

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	4/22/2011
State:	Colorado
County:	Weld
API Number:	05-123-26124
Operator Name:	Encana Oil & Gas (USA) Inc.
Well Name and Number:	Aristocrat Angus 6-8-4
Longitude:	-104.665573
Latitude:	40.248762
Long/Lat Projection:	NAD83
Production Type:	Gas
True Vertical Depth (TVD):	7,765
Total Water Volume (gal)*:	248,514

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	Ensign Well Services Inc	Base Fluid	Water		100.00%	79.93159%	Fresh
Frac Sand (All Meshes)	BJ Services Company	Proppant	Crystalline silica (quartz)	14808-60-7	99.90%	19.24586%	
BC-3	BJ Services Company	Breaker catalyst	Non-hazardous		100.00%	0.05072%	
BF-9L	BJ Services Company	Buffer	Potassium hydroxide	1310-58-3	15.00%	0.00287%	
Flo-Back 40	BJ Services Company	Surfactant	Amphoteric surfactant	NA	100.00%	0.07856%	% Proprietary
NE-940	BJ Services Company	Non-emulsifier	Methanol	67-56-1	60.00%	0.01172%	
			2-ethylhexanol	104-76-7	10.00%	0.00195%	
			Isopropanol	67-63-0	10.00%	0.00195%	
			Heavy aromatic naphtha	64742-94-5	5.00%	0.00098%	
			Polyethylene glycol	25322-68-3	5.00%	0.00098%	
			EO-C7-9-iso-, C8 rich-alcohols	78330-19-5	5.00%	0.00098%	
			EO-C9-11-iso-, C10-rich alcohols	78330-20-8	5.00%	0.00098%	
			Naphthalene	91-20-3	1.00%	0.00020%	
GBW-21	BJ Services Company	Breaker - Water	Magnesium Peroxide	014452-57-4	30.00%	0.00174%	
			Magnesium oxide	001309-48-4	60.00%	0.00347%	
GBW-5	BJ Services Company	Breaker - Water	Ammonium persulfate	7727-54-0	100.00%	0.00309%	
GW-45LF	BJ Services Company	Gellant - Water	Carboxymethyl guar gum, sodium salt	39346-76-4	50.00%	0.21799%	
			Hydrotreated light distillate	64742-47-8	100.00%	0.43597%	
High Perm CRB	BJ Services Company	Breaker - Water	Ammonium persulphate	7727-54-0	100.00%	0.01196%	

			Crystalline silica quartz	14808-60-7	15.00%	0.00179%	
XLW-14	BJ Services Company	Crosslinker	Triethanolamine	102-71-6	65.00%	0.04882%	
			N-propanol	71-23-8	22.00%	0.01652%	
			N-propyl zirconate	N.E.	18.00%	0.01352%	
Clay Treat-3C	BJ Services Company	Clay Control - KCl sub	Tetramethyl ammonium chloride	75-57-0	60.00%	0.04920%	
FRW-14	BJ Services Company	Friction Reducer	Hydrotreated light distillate	64742-47-8	40.00%	0.00283%	
			Ethoxylated alcohol	68439-50-9	5.00%	0.00035%	
GS-1A	BJ Services Company	Gel stabilizer	No hazardous ingredients	N.A.	100.00%	0.00193%	% N.A.
XLW- 22C	BJ Services Company	Crosslinker	Triisopropanolamine	122-20-3	7.00%	0.00087%	
			Ammonium hydroxide	1336-21-6	5.00%	0.00062%	
			Zirconium sodium hydroxy lactate complex	113184-20-6	60.00%	0.00748%	

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

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

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.