

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/13/2014
Job End Date:	10/18/2014
State:	New Mexico
County:	Eddy
API Number:	30-015-41120-00-00
Operator Name:	Chevron USA Inc.
Well Name and Number:	HAYHURST 16 25 27 STATE 1H
Longitude:	-104.19643064
Latitude:	32.13695204
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,619
Total Base Water Volume (gal):	2,928,053
Total Base Non Water Volume:	40,000



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
Fresh Water	Operator	Base Fluid					
			Fresh Water	7732-18-5	100.00000	85.50684	Density = 8.340
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	11.73599	
CRC SAND	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	1.22764	
			Phenol / formaldehyde resin	9003-35-4	5.00000	0.06138	
			Hexamethylenetetramine	100-97-0	2.00000	0.02455	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.12314	
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
			Guar gum	9000-30-0	100.00000	0.09572	
LoSurf-360W	Halliburton	Surfactant					
			Poly(oxy-1,2-ethanediyl), alpha.-isodecyl-.omega.-hydroxy-	61827-42-7	30.00000	0.02451	
			Glycerine	56-81-5	10.00000	0.00817	

			Complex alkylamine	Confidential	5.00000	0.00409	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
BC-140 X2	Halliburton	Initiator					
			Monoethanolamine borate	26038-87-9	100.00000	0.01974	
			Ethylene glycol	107-21-1	30.00000	0.00592	
Cla-Web™	Halliburton	Additive					
			Ammonium salt	Confidential	60.00000	0.01497	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00523	
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
			Ammonium persulfate	7727-54-0	100.00000	0.00455	
			Crystalline silica, quartz	14808-60-7	10.00000	0.00046	
BE-9	Halliburton	Biocide					
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00464	
LCA-1	Halliburton	Solvent					
			Paraffinic solvent	Confidential	100.00000	0.00285	
OptiKleen-WF™	Halliburton	Concentrate					
			Sodium perborate tetrahydrate	10486-00-7	100.00000	0.00212	
SP BREAKER	Halliburton	Breaker					
			Sodium persulfate	7775-27-1	100.00000	0.00126	
MO-67	Halliburton	pH Control Additive					
			Sodium hydroxide	1310-73-2	30.00000	0.00036	
K-34	Halliburton	Buffer					
			Sodium bicarbonate	144-55-8	100.00000	0.00018	
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 Ingredient(s)					
			Water	7732-18-5		1.39207	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.00523	
		Other Ingredient(s)					
			Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00479	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00213	
		Other Ingredient(s)					
			Cured acrylic resin	Confidential		0.00137	
		Other Ingredient(s)					
			Quaternary amine	Confidential		0.00125	
		Other Ingredient(s)					
			Surfactant mixture	Confidential		0.00096	

		Other Ingredient(s)					
			Surfactant mixture	Confidential		0.00096	
		Other Ingredient(s)					
			Silica gel	112926-00-8		0.00096	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00087	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00087	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00087	
		Other Ingredient(s)					
			Alkane	Confidential		0.00082	
		Other Ingredient(s)					
			Quaternary amine	Confidential		0.00025	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00017	
		Other Ingredient(s)					
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00017	
		Other Ingredient(s)					
			Crystalline Silica, Quartz	14808-60-7		0.00010	
		Other Ingredient(s)					
			Amine salts	Confidential		0.00002	
		Other Ingredient(s)					
			Quaternary amine	Confidential		0.00002	
		Other Ingredient(s)					
			Amine salts	Confidential		0.00002	
		Other Ingredient(s)					
			2,7-Naphthalenedisulfonic acid, 3-hydroxy-4-[(4-sulfor-1-naphthalenyl) azo] -, trisodium salt	915-67-3		0.00002	
		Other Ingredient(s)					
			Nitrotriactic acid, trisodium salt monohydrate	5064-31-3		0.00001	
		Other Ingredient(s)					
			Sodium hydroxide	1310-73-2		0.00001	
		Other Ingredient(s)					
			Sodium glycollate	2836-32-0		0.00001	
		Other Ingredient(s)					
			Ethylenediaminetetraacetic acid, tetrasodium salt	64-02-8		0.00001	
		Other Ingredient(s)					
			Sodium bicarbonate	144-55-8		0.00001	
		Other Ingredient(s)					
			Hydrogen peroxide	7722-84-1		0.00001	
		Other Ingredient(s)					

		Sodium sulfate	7757-82-6		0.00000
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* 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)