

**RECEIVED**  
 ARM 36.22.307-601, 605,  
 1003, 1004, 1011, 1013,  
 1103, 1222, 1240, 1301,  
 1306, 1309, and 1417  
**MAR 02 2023**

Submit In Quadruplicate To:  
**MONTANA BOARD OF OIL AND GAS CONSERVATION**  
 2535 ST. JOHNS AVENUE  
 BILLINGS, MONTANA 59102

**MONTANA BOARD OF OIL & GAS CONSERVATION • BILLINGS**

**SUNDRY NOTICES AND REPORT OF WELLS**

Operator EMEP Operating, LLC		Lease Name: Caroline
Address 1200 Smith Street, Ste 680		Type (Private/State/Federal/Tribal/Allotted): Private
City Houston	State TX	Zip Code 77002
Telephone 346-261-1474	Fax	Well Number: 1-32H
Location of well (1/4-1/4 section and footage measurements): NW NW 330' FNL, 330' FWL (Section 32-T26N-R53E)		Unit Agreement Name:
		Field Name or Wildcat: Elm Coulee
		Township, Range, and Section: T26N, R53E, SEC 32
API Number: <b>25</b>   <b>083</b>   <b>222100000</b> State County Well	Well Type (oil, gas, injection, other): Oil	County: Richland

Indicate below with an X the nature of this notice, report, or other data:

Notice of Intention to Change Plans	<input type="checkbox"/>	Subsequent Report of Mechanical Integrity Test	<input type="checkbox"/>
Notice of Intention to Run Mechanical Integrity Test	<input type="checkbox"/>	Subsequent Report of Stimulation or Treatment	<input type="checkbox"/>
Notice of Intention to Stimulate or to Chemically Treat	<input type="checkbox"/>	Subsequent Report of Perforation or Cementing	<input type="checkbox"/>
Notice of Intention to Perforate or to Cement	<input checked="" type="checkbox"/>	Subsequent Report of Well Abandonment	<input type="checkbox"/>
Notice of Intention to Abandon Well	<input type="checkbox"/>	Subsequent Report of Pulled or Altered Casing	<input type="checkbox"/>
Notice of Intention to Pull or Alter Casing	<input type="checkbox"/>	Subsequent Report of Drilling Waste Disposal	<input type="checkbox"/>
Notice of Intention to Change Well Status	<input type="checkbox"/>	Subsequent Report of Production Waste Disposal	<input type="checkbox"/>
Supplemental Well History	<input type="checkbox"/>	Subsequent Report of Change in Well Status	<input type="checkbox"/>
Other (specify) Refrac	<input checked="" type="checkbox"/>	Subsequent Report of Gas Analysis (ARM 36.22.1222)	<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>

**Describe Proposed or Completed Operations:**

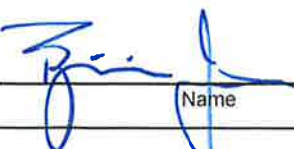
Describe planned or completed work in detail. Attach maps, well-bore configuration diagrams, analyses, or other information as necessary. Indicate the intended starting date for proposed operations or the completion date for completed operations.

EMEP Operating, LLC ("EMEP") respectfully submits this Notice of Intent to perform a refrac.

Please find attached (1) EMEP's Recompletion Procedure for the Caroline 1-32H, and (2) the Fracturing Fluid Disclosure.

**BOARD USE ONLY**

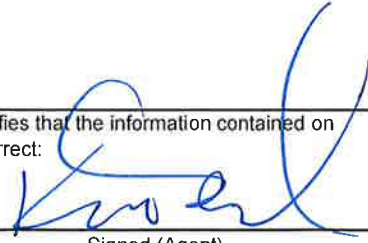
Approved MAR 07 2023  
Date

  
Name

Admin/Reg. Engineer  
Title

The undersigned hereby certifies that the information contained on this application is true and correct:

3/1/23  
Date

  
Signed (Agent)

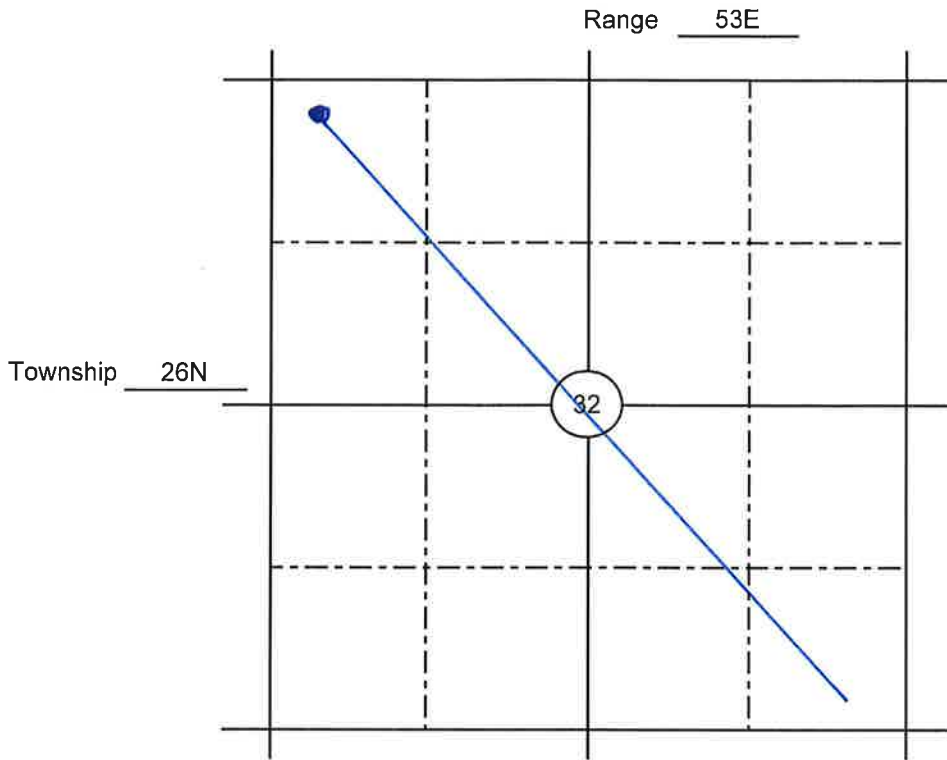
Kyle D. Dubiel - Vice President BD, Land and Legal  
Print Name and Title

Telephone: (346) 261-1474

**SUPPLEMENTAL INFORMATION**

NOTE: Additional information or attachments may be required by Rule or by special request.

Plot the location of the well or site that is the subject of this notice or report.



**BOARD USE ONLY**

**CONDITIONS OF APPROVAL**

The operator must comply with the following condition(s) of approval:

*See attached →*

Failure to comply with the conditions of approval may void this permit.

08322210

**Client:** Eagle Mountain Energy Partners  
**Disclosure Type:** Pre-Job  
**Well:** Caroline 1-32H  
**Basin/Field:** Williston Basin  
**State:** Montana  
**County:** Richland  
**Date Prepared:** 2/15/2023



Fluid Name	Volume (gal)	Additive	Additive Description	Concentration	Volume
Slickwater	3,574,800	100 Mesh	Proppant	Varied Concentrations	300000 lb
		40/70 White	Proppant	Varied Concentrations	2000000 lb
		20/40 White	Proppant	Varied Concentrations	800000 lb
		20/40 Super LC	Proppant	Varied Concentrations	400000 lb
		ELEHV-6	Friction Reducer	1.40 gal / 1000 gal	5012 gal
		BioSuite GQ123x	Bactericide/Biocide	0.25 gal / 1000 gal	894 gal
		ELENE-4	Non-Emulsifier	0.50 gal / 1000 gal	1797 gal
		ELEScale-2	Scale Inhibitor	0.25 gal / 1000 gal	894 gal
		ELEBR-6	Breaker	0.65 gal / 1000 gal	2337 gal
		ELECCL-10	Clay Control	1.00 gal / 1000 gal	3574 gal
		BioSuite GQ123xWM	Bactericide/Biocide	0.01 gal / 1000 gal	20 gal
		BioSuite GQ510x	Bactericide/Biocide	0.01 gal / 1000 gal	20 gal
		ELESurf-5	Surfactant	0.01 gal / 1000 gal	20 gal
		HCI-15	Solvent	0.28 gal / 1000 gal	1000 gal
		ACI-102HT	Corrosion inhibitor	0.00 gal / 1000 gal	10 gal
IC-50S	Iron Control	0.00 gal / 1000 gal	10 gal		

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CAS Number	Chemical Name	Trade Name	Mass Fraction
7732-18-5	Water		89.12130%
14808-60-7	Crystalline Silica (Quartz)		5.97852%
14808-60-7	Crystalline Silica (Quartz)		2.39141%
14808-60-7	Crystalline Silica (Quartz)		1.18375%
14808-60-7	Crystalline Silica (Quartz)		0.89678%
7732-18-5	Water		0.07193%
64742-53-6	Distillates (petroleum), hydrotreated light naphthenic		0.06869%
9003-35-4	Phenolic Resin		0.05979%
7732-18-5	Water		0.05495%
25987-30-8	2-propenoic acid, polymer with 2-propenamide, sodium salt		0.04259%
64742-47-8	Distillates (petroleum), hydrotreated light		0.04122%
7786-30-3	Magnesium chloride		0.02606%
9004-54-0	Dextran		0.02606%
7447-40-7	Potassium Chloride		0.02085%
7732-18-5	Water		0.02016%
67-56-1	Methanol		0.02016%
67-56-1	Methanol		0.00647%
75-91-2	Tert-Butyl hydroperoxide		0.00612%
69011-36-5	Poly(oxy-1,2-ethanediy),a-tridecyl-w-hydroxy-,branched		0.00412%
57-13-6	Urea		0.00412%
7647-01-0	Hydrochloric Acid		0.00401%
111-30-8	Glutaraldehyde		0.00341%
1338-43-8	Sorbitan, monoleate		0.00275%
79-06-1	Acrylamide (as residual)		0.00137%
7173-51-5	Didecyl dimethyl ammonium chloride		0.00114%
68424-85-1	Alkyl dimethyl benzyl ammonium chloride (C12-16)		0.00114%
9041-33-2	Polyalkylene Oxide		0.00081%
4719-04-4	Preservative		0.00052%
7732-18-5	Water		0.00045%
15827-60-8	Organophosphonate		0.00032%
67-56-1	Methanol		0.00030%
107-21-1	Ethylene Glycol		0.00022%
77-92-9	2-hydroxypropane-1,2,3-tricarboxylic acid		0.00019%
107-21-1	Ethylene glycol		0.00011%
7647-01-0	Hydrochloric Acid		0.00010%
111-30-8	Glutaraldehyde		0.00008%
68424-85-1	Alkyl dimethyl benzyl ammonium chloride (C12-16)		0.00005%
68-12-2	N,N-Dimethylformamide		0.00004%
9003-11-6	Polyethylene/propylene block polymer		0.00003%
78355-51-8	Linear alkyl sulfate		0.00003%
15619-48-4	1-(Benzyl)quinolinium chloride		0.00003%
111-30-8	Glutaraldehyde		0.00003%
68424-85-1	Alkyl dimethyl benzyl ammonium chloride (C12-16)		0.00003%
127087-87-0	Nonylphenol ethoxylated		0.00001%
104-55-2	Cinnamaldehyde		0.00001%
68603-15-6	Alcohols, C6-12		0.00001%
111-76-2	Ethanol, 2-Butoxy-		0.00001%
78-40-0	Triethyl phosphate		0.00001%
67-56-1	Methanol		0.00001%
<b>Total</b>			<b>100%</b>

08322210



Fracture Start Date/Time:	
Fracture End Date/Time:	
State:	Michigan
County:	Benoni
API Number:	23-083-22210-0000
Operator Name:	Anga
Well Name:	Crucible 1-2721
Federal Well No.:	
Indian Well No.:	
Longitude:	103.914722
Latitude:	41.9682416
Lang/Lat Projection:	NAD83
True Vertical Depth (TVD):	9974
Total Clean Fluid Volume (gals):	1,574,000



Additive	Specific Gravity	Additive Quantity	Mass (lbs)
Water	8.31	1,874,000	28,118.12
100 Mesh	(already reported in lbs)	200,000	700,000
40-70 White	(already reported in lbs)	1,000,000	2,000,000
20-40 White	(already reported in lbs)	200,000	200,000
20-40 Super LC	(already reported in lbs)	400,000	400,000
ELEHV-6	9.17	5,912	45,968
BioSolve GQ123s	8.51	854	7,601
ELENF-4	7.51	1,777	13,448
ELEScale-2	8.06	854	7,210
ELEHR-6	8.76	2,237	20,463
ELECC-16	9.78	1,874	14,774
BioSolve GQ123sWAI	8.44	10	169
BioSolve GQ150s	8.54	10	171
ELESurf-3	8.54	10	167
HCl-15	8.50	1,000	8,352
ACI-102HT	9.03	10	91
BC-505	10.82	10	108
Total Slurry Mass (Lbs)			32,352,092

Ingredients Section:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier	Carrier	7732-18-3	100.00%	28,118.12	89.1210%	
100 Mesh	Element	Proppant	MSDS and Non-MSDS Ingredients Listed Below					
40-70 White	Element	Proppant	MSDS and Non-MSDS Ingredients Listed Below					
20-40 White	Element	Proppant	MSDS and Non-MSDS Ingredients Listed Below					
20-40 Super LC	Covis	Proppant	MSDS and Non-MSDS Ingredients Listed Below					
ELEHV-6	Element	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below					
BioSolve GQ123s	BioSolve	Bactericide/Biocide	MSDS and Non-MSDS Ingredients Listed Below					
ELENF-4	Element	Non-Foamifier	MSDS and Non-MSDS Ingredients Listed Below					
ELEScale-2	Element	Scale Inhibitor	MSDS and Non-MSDS Ingredients Listed Below					
ELEHR-6	Element	Breaker	MSDS and Non-MSDS Ingredients Listed Below					
ELECC-16	Element	Clay Control	MSDS and Non-MSDS Ingredients Listed Below					
BioSolve GQ123sWAI	BioSolve	Bactericide/Biocide	MSDS and Non-MSDS Ingredients Listed Below					
BioSolve GQ150s	BioSolve	Bactericide/Biocide	MSDS and Non-MSDS Ingredients Listed Below					
ELESurf-3	Element	Surfactant	MSDS and Non-MSDS Ingredients Listed Below					
HCl-15	Element	Solvent	MSDS and Non-MSDS Ingredients Listed Below					
ACI-102HT	WST	Corrosion inhibitor	MSDS and Non-MSDS Ingredients Listed Below					
BC-505	WST	Iron Control	MSDS and Non-MSDS Ingredients Listed Below					
The trade name(s) of the additive(s) used, supplier(s) and the purpose(s) of the additive(s) are listed above. The ingredient(s) for the above additive(s) are listed below.								
Element	Proppant	Proppant	Crystalline Silica (Quartz)	14809-60-7	100.00%	2,000,000	5,978.12%	
Element	Proppant	Proppant	Crystalline Silica (Quartz)	14809-60-7	100.00%	800,000	2,391.41%	
Covis	Proppant	Proppant	Crystalline Silica (Quartz)	14809-60-7	97.00%	200,000	1,181.25%	
Element	Proppant	Proppant	Crystalline Silica (Quartz)	14809-60-7	100.00%	100,000	8,985.75%	
Element	Clay Control	Clay Control	Water	7732-18-3	50.00%	24,061	0,7191%	
Element	Friction Reducer	Friction Reducer	Distillates (petroleum), hydrotreated light naphthenic	64742-53-6	50.00%	22,910	0,8889%	
Covis	Proppant	Proppant	Phenolic Resin	9003-31-4	3.00%	26,000	0,8979%	
Element	Friction Reducer	Friction Reducer	Water	7732-18-3	40.00%	18,184	0,8129%	
Element	Friction Reducer	Friction Reducer	2-propenoic acid, polymer with 2-propanoic acid, sodium	23987-30-4	31.00%	14,243	0,8225%	
Element	Friction Reducer	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-53-6	30.00%	13,748	0,8122%	
Element	Clay Control	Clay Control	Magnesium chloride	7786-30-3	23.00%	9,719	0,2685%	
Element	Clay Control	Clay Control	Dextran	9004-34-0	23.00%	9,719	0,2685%	
Element	Clay Control	Clay Control	Potassium Chloride	7447-40-7	20.00%	8,977	0,2708%	
Element	Non-Foamifier	Non-Foamifier	Water	7732-18-3	50.00%	6,744	0,2016%	
Element	Non-Foamifier	Non-Foamifier	Methanol	67-56-1	30.00%	6,744	0,2016%	
Element	Scale Inhibitor	Scale Inhibitor	Methanol	67-56-1	30.00%	2,181	0,0667%	
Element	Breaker	Breaker	Tert-Butyl hydroperoxide	75-91-2	10.00%	2,067	0,0612%	
Element	Friction Reducer	Friction Reducer	Poly(oxy-1,3-ethanediyl-1,2-ethoxy-1,2-ethoxy-1,2-ethoxy-1,2-ethoxy) hexane	69011-36-3	3.00%	1,379	0,0412%	
Element	Friction Reducer	Friction Reducer	Urea	57-13-6	3.00%	1,379	0,0412%	
Element	Solvent	Solvent	Hydrochloric acid	7647-01-0	13.00%	1,181	0,0315%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Glutaraldehyde	111-30-8	13.00%	1,181	0,0315%	
Element	Friction Reducer	Friction Reducer	Sorbitan, monoleate	1338-43-8	2.00%	919	0,0275%	
Element	Friction Reducer	Friction Reducer	Acrylamide (as residual)	79-06-1	1.00%	480	0,0137%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Diethyl dimethyl ammonium chloride	7173-31-5	3.00%	180	0,0014%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Alkyl dimethyl benzyl ammonium chloride (C12-16)	68424-85-1	3.00%	180	0,0014%	
Element	Non-Foamifier	Non-Foamifier	Polyalkylene Oxide	9011-33-2	2.00%	270	0,0081%	
Element	Clay Control	Clay Control	Preservative	4219-04-4	0.50%	170	0,0051%	
Element	Surfactant	Surfactant	Water	7732-18-3	90.00%	150	0,0045%	
Element	Scale Inhibitor	Scale Inhibitor	Organophosphorus	15823-60-8	1.50%	150	0,0045%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Methanol	67-56-1	60.00%	101	0,0030%	
Element	Scale Inhibitor	Scale Inhibitor	Ethylene Glycol	107-21-1	1.00%	70	0,0021%	
WST	Iron Control	Iron Control	2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	60.00%	65	0,0019%	
WST	Corrosion inhibitor	Corrosion inhibitor	Ethylene glycol	107-21-1	40.00%	38	0,0011%	
Element	Clay Control	Clay Control	Hydrochloric acid	7647-01-0	9.10%	35	0,0010%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Glutaraldehyde	111-30-8	14.99%	25	0,0008%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Alkyl dimethyl benzyl ammonium chloride (C12-16)	68424-85-1	10.00%	17	0,0005%	
WST	Corrosion inhibitor	Corrosion inhibitor	N,N-Dimethylformamide	68-12-2	13.00%	14	0,0004%	
Element	Surfactant	Surfactant	Polyethylene propylene block polymer	9003-11-6	3.00%	22	0,0003%	
Element	Surfactant	Surfactant	Linear alkyl sulfate	78353-51-8	3.00%	22	0,0003%	
WST	Corrosion inhibitor	Corrosion inhibitor	1-(Benzyloxy)ethanol	15619-48-4	10.00%	9	0,0003%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Glutaraldehyde	111-30-8	3.00%	9	0,0003%	
BioSolve	Bactericide/Biocide	Bactericide/Biocide	Alkyl dimethyl benzyl ammonium chloride (C12-16)	68424-85-1	4.99%	8	0,0003%	
WST	Corrosion inhibitor	Corrosion inhibitor	Nonylphenol ethoxylate	12707-87-0	3.00%	3	0,0001%	
WST	Corrosion inhibitor	Corrosion inhibitor	Cresols, o-cresol	105-53-2	3.00%	3	0,0001%	
WST	Corrosion inhibitor	Corrosion inhibitor	Alcohols, C6-12	65031-15-6	3.00%	3	0,0001%	
WST	Corrosion inhibitor	Corrosion inhibitor	Diazol, 2-thiacyc-	111-76-2	3.00%	3	0,0001%	
WST	Corrosion inhibitor	Corrosion inhibitor	Triethyl phosphite	78-40-6	3.00%	3	0,0001%	
Element	Surfactant	Surfactant	Methanol	67-56-1	2.00%	3	0,0001%	

\* 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 1910.120(f) and Appendix D.

08322210

# MONTANA BOARD OF OIL AND GAS ATTACHMENT TO FORM 2 “CONDITIONS OF APPROVAL”

A. Field Inspector must be notified at least **24 hours** in advance of the start of fracture stimulation operation.

## **B. 36.22.1106 SAFETY AND WELL CONTROL REQUIREMENTS – HYDRAULIC FRACTURING**

(1) New and existing wells which will be stimulated by hydraulic fracturing must demonstrate suitable and safe mechanical configuration for the stimulation treatment proposed.

(2) Prior to initiation of fracture stimulation, the operator must evaluate the well. If the operator proposes hydraulic fracturing through production casing or through intermediate casing, **the casing must be tested to the maximum anticipated treating pressure**. If the casing fails the pressure test it must be repaired or the operator must use a temporary casing string (fracturing string).

**(a) If the operator proposes hydraulic fracturing through a fracturing string, it must be stung into a liner or run on a packer set not less than 100 feet below the cement top of the production or intermediate casing and must be tested to not less than maximum anticipated treating pressure minus the annulus pressure applied between the fracturing string and the production or immediate casing.**

(3) A casing pressure test will be considered successful if the pressure applied has been held for 30 minutes with no more than ten percent pressure loss.

(4) A **pressure relief valve(s)** must be installed on the treating lines between pumps and wellhead to limit the line pressure to the test pressure determined above; the well **must be equipped with a remotely controlled shut-in device** unless waived by the board administrator should the factual situation warrant.

(5) **The surface casing valve must remain open** while hydraulic fracturing operations are in progress; the annular space between the fracturing string and the intermediate or production casing must be monitored and may be pressurized to a pressure not to exceed the pressure rating of the lowest rated component that would be exposed to pressure should the fracturing string fail.

History: 82-11-111, MCA; IMP, 82-11-111, MCA; NEW, 2011 MAR p. 1686, Eff. 8/26/11.