

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/4/2013
Job End Date:	3/6/2013
State:	Texas
County:	Reagan
API Number:	42-383-38147-00-00
Operator Name:	Laredo Petroleum, Inc.
Well Name and Number:	Sugg B 134E
Longitude:	-101.37453000
Latitude:	31.52966940
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	1,854,885
Total Base Non Water Volume:	



## 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	Laredo Petroleum, Inc.	Carrier/Base Fluid	H2O	7732-18-5	100.00000	91.68452	
Ottawa Sand 30/50 (2.63 sg)	WFT	Proppant	Crystalline Silica in the form of Quartz	14808-60-7	100.00000	5.46742	
100 Mesh Sand	WFT	Proppant	Crystalline Silica in the form of Quartz	14808-60-7	100.00000	0.89434	
Atlas CRC 30/50	WFT	Proppant	Quartz (SiO2) (Crystalline Silica)	14808-60-7	98.00000	0.52953	
			Phenolic Resin	9003-35-4	5.00000	0.02702	
			Hexamethylenetetramine	100-97-0	1.00000	0.00540	
15% HCL	WFT	Acid	Hydrochloric Acid	7647-01-1	15.00000	0.17039	
CLO2	Bosque	Oxidizing Agent	Water	7732-18-5	76.00000	0.07382	
			Sodium Chlorite	7758-19-2	25.00000	0.02173	
			Sodium Chloride	7647-14-5	3.00000	0.00294	
WNE-363L	WFT	Surfactant	DB-964	9003-11-6	30.00000	0.01426	

			Dodecylbenzenesulfonic acid, monoethanolamine salt	26836-07-7	15.00000	0.00713	
			2-Ethylhexanol	104-76-7	7.00000	0.00333	
			Poly(oxy-1,2-ethanedlyl), a- isotridecyl-w-hydroxy-	9043-30-5	5.00000	0.00238	
FSI 2175	MID-CHEM	Scale Inhibitor					
			Tetrakis Hydroxymethyl Phosphonium Sulfate	55566-30-8	9.00000	0.00368	
WAI-251LC	WFT	Inhibitor					
			Ethylene Glycol	111-76-2	40.00000	0.00085	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00042	
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	10.00000	0.00021	
			2-Butoxyethanol	111-76-2	10.00000	0.00021	
			1-Decanol	112-30-1	5.00000	0.00011	
			1-Octanol	111-87-5	5.00000	0.00011	
			Isopropyl Alcohol	67-63-0	5.00000	0.00011	
			Ethoxylated Nonylphenol	68412-54-4	5.00000	0.00011	
			Triethylphosphate	78-40-0	5.00000	0.00011	
WIC-641L	WFT	Iron Control					
			Citric Acid	77-92-9	60.00000	0.00147	
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.							
Fluid Composition	WFT	Miscellaneous					
			Proprietary Ingredient	Proprietary		0.09832	
			Choline Chloride	67-48-1		0.07172	
			Anionic water soluble polymer	NA		0.03687	
			Cinnamaldehyde	104-55-2		0.00011	
			Ethylene Oxide	75-21-8		0.00002	
			Acetaldehyde	75-07-0		0.00002	
			Dioxane	123-91-1		0.00002	

\* 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)