

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	12/05/2011
Province:	BC
Region:	Kiwigana
Well Number:	26597
Operator Name:	Paramount Resources Ltd.
Well Name:	PARA ET AL HZ KIWIGANA B- 015-D/094-O-07
Longitude:	-122.561873
Latitude:	59.154399
Long/Lat Projection:	NAD83
Production Type:	Undefined
True Vertical Depth (TVD):	5,500
Total Water Volume (m3)*:	104,307.2

### 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
Corrosion Inhibitor A264	Schlumberger Canada Ltd.	Acid Corrosion Inhibitor	Methanol	67-56-1	40.00%	0.00018%	HMIRC # 7480
			Aliphatic Acids		30.00%	0.00014%	HMIRC # 7480
			Thiourea formaldehyde polymer		30.00%	0.00014%	HMIRC # 7480
			Aliphatic Alcohols, ethoxylated #1		30.00%	0.00014%	HMIRC # 7480
			Prop-2-yn-1-ol		10.00%	0.00005%	HMIRC # 7480
			Alkenes		7.00%	0.00003%	HMIRC # 7480
			Methanol	67-56-1	40.00%	0.00018%	HMIRC # 7480
			Aliphatic Acids		30.00%	0.00014%	HMIRC # 7480
			Thiourea formaldehyde polymer		30.00%	0.00014%	HMIRC # 7480
			Aliphatic Alcohols, ethoxylated #1		30.00%	0.00014%	HMIRC # 7480
			Prop-2-yn-1-ol		10.00%	0.00005%	HMIRC # 7480
			Alkenes		7.00%	0.00003%	HMIRC # 7480
EZEFL0 F110 Surfactant	Schlumberger Canada Ltd.	Surfactant	Methanol	67-56-1	40.00%	0.00006%	HMIRC #7730
			Ethoxylated alcohols		30.00%	0.00005%	HMIRC #7730
			Ethoxylated alcohols #2		30.00%	0.00005%	HMIRC #7730
			Methanol	67-56-1	40.00%	0.00006%	HMIRC #7730
			Ethoxylated alcohols		30.00%	0.00005%	HMIRC #7730
			Ethoxylated alcohols #2		30.00%	0.00005%	HMIRC #7730
Hydrochloric Acid 15% H15	Schlumberger Canada Ltd.	Acidizing Additive	Hydrochloric acid	7647-01-0	15.00%	0.01102%	
			Hydrochloric acid	7647-01-0	15.00%	0.01102%	
Chelating Agent U106	Schlumberger Canada Ltd.	Iron Control Agent, Chelating Agent	Sodium salt of aliphatic amine acid		60.00%	0.00034%	Non-WHMIS Controlled
			Sodium hydroxide (impurity)	1310-73-2	5.00%	0.00003%	

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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
			Trisodium nitrilotriacetate (impurity)	5064-31-3	1.00%	0.00001%	
			Sodium salt of aliphatic amine acid		60.00%	0.00034%	Non-WHMIS Controlled
			Sodium hydroxide (impurity)	1310-73-2	5.00%	0.00003%	
			Trisodium nitrilotriacetate (impurity)	5064-31-3	1.00%	0.00001%	
Inhibitor Aid A201	Schlumberger	Inhibitor aid	Formic Acid	64-18-6	100.00%	0.00038%	
			Formic Acid	64-18-6	100.00%	0.00038%	
M045 Anti-foam agent	Schlumberger	Anti-foam agent	Mixture of non-controlled ingredients		100.00%	0.00008%	Non-WHMIS Controlled
			Mixture of non-controlled ingredients		100.00%	0.00008%	Non-WHMIS Controlled
Flopam DR7000	SNF-Holding Company	Friction Reducer	Ethylene Glycol	107-21-1	0.10%	0.04034%	
			Ethylene Glycol	107-21-1	0.10%	0.04034%	
100 Mesh Sand	Winn Bay	Proppant	100 Mesh		100.00%	1.65574%	
			100 Mesh		100.00%	1.65574%	
70/40 Sand	Winn Bay	Proppant	70/40		100.00%	1.65574%	
			70/40		100.00%	1.65574%	
Fresh Water (Frac)	Encana	Base/Carrier Fluid	Water		100.00%	94.32406%	
			Water		100.00%	94.32406%	
Fresh Water (Acid)	Encana	Base/Carrier Fluid	Water		100.00%	1.25751%	
			Water		100.00%	1.25751%	
Fresh Water (Acid PD)	Encana	Base/Carrier Fluid	Water		100.00%	0.99156%	
			Water		100.00%	0.99156%	
Water within HCL Acid	Schlumberger Canada Ltd.	Acidizing Additive	Water		100.00%	0.07344%	
			Water		100.00%	0.07344%	

\* 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%

Information provided in this form with respect to ingredients in the fracturing fluid is consistent with the Material Safety Data Sheet (MSDS) information. The operator has completed this form with the information provided by the supplier. The operator cannot provide any of the supplier's proprietary information, trade secrets or confidential business information.