

## Hydraulic Fracturing Fluid Product Component Information Disclosure

<b>Last Fracture Date:</b>	<b>January 03, 2013</b>
<b>Last Submission Date:</b>	<b>June 20, 2013</b>
<b>Province:</b>	<b>AB</b>
<b>AER Field Centre:</b>	<b>Red Deer</b>
<b>Surface location:</b>	<b>16-16-031-02W5</b>
<b>Well Licence Number:</b>	<b>0449454</b>
<b>Licensee Name:</b>	<b>Vaalco Energy Canada, Inc.</b>
<b>Unique Well Identifier:</b>	<b>00/09-15-031-02W5/0</b>
<b>Well Name:</b>	<b>TRANSGLOBE GARR 9-15-31-2</b>
<b>Number of Stages:</b>	<b>14</b>
<b>Bottom Hole Latitude:</b>	<b>51.659645</b>
<b>Bottom Hole Longitude:</b>	<b>-114.193303</b>
<b>Lat/Long Projection:</b>	<b>NAD 83</b>
<b>Production Fluid Type:</b>	<b>GAS</b>
<b>True Vertical Depth (TVD):</b>	<b>2,391.37</b>
<b>Total Water Volume (m3):</b>	<b>0</b>

### Hydraulic Fracturing Fluid Composition:

Fracture Start/End Date:	Component Type	Trade Name	Supplier	Purpose	Ingredient/Family Name	CAS # / HMIRC #	Concentration in Component (% by mass)	Concentration in HFF (% by mass)
Jan 3 2013 - Jan 3 2013	CARRIER FLUID				Hydrocarbon	8008-20-6	100.000000%	70.001528%
	PROPPANT	FRAC SAND 20/40 WHITE (OTTAWA TYPE)	Baker Hughes		Crystalline silica (Quartz)	14808-60-7	100.000000%	28.062678%
	ADDITIVE	RG-35SLR	Baker Hughes	Breaker	Fuels, diesel	68334-30-5	90.000000%	0.506432%
	ADDITIVE	RG-35SLR	Baker Hughes	Breaker	Magnesium oxide	1309-48-4	40.000000%	0.225081%
	ADDITIVE	XLO-5	Baker Hughes	Crosslinker	Ferric sulphate	10028-22-5	60.000000%	0.436163%
	ADDITIVE	XLO-5	Baker Hughes	Crosslinker	2-Dibutylaminoethanol	102-81-8	30.000000%	0.218082%
	ADDITIVE	XLO-5	Baker Hughes	Crosslinker	Ethoxylated oleyl amine	13127-82-7	10.000000%	0.072694%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Isopropanol	67-63-0	100.000000%	0.077181%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Oxyalkylated phenolic resin	63428-92-2	30.000000%	0.023154%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	1,2,4-Trimethyl benzene	95-63-6	5.000000%	0.003859%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Ethoxylated alcohols, C6-C12	68439-45-2	5.000000%	0.003859%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Light aromatic solvent naphtha	64742-95-6	5.000000%	0.003859%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	1,3,5-Trimethyl benzene	108-67-8	1.000000%	0.000772%
ADDITIVE	NE-118	Baker Hughes	Demulsifier	Xylene	1330-20-7	1.000000%	0.000772%	

Fracture Start/End Date:	Component Type	Trade Name	Supplier	Purpose	Ingredient/Family Name	CAS # / HMIRC #	Concentration in Component (% by mass)	Concentration in HFF (% by mass)
Jan 3 2013 - Jan 3 2013	ADDITIVE	F-100	Baker Hughes	Friction Reducer	Kerosene	8008-20-6	100.000000%	0.003575%
	ADDITIVE	F-100	Baker Hughes	Friction Reducer	Isopropanol	67-63-0	10.000000%	0.000357%
	ADDITIVE	F-100	Baker Hughes	Friction Reducer	Ethylene glycol	107-21-1	5.000000%	0.000179%
	ADDITIVE	GO-64	Baker Hughes	Gelling Agent	Phosphoric acid, mixed polyoxyalkylene, esters	Not Available	100.000000%	0.565397%

### Comments:

\*Information provided in this form is submitted in accordance with the requirements of AER Directive 59 Well Drilling and Completion Data Filing Requirements.

\*Total Water Volume sources may include fresh water, produced water, recycled water, and/or other water types as listed in The "DDS Well Drilling Completion Data Submission System: A User Guide - Appendix D".

\*CAS # - Chemical Abstract Service Number. Individual chemical ingredients have a unique CAS #. Specific ingredient names are shown for each CAS #. "Not Available" indicates the ingredient CAS # is not available.

\*HMIRC # - Hazardous Material Information Review Commission (registry) number. The HMIRC # indicates the (hazardous) additive ingredient is considered to be confidential business information and is subject to a Hazardous Material Information Review Act claim exemption. General chemical family names are shown for each HMIRC #. "Not Available" indicates the ingredient HMIRC # is not available.

\*\*"Trade Secret" indicates the (non-hazardous) additive ingredient is considered to be confidential business information. General chemical family names are reported for ingredients considered "Trade Secret".

\*Any public concerns related to this information should be directed to the AER Field Centre shown on the report.

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