

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date:	August 27, 2019
Last Submission Date:	September 12, 2019
Province:	AB
AER Field Centre:	Drayton Valley
Surface location:	14-10-049-06W5
Well Licence Number:	0494752
Licensee Name:	Ricochet Oil Corp.
Unique Well Identifier:	02/13-15-049-06W5/0
Well Name:	ROC PEMBINA 13-15-49-6
Number of Stages:	17
Bottom Hole Latitude:	53.234194
Bottom Hole Longitude:	-114.801476
Lat/Long Projection:	NAD 83
Production Fluid Type:	CRUDE OIL
True Vertical Depth (TVD):	1,337.85
Total Water Volume (m3):	2,175

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)
Aug 26 2019 - Aug 27 2019	CARRIER FLUID				Water	Not Available	100.000000%	84.747250%
	PROPPANT	20/40 Sand	Calfrac		Crystalline silica (Quartz)	14808-60-7	100.000000%	13.630379%
	PROPPANT	30/50 Sand	Calfrac		Crystalline silica (Quartz)	14808-60-7	100.000000%	1.814073%
	PROPPANT	50/140 Sand (Domestic)	Calfrac		Crystalline silica (Quartz)	14808-60-7	100.000000%	0.672284%
	ADDITIVE	SaniFrac 8844, Biocide	Calfrac	Bactericide/Biocide	Non-Hazardous Ingredients	Trade Secret	100.000000%	0.012026%
	ADDITIVE	SaniFrac 8844, Biocide	Calfrac	Bactericide/Biocide	Polyethylene glycol	25322-68-3	55.000000%	0.006614%
	ADDITIVE	SaniFrac 8844, Biocide	Calfrac	Bactericide/Biocide	Acetamide, 2,2-dibromo-2-cyano	10222-01-2	20.000000%	0.002405%
	ADDITIVE	SaniFrac 8844, Biocide	Calfrac	Bactericide/Biocide	Sodium bromide	7647-15-6	4.000000%	0.000481%
	ADDITIVE	SaniFrac 8844, Biocide	Calfrac	Bactericide/Biocide	Acetonitrile, 2,2-dibromo	3252-43-5	0.500000%	0.000060%
	ADDITIVE	DWP-913, Clay Control	Calfrac	Clay Control	Non-Hazardous Ingredients	Trade Secret	100.000000%	0.073401%
ADDITIVE	DynaRate 6104, Friction Reducer	Calfrac	Friction Reducer	Non-Hazardous Ingredients	Trade Secret	100.000000%	0.094233%	

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Aug 26 2019 - Aug 27 2019	ADDITIVE	DynaRate 6104, Friction Reducer	Calfrac	Friction Reducer	Hydrotreated Kerosene	64742-47-8	30.000000%	0.028270%
	ADDITIVE	DynaRate 6104, Friction Reducer	Calfrac	Friction Reducer	Oleamide	Trade Secret	2.000000%	0.001884%
	ADDITIVE	DynaRate 6104, Friction Reducer	Calfrac	Friction Reducer	Ammonium Chloride	12125-02-9	1.000000%	0.000942%
	ADDITIVE	CalSurf 9590, Non-Emulsifying Flowback Surfactant	Calfrac	Surfactant	Methanol	67-56-1	60.000000%	0.046961%
	ADDITIVE	CalSurf 9590, Non-Emulsifying Flowback Surfactant	Calfrac	Surfactant	Alkoxylate Polymer 1	Trade Secret	20.000000%	0.015653%
	ADDITIVE	CalSurf 9590, Non-Emulsifying Flowback Surfactant	Calfrac	Surfactant	Alkoxylate Polymer 2	Trade Secret	20.000000%	0.015653%
	ADDITIVE	CalSurf 9590, Non-Emulsifying Flowback Surfactant	Calfrac	Surfactant	Alcohols, C12-15, ethoxylated	68131-39-5	13.000000%	0.010174%

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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