Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	06/22/2011
State:	California
County:	Kern
API Number:	04-030-43346
Operator Name:	Vintage Prod Of Cal
Well Name and Number:	Tulare 3-18H
Longitude:	-119.27588899
Latitude:	35.53005425
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	8,488
Total Water Volume (gal)*:	534,492

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%	82.86467%	0
12% HCI - 3% HF (ABF30)	Baker Hughes	Acidizing	Hydrochloric Acid	7647-01-0	12.00%	0.08932%	0
0	0	0	Hydrofluoric Acid	7664-39-3	3.00%	0.02233%	0
Superset-W, 55 gal drum	Baker Hughes	Activator	Methanol	67-56-1	50.00%	0.03125%	0
0	0	0	Poly (Oxyethylene) Nonylphenol Ether	9016-45-9	50.00%	0.03125%	0
X-Cide 207	Baker Hughes	Biocide	2-Methyl-4-Isothiazolin-3-One	2682-20-4	5.00%	0.00010%	0
0	0	0	5-Chloro-2-Methyl-4-Isothiazolin-3-One	26172-55-4	10.00%	0.00020%	0
0	0	0	Crystalline Silica: Cristobalite	14464-46-1	1.00%	0.00002%	0
0	0	0	Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00002%	0
0	0	0	Diatomaceous Earth, Calcined	91053-39-3	60.00%	0.00120%	0
0	0	0	Magnesium Chloride	7786-30-3	5.00%	0.00010%	0
0	0	0	Magnesium Nitrate	10377-60-3	10.00%	0.00020%	0
Alpha 125	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00599%	0
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00667%	0
0	0	0	Water	7732-18-5	97.00%	0.21580%	0
BC-3	Baker Hughes	Breaker Catalyst	Non-Hazardous Ingredient	N.A.	100.00%	0.02693%	0
BF-7L, Tote	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	50.00%	0.31396%	0

Clay Master-5C	Baker Hughes	Clay Control	Oxyakylated Amine Quat	138879-94-4	60.00%	0.05817%	0
CI-27	Baker Hughes	Corrosion Inhibitor	Alkenes^ C>10 Alpha-	64743-02-8	5.00%	0.00014%	0
0	0	0	Ethoxylated Alcohols^ C14-15	68951-67-7	30.00%	0.00084%	0
0	0	0	Methanol	67-56-1	60.00%	0.00168%	0
0	0	0	Propargyl Alcohol	107-19-7	10.00%	0.00028%	0
0	0	0	Tall Oil Acid	61790-12-3	30.00%	0.00084%	0
0	0	0	Thiourea Polymer	68527-49-1	30.00%	0.00084%	0
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.02269%	0
0	0	0	Glyoxal	107-22-2	30.00%	0.06808%	0
0	0	0	Sodium Hydroxide	1310-73-2	5.00%	0.01135%	0
0	0	0	Sodium Tetraborate	1330-43-4	10.00%	0.02269%	0
XLW-32	Baker Hughes	Crosslinker	Boric Oxide	1303-86-2	20.00%	0.00475%	0
0	0	0	Methanol	67-56-1	90.00%	0.02136%	0
FRW-16A (drum)	Baker Hughes	Friction Reducer	Non-Hazardous Ingredient	N.A.	100.00%	0.02989%	0
GLFC-1B	Baker Hughes	Gelling Agent	Alkanes / Alkenes	Multiple	45.00%	0.33884%	0
0	0	0	Guar Gum	9000-30-0	50.00%	0.37649%	0
GW-3LDF	Baker Hughes	Gelling Agent	Guar Gum	9000-30-0	40.00%	0.09889%	0
0	0	0	Petroleum Distillate Blend	CBI	70.00%	0.17306%	0
Ferrotrol 300L	Baker Hughes	Iron Control	Citric Acid	77-92-9	70.00%	0.00889%	0
Ferrotrol 210	Baker Hughes	Iron Control	Erythorbic Acid	89-65-6	100.00%	0.00112%	0
NE-118, 330 gal tote	Baker Hughes	Non-emulsifier	Aromatic Hydrocarbon Solvent	64742-94-5	35.00%	0.00023%	0
0	0	0	Isopropyl Alcohol	67-63-0	65.00%	0.00043%	0
0	0	0	Naphthalene	91-20-3	5.00%	0.00003%	0
0	0	0	Xylene	1330-20-7	5.00%	0.00003%	0
Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	8.30676%	0
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.17664%	0
Sand, Brown, 30/70	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.44626%	0
SinterBlast Bauxite, 40/120, bulk	Baker Hughes	Proppant	Alfa-Alumina	1344-28-1	100.00%	0.12272%	0
0	0	0	Hematite	1317-60-8	15.00%	0.01841%	0
0	0	0	Maghemite	1309-38-2	2.00%	0.00245%	0
Super LC, 20/40	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00057%	0
0	0	0	P/F Resin	9003-35-4	5.00%	0.28269%	0
0	0	0	Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	5.48413%	0
InFlo 250W	Baker Hughes	Surfactant	2-Butoxyethanol	111-76-2	20.00%	0.04735%	0

0	0	0	Methanol	67-56-1	30.00%	0.07102%	0
0	0	0	Surfactants	CBI	80.00%	0.18939%	0

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

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.

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