

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/20/2016
Job End Date:	11/6/2016
State:	Texas
County:	Andrews
API Number:	42-003-47354-00-00
Operator Name:	Pioneer Natural Resources
Well Name and Number:	UNIVERSITY 7-43 46H
Latitude:	32.34172200
Longitude:	-102.24028200
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	9,539
Total Base Water Volume (gal):	18,846,240
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
Water	Pioneer Natural Resources	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	91.20884	
SAND (WHOLE GRAIN)	Pioneer Natural Resources Pumping Services LLC	Proppant					
			Crystalline Silica Quartz	14808-60-7	99.50000	6.68130	
Crystalline Silica in the form of Quartz - various grades	Pioneer Natural Resources Pumping Services LLC	Proppant					
			Crystalline Silica	14808-60-7	99.90000	1.52947	
Silica Sand	Pioneer Natural Resources Pumping Services LLC	Proppant					
			Crystalline Silica	14808-60-7	99.90000	0.20238	
			Aluminum oxide	1344-28-1	0.80000	0.00162	
			Titanium Oxide	13463-67-7	0.10000	0.00020	
			Iron oxide	1309-37-1	0.10000	0.00020	
Hydrochloric Acid, 33-40%	Pioneer Natural Resources Pumping Services LLC	Stimulation					

			Water	7732-18-5	67.00000	0.06417	
			Hydrogen chloride	7647-01-0	40.00000	0.03831	
POLYfrac PLUS M-4.0	Pioneer Natural Resources Pumping Services LLC	Gelling Agent					
			Petroleum distillate	64742-47-8	55.00000	0.02897	
			Guar Gum	9000-30-0	50.00000	0.02634	
			Clay -	1302-78-9	5.00000	0.00263	
			Surfactant -	154518-36-2	1.00000	0.00053	
FLOJET DR 6250	Pioneer Natural Resources Pumping Services LLC	Friction Reducer					
			Isoparaffinic Solvent	64742-47-8	26.00000	0.01158	
			Alcohols, C11-14-iso-, C13-rich, ethoxylated	78330-21-9	3.00000	0.00134	
Caustic Soda Liquid	Pioneer Natural Resources Pumping Services LLC	Stimulation					
			Water	7732-18-5	94.50000	0.00771	
			Sodium Hydroxide	1310-73-2	51.50000	0.00420	
			Sodium chloride (NaCl)	7647-14-5	5.00000	0.00041	
Caustic Soda	Fluid Delivery Solutions	Oxidizer					
			Water	7732-18-5	94.00000	0.00460	
			Sodium Hydroxide	1310-73-2	51.50000	0.00252	
			Sodium Chloride	7647-14-5	5.00000	0.00024	
StimOil ENHF	Pioneer Natural Resources Pumping Services LLC	Surfactant					
			Citrus terpenes - CESI	68647-72-3	5.00000	0.00452	
			Isopropyl alcohol	67-63-0	1.50000	0.00136	
POLYstim SI-110N Scale Inhibitor	Pioneer Natural Resources Pumping Services LLC	Scale Inhibitor					
			Proprietary blend	Proprietary	30.00000	0.00481	PfP Technology, 14227 Fern, Houston, TX 77079. Contact: Mo Hossain, 281-584-0047
Hydrogen Peroxide	Fluid Delivery Solutions	Oxidizer					
			Water	7732-18-5	92.00000	0.00310	
			Hydrogen Peroxide	7722-84-1	20.00000	0.00067	
CL010	Pioneer Natural Resources Pumping Services LLC	Crosslinker					
			Boric acid	10043-35-3	10.00000	0.00113	
			Sodium Borate - NALCO	13840-56-7	5.00000	0.00057	
			Glycerol	56-81-5	5.00000	0.00057	
PROCAP MC-AP	Pioneer Natural Resources Pumping Services LLC	Gel Breaker					
			Ammonium persulfate	7727-54-0	76.00000	0.00088	

			Cured Resin	Proprietary	24.00000	0.00028	Fritz Industries, 500 Sam Houston Road, Mesquite, TX 75149. Contact: Laurie Weeks, 972-285-5471
VERSENE 100 Chelating Agent Liquid	Pioneer Natural Resources Pumping Services LLC	Scale Inhibitor					
			Water	7732-18-5	56.00000	0.00063	
			tetrasodium ethylenediamine tetraacetate	64-02-8	39.00000	0.00044	
			Sodium hydroxyacetate	2836-32-0	3.00000	0.00003	
			Sodium Hydroxide	1310-73-2	1.60000	0.00002	
			Nitrilotriacetate, trisodium salt (NTA)	5064-31-3	1.00000	0.00001	
Sodium Erythorbate	Pioneer Natural Resources Pumping Services LLC	Iron Control					
			Sodium erythorbate	6381-77-7	100.00000	0.00039	
X-Corr HT	Pioneer Natural Resources Pumping Services LLC	Corrosion Inhibitor					
			2-Propanol	67-63-0	38.27770	0.00023	
			Laury Alcohol Ethoxylate	68551-12-2	14.55000	0.00009	
			Cinnamaldehyde	104-55-2	10.18800	0.00006	
PeroxyMax PC	Fluid Delivery Solutions	Oxidizer					
			1,2,3-propanetriol triacetate	102-76-1	100.00000	0.00035	
CL201	Pioneer Natural Resources Pumping Services LLC	Crosslinker					
			Borax	1303-96-4	1.00000	0.00012	
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.							
		Other Chemicals					
			Water - TS	7732-18-5		0.06324	
			Polyamine Polyethers - TS	Proprietary		0.02710	CESI Chemical, 1004 S. Plainsman Road, Marlow, OK 73055. Contact: Jason White, 580-658-6608
			Propylene glycol - TS	57-55-6		0.02710	
			Water - TS	7732-18-5		0.01559	
			Copolymer of acrylamide and sodium acrylate - TS	25987-30-8		0.01559	
			Water - TS	7732-18-5		0.01444	
			Water - TS	7732-18-5		0.01194	
			Water - TS	7732-18-5		0.01134	
			Nonionic Alkoxylate - TS	Proprietary		0.00903	CESI Chemical, 1004 S. Plainsman Road, Marlow, OK 73055. Contact: Jason White, 580-658-6608
			Ulexite - TS	1319-33-1		0.00716	

			Surfactants - TS	Proprietary		0.00452	CESI Chemical, 1004 S. Plainsman Road, Marlow OK, 73055. Contact: Jason White, 580-658-6608
			Surfactant - TS (SNF)	Proprietary		0.00267	SNF Oil and Gas, 1 Chemical Plant Road, Riceboro, GA 31323. Contact: Gary McGuffey, 912-884-3366
			Fatty Acids, tall oil reaction products with acetophenone, formaldehyde and thiourea, hydrochlorides - TS	68188-40-9		0.00016	
			Silicate minerals - TS	Proprietary		0.00012	NALCO Champion, 3200 Southwest Freeway, Ste. 2700, Houston, TX 77027. Contact: Michael Powell, 713-332-1529
			Ethox CO-30 - TS	61791-12-6		0.00004	
			Tall oil, ethoxylated - TS	65071-95-6		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)