

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/30/2014
Job End Date:	10/31/2014
State:	Oklahoma
County:	Carter
API Number:	35-019-26125-00-00
Operator Name:	Citation Oil and Gas Corp.
Well Name and Number:	Wildcat Jim Unit #64A
Longitude:	-97.44280040
Latitude:	34.39381121
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	3,100
Total Base Water Volume (gal):	37,305
Total Base Non Water Volume:	0



## 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
SAND	BADGER MINING	PROPPANT	SILICA	14808-60-7	100.00000	12.52439	
XYLENE	VALLEY SOLVENTS	SOLVENT	XYLENE - ALL ISOMERS	1330-20-7	100.00000	0.89236	
			ETHYLBENZENE	100-41-4	30.00000	0.26771	
			TOLUENE	108-88-3	1.00000	0.00892	
GA-40 W	CESI	GELLING AGENT	GUAR	9000-30-0	100.00000	0.39825	
KCL-CLAYMAX	CHEMPLEX	CLAY STABILIZER	WATER	7732-18-5	60.00000	0.15029	
			CHOLINE CHLORIDE	67-48-1	30.00000	0.07515	
MA-844	CESI	COMPLEX NANO FLUID	CITRUS TERPENES	94266-47-4	60.00000	0.06249	
			SURFACTANTS	NA	50.00000	0.05208	
			ISOPROPANOL	67-63-0	50.00000	0.05208	
			WATER	7732-18-5	20.00000	0.02083	
			TRIETHYLENE GLYCOL	112-27-6	10.00000	0.01042	
NEC-15	CESI	CLAY CONTROL	WATER	7732-18-5	70.00000	0.07890	

			ETHYLENE GLYCOL	107-21-1	50.00000	0.05636
			QUATERNARY AMINE COMPOUNDS	NA	15.00000	0.01691
			POLYIMINE	NA	15.00000	0.01691
			BENZYL CHLORIDE	100-44-7	9.00000	0.01014
			ISOPROPANOL	67-63-0	5.00000	0.00564
AEP-20	CESI	NON-EMULSIFIER				
			WATER	7732-18-5	60.00000	0.06431
			POLYMER	NA	30.00000	0.03215
			ISOPROPANOL	67-63-0	30.00000	0.03215
			ETHANOL	64-17-5	30.00000	0.03215
			ETHOXYLATE NONYLPHENOL	9016-45-9	10.00000	0.01072
			METHANOL	67-56-1	5.00000	0.00536
			METHYL ISOBUTYL KETONE	108-10-1	0.50000	0.00054
CL-142	CESI	CROSSLINKER				
			WATER	7732-18-5	60.00000	0.05849
			ETHYLENE GLYCOL	107-21-1	50.00000	0.04874
			BORATE	12280-03-4	30.00000	0.02924
			ETHANOLAMINE	141-43-5	10.00000	0.00975
CA2-ACTIVATOR	FRITZ INDUSTRIES	RESIN ACTIVATOR				
			DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	100.00000	0.04786
GB-102	CESI	GELL BREAKER				
			WATER	7732-18-5	90.00000	0.01141
			SODIUM CHLORIDE	7647-14-5	20.00000	0.00254
			ENZYME	NA	1.00000	0.00013
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.						
WATER	CUSTOMER SUPPLIED	CARRIER				
			WATER	7732-18-5	100.00000	85.45245

\* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

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