

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	3/22/2012
State:	CO
County:	WELD
API Number:	05-123-34485
Operator Name:	KerrMcGee
Well Name and Number:	CAMP 28N-E25HZ
Longitude:	-104.7228933
Latitude:	40.19111709
Long/Lat Projection:	NAD83
Production Type:	Gas
True Vertical Depth (TVD):	7,271
Total Water Volume (gal)*:	2,930,453

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
BA-40L	Halliburton	Buffering Agent	Potassium carbonate	584-08-7	60.00%	0.06604%	
Cat-3	Halliburton	Activator	EDTAchelate	N.E.	30.00%	0.00350%	
Cat-4	Halliburton	Activator	Diethylenetriamine	111-40-0	60.00%	0.00404%	
CL-23	Halliburton	Crosslinker	Zirconium complex		60.00%	0.00193%	
			Ammonium Chloride	12125-02-9	27.00%	0.00087%	
CL-37	Halliburton	Crosslinker	Triethanolamine zirconate	101033-44-7	100.00%	0.02250%	
			Propanol	71-23-8	30.00%	0.00675%	
			Glycerine	56-81-5	30.00%	0.00675%	
Claycare	Baker Hughes	KCl substitute	Water	007732-18-5	30.00%	0.03676%	
			Choline Chloride	000067-48-1	75.00%	0.09191%	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.01433%	
Frac-cide 1000	Baker Hughes	Biocide	Water	007732-18-5	5.00%	0.00008%	
			2,2-dibromo-3-nitrilopropionamide	010222-01-2	100.00%	0.00158%	
GASPERM 1100	Halliburton	Non-ionic Surfactant	Terpenes and Terpenoids, sweet orange-oil	68647-72-3	5.00%	0.00847%	
			Ethanol	64-17-5	60.00%	0.10169%	
Resin Coated Sand	Halliburton	Propping Agent	Crystalline silica (Quartz)	14808-60-7	100.00%	0.58178%	
Sand (Proppant)	Halliburton	Propping Agent	Crystalline silica (Quartz)	14808-60-7	99.90%	11.52247%	
SP Breaker	Halliburton	Gel Breaker	Sodium persulfate	7775-27-1	100.00%	0.00016%	
SpectraFlood Tracer IWT-2000	CoreLab	Fluid Tracer	Water	7732-18-5	90.00%	0.02081%	
			Proprietary Ingredient	Proprietary	10.00%	0.00231%	
Vicon NF	Halliburton	Gel Breaker	Sodium chloride	7647-14-5	30.00%	0.07750%	
			Chlorous acid, sodium salt	7758-19-2	10.00%	0.02583%	
Water	Anadarko	Base Carrier Fluid	Water		100.00%	86.96642%	
WG-18	Halliburton	Gelling agent	Guar gum derivative		100.00%	0.14063%	

* 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%

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