

Hydraulic Fracturing Fluid Product Component Information Disclosure

	Fracture Date:	4/12/2011
	State:	COLORADO
	County:	WELD
	API Number:	0512332812
	Operator Name:	CHESAPEAKE
	Well Name and Number:	STATE 8-60 16-1H
	Longitude:	-104.093005
	Latitude:	40.667845
	Long/Lat Projection:	NAD27
	Production Type:	Gas
	True Vertical Depth (TVD):	6,334
	Total Water Volume (gal)*:	2,393,840

Hvdraulic Fracturina Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)
Fresh Water		Carrier/Base Fluid		
Sand (Proppant)		Proppant		
HCL HYDROCHLORIC ACID	HALLIBURT ON ENERGY SERVICES	Acid	Hydrochloric Acid	007647-01-0
VICON NF BREAKER	HALLIBURT ON ENERGY SERVICES	Breaker	Sodium Chloride	007647-14-5
			Sodium Chlorite	007758-19-2
LOSURF-300D	HALLIBURT ON ENERGY SERVICES	Surfactant	Ethanol	000064-17-5
			Heavy Aromatic Naphtha (Naphtha, Petroleum Naphtha, Catalytic Reformed Naphtha, Heavy Paraffinic Distillate)	064742-94-5
			Naphthalene	000091-20-3
			Nonyl Phenol Poly Ethylene Glycol Ether Blend	127087-87-0
			1,2,4 Trimethylbenzene	000095-63-6
BA-20	HALLIBURT ON ENERGY SERVICES	pH Adjusting Agent	Ammonium Acetate	000631-61-8
			Acetic acid	000064-19-7
BE-7	HALLIBURT ON ENERGY SERVICES	Anti-Bacterial Agent	Sodium Hypochlorite	007681-52-9
			Sodium Hydroxide	001310-73-2
CAT-3	HALLIBURT ON ENERGY SERVICES	Activator	EDTA/Copper chelate	N/A

* 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%

All component information listed was obtained from the supplier’s Material Safety Data Sheets (MSDS). As such, the Operator is n information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupatio regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade sec the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

Maximum Ingredient Concentration in Additive (% by Mass)**	Maximum Ingredient Concentration in HF Fluid (% by Mass)**	Comments
	83.34905%	
	14.30396%	
15.00%	0.19178%	
30.00%	0.08275%	
10.00%	0.02758%	
60.00%	0.04595%	
30.00%	0.02298%	
5.00%	0.00383%	
5.00%	0.00383%	
1.00%	0.00077%	
100.00%	0.03458%	
30.00%	0.01038%	
30.00%	0.00664%	
5.00%	0.00111%	
30.00%	0.00614%	

ot responsible for inaccurate and/or incomplete
ial Safety and Health Administration's (OSHA)
ret", and "confidential business information" and

JobDate	StateName	CountvName	APINumber	Operator	WellName	Londit	Latitu	Proiection	TV
4/12/2011	COLORADO	WELD	0512332812	CHESAPEAKE	STATE 8-6	-104.0	40.667	NAD27	63

WellType	PDFName	TotalWater
Gas	0512332812C	2.393.840