Hydraulic Fracturing Fluid Product Component Information Disclosure

| Fracture Date | 12/15/2011 |
|----------------------------|---------------------|
| State: | California |
| County: | Kern |
| API Number: | 04-030-37933 |
| Operator Name: | Vintage Prod Of Cal |
| Well Name and Number: | Bear Mountain 1-17 |
| Longitude: | -119.20907 |
| Latitude: | 35.23054 |
| Long/Lat Projection: | NAD27 |
| Production Type: | Oil |
| True Vertical Depth (TVD): | 11,523 |
| Total Water Volume (gal)*: | 80,052 |

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% | 84.91775% | 0 |
| Alpha 125 | Baker Hughes | Biocide | Glutaraldehyde | 111-30-8 | 30.00% | 0.02200% | SmartCare Product |
| Enzyme G-I | Baker Hughes | Breaker | Hemicellulase Enzyme Concentrate | 9025-56-3 | 3.00% | 0.01139% | SmartCare Product |
| 0 | 0 | 0 | Water | 7732-18-5 | 97.00% | 0.36837% | 0 |
| High Perm CRB | Baker Hughes | Breaker | Ammonium Persulphate | 7727-54-0 | 100.00% | 0.00382% | SmartCare Product |
| 0 | 0 | 0 | Crystalline Silica Quartz | 14808-60-7 | 15.00% | 0.00057% | 0 |
| BC-3 | Baker Hughes | Breaker Catalyst | Non-Hazardous Ingredient | Trade Secret | 100.00% | 0.00583% | 0 |
| Caustic Liquid, 25% Solution | Baker Hughes | Buffer | Sodium Hydroxide | 1310-73-2 | 25.00% | 0.01542% | 0 |
| 0 | 0 | 0 | Water | 7732-18-5 | 75.00% | 0.04625% | 0 |
| BF-7L | Baker Hughes | Buffer | Potassium Carbonate | 584-08-7 | 50.00% | 0.44940% | SmartCare Product |
| XLW-56 | Baker Hughes | Crosslinker | D-Glucitol | 50-70-4 | 10.00% | 0.06318% | 0 |
| 0 | 0 | 0 | Glyoxal | 107-22-2 | 30.00% | 0.18955% | 0 |
| 0 | 0 | 0 | Sodium Hydroxide | 1310-73-2 | 5.00% | 0.03159% | 0 |
| 0 | 0 | 0 | Sodium Tetraborate | 1330-43-4 | 10.00% | 0.06318% | 0 |
| GLFC-1B | Baker Hughes | Gelling Agent | Alkanes / Alkenes | Multiple | 45.00% | 0.46971% | 0 |
| 0 | 0 | 0 | Guar Gum | 9000-30-0 | 50.00% | 0.52189% | 0 |
| Sand, White, 100 mesh | Baker Hughes | Proppant | Crystalline Silica (Quartz) | 14808-60-7 | 100.00% | 0.38168% | 0 |
| Econoprop, 30/50 | Baker Hughes | Proppant | Mullite | 1302-76-7 | 70.00% | 8.95211% | 0 |
| 0 | 0 | 0 | Silicon Dioxide (Crystalline) | 60676-86-0 | 25.00% | 3.19718% | 0 |
| GasFlo G, 330 gal | Baker | Surfactant | Methanol | 67-56-1 | 30.00% | 0.05421% | SmartCare Product |

| tote | Hughes | | | | | | |
|------------------------|--------|---|--|--------------|--------|----------|---|
| 0 | 0 | 0 | Surfactants | Trade Secret | 60.00% | 0.10842% | 0 |
| 0 | 0 | 0 | Water | 7732-18-5 | 70.00% | 0.12649% | 0 |
| Additional Ingredients | | | | | | | |
| | | | Acetyl Triethyl Citrate | 77-89-4 | | | |
| | | | Crystalline Silica | 14808-60-7 | | | |
| | | | Crystalline Silica: Cristobalite | 14464-46-1 | | | |
| | | | Cured Acrylic Resin | Trade Secret | | | |
| | | | Ethylene Glycol Monobutyl Ether | 111-76-2 | | | |
| | | | Methanol | 67-56-1 | | | |
| | | | Poly (oxy-1,2-ethanediyl) | 24938-91-8 | | | |
| | | | Quaternary Ammonium Compounds bis[Hydrogenated Tallow Alkyl] Dimethyl Salts With Bentonite | 68953-58-2 | | | |
| | | | Silica | 7631-86-9 | | | |
| | | | Sodium Bicarbonate | 144-55-8 | | | |
| | | | Water | 7732-18-5 | | | |

^{*} Total Water Volume sources may include fresh water, produced water, and/or recycled water

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

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