

Hydraulic Fracturing Fluid Product Component Information Disclosure

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|-----------------------------------|----------------------------|
| Last Fracture Date | 10/13/2012 |
| State: | California |
| County: | Kern |
| API Number: | 04-030-48153 |
| Operator Name: | Vintage Prod Of Cal |
| Well Name and Number: | Paloma 31-11 |
| Longitude: | -119.15874 |
| Latitude: | 35.16524 |
| Long/Lat Projection: | NAD27 |
| Production Type: | Oil |
| True Vertical Depth (TVD): | 12,075 |
| Total Water Volume (gal)*: | 193,662 |

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% | 78.49869% | |
| HCl, 10.1 - 15% | Baker Hughes | Acidizing | Hydrochloric Acid | 7647-01-0 | 15.00% | 0.19034% | |
| | | | Water | 7732-18-5 | 85.00% | 1.07860% | |
| 12% HCl - 3% HF (ABF30) | Baker Hughes | Acidizing | Hydrochloric Acid | 7647-01-0 | 12.00% | 0.29190% | |
| | | | Hydrofluoric Acid | 7664-39-3 | 3.00% | 0.07298% | |
| One Shot Acid Plus | Baker Hughes | Acidizing | Ethylbenzene | 100-41-4 | 8.00% | 0.10113% | |
| | | | Hydrochloric Acid (15% solution) | 7647-01-0 | 90.00% | 1.13772% | |
| | | | Xylene | 1330-20-7 | 30.00% | 0.37924% | |
| Alpha 125 | Baker Hughes | Biocide | Glutaraldehyde | 111-30-8 | 30.00% | 0.00488% | SmartCare Product |
| Enzyme G-I | Baker Hughes | Breaker | Hemicellulase Enzyme Concentrate | 9025-56-3 | 3.00% | 0.00501% | SmartCare Product |
| | | | Water | 7732-18-5 | 97.00% | 0.16199% | |
| High Perm CRB | Baker Hughes | Breaker | Ammonium Persulphate | 7727-54-0 | 60.00% | 0.00875% | SmartCare Product |
| | | | Crystalline Silica Quartz | 14808-60-7 | 30.00% | 0.00438% | |
| BF-7L | Baker Hughes | Buffer | Potassium Carbonate | 584-08-7 | 60.00% | 0.59968% | SmartCare Product |
| | | | Potassium Hydroxide | 1310-58-3 | 1.00% | 0.00999% | |
| | | | Water | 7732-18-5 | 60.00% | 0.59968% | |
| Clay Master-5C | Baker | Clay Control | Oxyakylated Amine Quat | 138879-94-4 | 60.00% | 0.05538% | |

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|------------------------------------|--------------|---------------------|-----------------------------------|--------------|---------|-----------|-------------------|
| (Tote) | Hughes | | | | | | |
| CI-31, 330 gal. tote | Baker Hughes | Corrosion Inhibitor | Aromatic Aldehyde | Trade Secret | 30.00% | 0.00742% | |
| | | | Benzyl Chloride | 100-44-7 | 1.00% | 0.00025% | |
| | | | Cyclic Alkanes | Trade Secret | 5.00% | 0.00124% | |
| | | | Formic Acid | 64-18-6 | 60.00% | 0.01485% | |
| | | | Isopropanol | 67-63-0 | 10.00% | 0.00247% | |
| | | | Methanol | 67-56-1 | 5.00% | 0.00124% | |
| | | | Organic Sulfur Compound | Trade Secret | 5.00% | 0.00124% | |
| | | | Oxyalkylated Fatty Acid | Trade Secret | 30.00% | 0.00742% | |
| | | | Quaternary Ammonium Compound | Trade Secret | 30.00% | 0.00742% | |
| XLW-56, 330 gal tote | Baker Hughes | Crosslinker | D-Glucitol | 50-70-4 | 10.00% | 0.04358% | |
| | | | Glyoxal | 107-22-2 | 30.00% | 0.13075% | |
| | | | Sodium Hydroxide | 1310-73-2 | 5.00% | 0.02179% | |
| | | | Sodium Tetraborate | 1330-43-4 | 10.00% | 0.04358% | |
| FRW-16A (tote) | Baker Hughes | Friction Reducer | Non-Hazardous Ingredient | Trade Secret | 100.00% | 0.01686% | SmartCare Product |
| GW-4LBF | Baker Hughes | Gelling Agent | Guar Gum | 9000-30-0 | 60.00% | 0.44859% | SmartCare Product |
| | | | Paraffinic Petroleum Distillate | 64742-55-8 | 60.00% | 0.44859% | |
| | | | Petroleum Distillate | 64742-47-8 | 60.00% | 0.44859% | |
| Hy Temp O Intensifier | Baker Hughes | Intensifier | Formic Acid | 64-18-6 | 98.00% | 0.02670% | SmartCare Product |
| Ferrotrol 300L (Totes) | Baker Hughes | Iron Control | Citric Acid | 77-92-9 | 60.00% | 0.01716% | SmartCare Product |
| Ferrotrol 210 | Baker Hughes | Iron Control | Erythorbic Acid | 89-65-6 | 100.00% | 0.00389% | SmartCare Product |
| NE-118, 55 gal drum | Baker Hughes | Non-emulsifier | 1,2,4-Trimethylbenzene | 95-63-6 | 5.00% | 0.00014% | |
| | | | Isopropanol | 67-63-0 | 100.00% | 0.00279% | |
| | | | Light Aromatic Naphtha | 64742-95-6 | 5.00% | 0.00014% | |
| | | | Polyoxyalkylenes | Trade Secret | 5.00% | 0.00014% | |
| Parasorb 5005, 50 lb bag | Baker Hughes | Paraffin Inhibitor | Calcined Diatomaceous Earth | 91053-39-3 | 100.00% | 0.14584% | SmartCare Product |
| | | | Complex Ester | Trade Secret | 30.00% | 0.04375% | |
| | | | Crystalline Silica: Quartz (SiO2) | 14808-60-7 | 1.00% | 0.00146% | |
| | | | Ethylene-Vinyl Acetate Copolymer | Trade Secret | 5.00% | 0.00729% | |
| | | | Heavy Aromatic Naphtha | 64742-94-5 | 10.00% | 0.01458% | |
| | | | Mineral Oil | 8042-47-5 | 5.00% | 0.00729% | |
| | | | Naphthalene | 91-20-3 | 1.00% | 0.00146% | |
| Prime Plus, 30/50 | Baker Hughes | Proppant | Quartz (SiO2) | 14808-60-7 | 100.00% | 13.96794% | |
| SinterBlast Bauxite, 40/120, 3300# | Baker Hughes | Proppant | Alfa-Alumina | 1344-28-1 | 100.00% | 0.29169% | |
| | | | Hematite | 1317-60-8 | 15.00% | 0.04375% | |
| | | | Maghemite | 1309-38-2 | 2.00% | 0.00583% | |
| Ammonium Chloride, bulk | Baker Hughes | Salts | Ammonium Chloride | 12125-02-9 | 100.00% | 0.28780% | |

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|---|--------------|------------|------------------------------|--------------|---------|---------------|-------------------|
| Xylene | Baker Hughes | Solvent | Ethylbenzene | 100-41-4 | 30.00% | 0.01588% | |
| | | | Xylene | 1330-20-7 | 100.00% | 0.05293% | |
| GasFlo G, 330 gal tote | Baker Hughes | Surfactant | Methanol | 67-56-1 | 30.00% | 0.02323% | SmartCare Product |
| | | | Mixture of Surfactants | Trade Secret | 60.00% | 0.04647% | |
| | | | Water | 7732-18-5 | 50.00% | 0.03872% | |
| 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. | | | | | | | |
| | | | 1,2,3 - Trimethylbenzene | 526-73-8 | | 0.0000111549% | |
| | | | 1,3,5 - Trimethylbenzene | 108-67-8 | | 0.0000223098% | |
| | | | 2-Mercaptoethyl Alcohol | 60-24-2 | | 0.0008659652% | |
| | | | Alkylaryl Sulfonate | 68584-27-0 | | 0.0000055775% | |
| | | | Alkylene Oxide Block Polymer | Trade Secret | | 0.0009896745% | |
| | | | Cumene | 98-82-8 | | 0.0000027887% | |
| | | | Cured Acrylic Resin | Trade Secret | | 0.0043753118% | |
| | | | Diethylene Glycol | 111-46-6 | | 0.0000247419% | |
| | | | Methanol | 67-56-1 | | 0.0000406603% | |
| | | | Naphthalene | 91-20-3 | | 0.0000002789% | |
| | | | Potassium Hydroxide | 1310-58-3 | | 0.0000013944% | |
| | | | Quaternary Ammonium Compound | Trade Secret | | 0.0011133838% | |
| | | | Sodium Bicarbonate | 144-55-8 | | 0.0747643073% | |
| | | | Water | 7732-18-5 | | 0.0246798203% | |
| | | | Xylene | 1330-20-7 | | 0.0000055775% | |
| <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> | | | | | | | |