

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	07/17/2012
State:	California
County:	Kern
API Number:	04-030-47970
Operator Name:	Vintage Prod Of Cal
Well Name and Number:	Twisselman 23-14W
Longitude:	-119.69065
Latitude:	35.4036
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	6,620
Total Water Volume (gal)*:	136,584

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%	80.13654%	
Alpha 125	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00558%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00206%	SmartCare Product
			Water	7732-18-5	97.00%	0.06659%	
High Perm CRB	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	60.00%	0.00253%	SmartCare Product
			Crystalline Silica Quartz	14808-60-7	30.00%	0.00127%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.03125%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.08785%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00146%	
			Water	7732-18-5	60.00%	0.08785%	
Clay Master-5C (Tote)	Baker Hughes	Clay Control	Oxyakylated Amine Quat	138879-94-4	60.00%	0.05815%	
XLW-32, 260 gal tote	Baker Hughes	Crosslinker	Boric Acid (H3BO3)	10043-35-3	30.00%	0.01833%	
			Methanol	67-56-1	60.00%	0.03666%	
			Methyl Borate	121-43-7	30.00%	0.01833%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.02357%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.02357%	

[illegible]