetetramine | 1009-7-0 | 0.01% | 0.00042% | |
| | | | P/F Resin | 9003-35-4 | 5.00% | 0.21022% | |

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|---|--------------|------------|--|--------------|--------|---------------|-------------------|
| | | | Silicon Dioxide (Silica Sand) | 14808-60-7 | 97.00% | 4.07831% | |
| GasFlo G, 330 gal tote | Baker Hughes | Surfactant | Methanol | 67-56-1 | 30.00% | 0.04005% | SmartCare Product |
| | | | Mixture of Surfactants | Trade Secret | 60.00% | 0.08010% | |
| | | | Water | 7732-18-5 | 50.00% | 0.06675% | |
| Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS. | | | | | | | |
| | | | Acetyl Triethyl Citrate | 77-89-4 | | 0.0263229735% | |
| | | | Crystalline Silica | 14808-60-7 | | | |
| | | | Ethylene Glycol Monobutyl Ether | 111-76-2 | | | |
| | | | Methanol | 67-56-1 | | 0.0000553610% | |
| | | | Poly (oxy-1,2-ethanediyl) | 24938-91-8 | | | |
| | | | Quaternary Ammonium Compounds bis[Hydrogenated Tallow Alkyl] Dimethyl Salts With Bentonite | 68953-58-2 | | | |
| | | | Sodium Bicarbonate | 144-55-8 | | | |
| | | | Water | 7732-18-5 | | 0.0166082933% | |
| <p>* Total Water Volume sources may include fresh water, produced water, and/or recycled water</p> <p>** Information is based on the maximum potential for concentration and thus the total may be over 100%</p> <p>Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)</p> | | | | | | | |