

API Number 3001539508 ULSTR N-14-25S-30E Footages 300 FSL & 1980 FWL
Well Name & Number: PLU BIG SINKS 14 25 30 USA No. 001H
Operator: CHESAPEAKE OPERATING, INC.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/9/2012
State:	NEW MEXICO
County:	EDDY
API Number:	3001539508
Operator Name:	CHESAPEAKE
Well Name and Number:	PLU BIG SINKS 14-25 -30 USA 1H
Longitude:	-103.853518
Latitude:	32.123874
Long/Lat Projection:	NAD27
Production Type:	GAS
True Vertical Depth (TVD):	9,497
Total Water Volume (gal):	3,594,276

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		Carrier/Base Fluid				87.00467%	
Ottawa Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	6.41866%	
100 Mesh Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	3.44125%	
Super LC		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	97.00%	1.80691%	
			Phenol/Formaldehyde Resin	009003-35-4	5.00%	0.09314%	
			Hexamethylenetetramine (Hexamine)	000100-97-0	1.00%	0.01863%	
Acid, 16% HCl	CUDD	Acid	Water	007732-18-5	85.00%	0.55554%	
			Hydrochloric Acid	007647-01-0	15.00%	0.09804%	
FE-4	CUDD	Iron Control Agent	Citric Acid Anhydrous	000077-92-9	55.00%	0.00215%	

I-122	CUDD	Corrosion Inhibitor	Methyl Alcohol	000067-56-1	40.00%	0.00025%	
			Propargyl Alcohol	000107-19-7	8.00%	0.00005%	
ParaSorb	BAKER HUGHES	Scale Inhibitor	Calcined Diatomaceous Earth	091053-39-3	65.00%	0.01602%	
			Mineral Oil (Paraffin Oil, White Mineral Oil)	008042-47-5	30.00%	0.00739%	
			Paraffin Inhibitor	N/A	25.00%	0.00616%	
			Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	5.00%	0.00123%	
SG-15M	CUDD	Gelling Agent	Petroleum Distillate Hydrotreated Light	064742-47-8	65.00%	0.17612%	
			Proprietary Non-Hazardous Polymers	N/A	60.00%	0.16257%	
SUPERSET W	CUDD	Activator	Methanol (Methyl Alcohol)	000067-56-1	50.00%	0.01506%	
			Ethoxylated Nonyl Phenol (Nonyl Phenol Ethoxylate)	009016-45-9	50.00%	0.01506%	
CX-14G	CUDD	Cross Linker	Greenskeeper Solvent	N/A	65.73%	0.01154%	
			Sodium Tetraborate	001330-43-4	31.67%	0.00556%	
			Proprietary	N/A	2.60%	0.00046%	
BF-200	CUDD	pH Adjusting Agent	Potassium Hydroxide	001310-58-3	20.00%	0.00379%	
GB-2	CUDD	Breaker	Ammonium Persulfate	007727-54-0	100.00%	0.00301%	
AGA-380	CUDD	Gelling Agent	Sodium Bisulfite	007631-90-5	100.00%	0.00075%	
			Petroleum Distillate Hydrotreated Light	064742-47-8	35.00%	0.00026%	
			Acetic acid	000064-19-7	1.00%	0.00001%	
NE-217	CUDD	Non-Emulsifier	Methyl Alcohol	000067-56-1	50.00%	0.00032%	
FR-601	CUDD	Friction Reducer	No Hazardous Components	NONE		0.00000%	
CS-125C	CUDD	Clay Stabilizer	No Hazardous Components	NONE		0.00000%	
MC S-2510T (WS)	MULTI-CHEM	Scale Inhibitor	Ethylene Glycol	000107-21-1	60.00%	0.00626%	
			Sodium Hydroxide	001310-73-2	5.00%	0.00052%	
MC MX 664-5	MULTI-CHEM	Surfactant	Methanol (Methyl Alcohol)	000067-56-1	70.00%	0.05473%	
			Sulfonate	N/A	30.00%	0.02345%	
			Isopropanol (Isopropyl Alcohol, Propan-2-ol)	000067-63-0	5.00%	0.00391%	
MC R-8642 (WS)	MULTI-CHEM	Anti-Bacterial Agent	Glutaraldehyde (Pentanedial)	000111-30-8	60.00%	0.01355%	
			Quaternary Ammonium Compound	068424-85-1	10.00%	0.00226%	
			Ethanol	000064-17-5	1.00%	0.00023%	

* 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 not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D. Furthermore, all "Additional Ingredients Not Listed on MSDS" component information were obtained directly from the supplier. As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of this information should be directed to the supplier who provided it.

JobDate	StateName	CountyName	APINumber	Operator	WellName	Longitude	Latitude	Projection	TV	WellType	PDFName	TotalWater
1/9/2012	NEW MEXICO	EDDY	3001539508	CHESAPEAK	PLU BIG S	-103.8	32.123	NAD27	94	GAS	3001539508C	3 594.276