FORM NO. 22 R 10/09 | SUBMIT IN QUADRUPLICATE TO: | ARM 36.22.307 ARM 36.22.601

MONTANA BOARD OF OIL AND GAS CONSERVATION
2535 ST. JOHNS AVENUE, BILLINGS, MONTANA 59102

Application for Permit To:

Drill [x] Deepen [ ] Re-enter [ ]
Oil [x] Gas [ ] Other _____ [ ]

Operator: Prima Exploration, Inc.
Address: 250 Filmore St, Suite 500
City: Denver State: CO Zip: 80206
Telephone Number: 303-755-5681

Surface Location of Well (quarter-quarter and footage measurements):
NE 1/4 NW1/4 Sec. 30 T25N R59E 290' FNL 1765' FWL

Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well:
TD - 20,808' MD.
BHL - NW 1/4 NW 1/4 Sec. 18 T25N R59E 250' FNL 654' FWL

Lease Name: Butch Cassidy
Lease Type (Private/State/Federal): Private
Well Number: 1H
Field Name or Wildcat: Elm Coulee Northeast
Unit Name (if applicable): N/A
Objective Formation(s): Bakken
Township, Range, and Section: T25N R59E Section 30
County: Richland
Elevation (indicate GL or KB): 2195' GL

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MAR 10 2022
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Size and description of drilling/spacing unit and applicable order, if any:	Formation at total depth:	Anticipated Spud Date:
1280 Acre Section 18/19, MT Docket 118-2019	Bakken	7/1/2022

Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
13 1/2"	9 5/8"	36#	J-55 LTC	2,200'	625	See Attached
8 3/4"	7"	32#	HCP110 LTC	10,765'	650	See Attached
6"	4 1/2"	13.5#	HCP110 GBCD	20,808'	564	See Attached

Describe Proposed Operations:
Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.
Please see attached programs.
Prima Exploration, Inc. requests variance to NOT run Open hole logs on the subject well. Offset logs can be found for the ~~Tenneco Oil Company, E.V. Vanderhoof #1, Sec. 19~~ Young Heirs 4 30 T25N R59E, Richland County, MT.

BOARD USE ONLY By CMN Consulting Inc.

Approved (date) MAR 14 2022
By _____
Title Petroleum Engineer

Permit Fee $150.00
Check Number 5634
Permit Expires SEP 14 2022
Permit Number 32700

THIS PERMIT IS SUBJECT TO THE CONDITIONS OF APPROVAL STATED ON THE BACK

API Number: 25 - 083 - 23425

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

Signed (Agent) Ren Gardner
Title Ren Gardner - Agent/Petroleum Engineer
Date 3/9/2022
Telephone Number 406-259-4878

Samples Required: NONE X ALL _____ FROM _____ feet to _____ feet
Core chips to address below, full cores to USGS, Core Laboratory, Arvada, CO. Required samples must be **washed, dried** and delivered prepaid to:

Montana Board of Oil and Gas Conservation
2535 St. Johns Avenue
Billings, MT 59102

SUPPLEMENTAL INFORMATION

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

1. Attach a survey plat certified by a registered surveyor. The survey plat must show the location of the well with reference to the nearest lines of an established public survey.

2. Attach an 8 1/2 x 11" photocopy of that portion of a topographic map showing the well location, the access route from county or other established roads, residences, and water wells within a 1/2 mile radius of the well.

3. Attach a sketch of the well site showing the dimensions and orientation of the site, the size and location of pits, topsoil stockpile, and the estimated cut/fill at the corners and centerstake. (Note: the diagram need not be done by an engineer or surveyor). Attach a sketch of a top view and two side views of the reserve pit(s), if utilized. The reserve pit sketch must show the length, width, depth, cut and fill, amount of freeboard, area of topsoil stockpile, and the height and width of berms.

4. Describe the type and amount of material or liner, if any, to be used to seal the reserve pit. If a synthetic liner is used, indicate the liner thickness (mils), bursting strength, tensile strength, tear strength, puncture resistance, hydrostatic resistance, or attach the manufacturer's specifications.

5. Describe the proposed plan for the treatment and/or the disposal of reserve pit fluids and solids after the well is drilled. If the operator intends to dispose of or treat the reserve pit contents off-site, specify the location and the method of waste treatment and disposal. (Note: The operator must comply with all applicable federal, state, county, and local laws and regulations with regard to the handling, transportation, treatment, and disposal of solid wastes.)

6. Does construction of the access road or location, or some other aspect of the drilling operation require additional federal, state, or local permits or authorizations? If yes, indicate the type of permit or authorization required:

- [x] No additional permits needed
- [ ] 310 Permit (apply through county conservation district)
- [ ] Air quality permit (apply through Montana Department of Environmental Quality)
- [ ] Water discharge permit (apply through Montana Department of Environmental Quality)
- [ ] Water use permit (apply through Montana Department of Natural Resources and Conservation)
- [ ] Solid waste disposal permit (apply through Montana Department of Environmental Quality)
- [ ] State lands drilling authorization (apply through Montana Department of Natural Resources and Conservation)
- [ ] Federal drilling permit (specify agency)
- [ ] Other federal, state, county, or local permit or authorization: (specify type) _____

NOTICES:

1. Date and time of spudding must be reported to the Board verbally or in writing within 72 hours after the commencement of drilling operations.

2. The operator must give notice of drilling operations to the surface owner as required by Section 82-10-503, MCA, before the commencement of any surface activity.

BOARD USE ONLY | CONDITIONS OF APPROVAL

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

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

Stages: 1 Through 5

15 MMlb Design

Stage #	STAGE TYPE	PPA	FLUID TYPE	Proppant TYPE	Pump rate (BPM)	CLEAN VOLUME STAGE (GAL)	(BBL)	CUM (BBL)	SLURRY VOLUME STAGE (GAL)	(BBL)	CUM (BBL)	PROPPANT STAGE (LBS)	CUM (LBS)	ADDITIVES Concentrations DVA-75R (DIVERTING AGENT MEDIUM PARTICLE)	DVA-75L (DIVERTING AGENT LARGE PARTICLE)	DFR-1S (Dry FR)	SFT-602 (MICELLAR DISPERSION SURFACTANT Concentrate)	BIOCLEAR 5000 (5% DBNPA)	HCL15 (15% HCl Acid)
1	SW - Ball drop		Liberty FR		15	10,000	238	238	10000	238	238	0	0			1.30	0.20	0.10	
2	15% HCl		15% HCL		80	500	12	250	500	12	250	0	0						1000.00
3	SW		Liberty FR Pad		80	7,000	167	417	7000	167	417	0	0			1.30	0.20	0.10	
4	PLF	0.25	Liberty FR	100 MESH	80	7,000	167	583	7079	169	585	1,750	1,750			1.30	0.20	0.10	
5	PLF	0.50	Liberty FR	100 MESH	80	9,000	214	798	9204	219	804	4,500	6,250			1.30	0.20	0.10	
6	Ramp 1-2.5	1.75	HCFR (2ppt)	100 MESH	80	50,600	1205	2,002	54607	1300	2,105	88,550	94,800			5.20	0.20	0.10	
7	Ramp 2.5-3	2.80	HCFR (3ppt)	100 MESH	80	40,500	964	2,967	45831	1091	3,191	113,400	208,200			7.80	0.20	0.10	
8	Flush		Liberty FR		80	18,000	429	3,396	18000	429	3,620	0	208,200			1.30	0.20	0.10	
														Total	Total	Total	Total	Total	Total
Stage Total						142,600	3,396		152,029	3,620				0	0	845	28	14	500
Totals by Design			5 Stages			713,000	16,976		760,102	18,096				0	0	3227	141	71	2500

Proppant name	S.G.	Total Pounds	Proppant name	S.G.	Total Pounds
100 MESH	2.65	1,041,000			
WHITE SAND 40/70	2.65	-			
WHITE SAND 30/50	2.65	-			

Pump Time per Stage: 68 min

Stages: 6 Through 25

15 MMlb Design

Stage #	STAGE TYPE	PPA	FLUID TYPE	Proppant TYPE	Pump rate (BPM)	CLEAN VOLUME STAGE (GAL)	(BBL)	CUM (BBL)	SLURRY VOLUME STAGE (GAL)	(BBL)	CUM (BBL)	PROPPANT STAGE (LBS)	CUM (LBS)	ADDITIVES Concentrations DVA-75R (DIVERTING AGENT MEDIUM PARTICLE)	DVA-75L (DIVERTING AGENT LARGE PARTICLE)	DFR-1S (Dry FR)	SFT-602 (MICELLAR DISPERSION SURFACTANT Concentrate)	BIOCLEAR 5000 (5% DBNPA)	HCL15 (15% HCl Acid)
1	SW - Ball drop		Liberty FR		15	8,800	210	210	8800	210	210	0	0			1.30	0.20	0.10	
2	15% HCl		15% HCL		80	250	6	215	250	6	215	0	0						1000.00
3	SW		Liberty FR Pad		80	3,500	83	299	3500	83	299	0	0			1.30	0.20	0.10	
4	PLF	0.25	Liberty FR	100 MESH	80	3,500	83	382	3540	84	383	875	875			1.30	0.20	0.10	
5	PLF	0.50	Liberty FR	100 MESH	80	4,500	107	489	4602	110	493	2,250	3,125			1.30	0.20	0.10	
6	Ramp 1-2.5	1.75	HCFR (2ppt)	100 MESH	80	25,300	602	1,092	27303	650	1,143	44,275	47,400			5.20	0.20	0.10	
7	Ramp 2.5-3	2.80	HCFR (3ppt)	100 MESH	80	20,250	482	1,574	22815	543	1,686	56,700	104,100			7.80	0.20	0.10	
8	SW		Liberty FR Pad		80	1,500	36	1,610	1509	36	1,722	0	104,100			1.30	0.20	0.10	
9	Diverter in ~1 ppt FR		Liberty FR Diverter		80	840	20	1,630	840	20	1,742	0	104,100	2.50	2.50	2.80	0.20	0.10	
10	SW		Liberty FR		80	3,500	83	1,713	3500	83	1,825	0	104,100			1.30	0.20	0.10	
11	PLF	0.25	Liberty FR	100 MESH	80	3,500	83	1,796	3540	84	1,909	875	104,975			1.30	0.20	0.10	
12	PLF	0.50	Liberty FR	100 MESH	80	4,500	107	1,903	4602	110	2,019	2,250	107,225			1.30	0.20	0.10	
13	Ramp 1-2.5	1.75	HCFR (2ppt)	100 MESH	80	25,300	602	2,506	27303	650	2,669	44,275	151,500			5.20	0.20	0.10	
14	Ramp 2.5-3	2.80	HCFR (3ppt)	100 MESH	80	20,250	482	2,988	22815	543	3,212	56,700	208,200			7.80	0.20	0.10	
15	Flush		Liberty FR		80	17,000	405	3,393	17000	405	3,617	0	208,200			1.30	0.20	0.10	
														Total	Total	Total	Total	Total	Total
Stage Total						142,690	3,397		151,916	3,617				2	2	847	28	14	250
Totals by Design			20 Stages			2,849,800	67,852		3,038,299	72,338				42	42	12932	565	284	5000

Proppant name	S.G.	Total Pounds	Proppant name	S.G.	Total Pounds
100 MESH	2.65	4,164,000			
WHITE SAND 40/70	2.65	-			
WHITE SAND 30/50	2.65	-			

Pump Time per Stage: 57 min

Stages:	26	Through	60

15 MMlb Design

Stage #	STAGE TYPE	PPA	FLUID TYPE	Proppant TYPE	Pump rate (BPM)	CLEAN VOLUME STAGE (GAL)	CLEAN VOLUME STAGE (BBL)	CLEAN VOLUME CUM. (BBL)	SLURRY VOLUME STAGE (GAL)	SLURRY VOLUME STAGE (BBL)	SLURRY VOLUME CUM. (BBL)	PROPPANT STAGE (LBS)	PROPPANT CUM (LBS)
1	SW - Ball drop		Liberty FR		15	8,800	210	210	8800	210	210	0	0
2	SW		Liberty FR Pad		80	3,000	71	281	3000	71	281	0	0
3	PLF	0.25	Liberty FR	100 MESH	80	3,333	79	360	3371	80	361	833	833
4	PLF	0.50	Liberty FR	100 MESH	80	5,000	119	479	5113	122	483	2,500	3,333
5	Ramp 1-2.5	1.75	HCFR (2gpt)	100 MESH	80	23,000	548	1,027	24821	591	1,074	40,250	43,583
6	Ramp 2.6-3	2.80	HCFR (3gpt)	100 MESH	80	18,600	443	1,470	20956	499	1,573	52,080	95,663
7	SW		Liberty FR Pad		80	1,500	36	1,506	1500	36	1,609	0	95,663
8	Diverter in ~1 gpt FR		Liberty FR Diverter		80	840	20	1,526	840	20	1,629	0	95,663
9	SW		Liberty FR		80	3,000	71	1,597	3000	71	1,700	0	95,663
10	PLF	0.25	Liberty FR	100 MESH	80	3,333	79	1,676	3371	80	1,780	833	96,497
11	PLF	0.50	Liberty FR	100 MESH	80	5,000	119	1,795	5113	122	1,902	2,500	98,997
12	Ramp 1-2.5	1.75	HCFR (2gpt)	100 MESH	80	23,000	548	2,343	24821	591	2,493	40,250	139,247
13	Ramp 2.6-3	2.80	HCFR (3gpt)	100 MESH	80	18,600	443	2,786	20956	499	2,992	52,080	191,327
14	SW		Liberty FR Pad		80	1,500	36	2,822	1500	36	3,028	0	191,327
15	Diverter in ~1 gpt FR		Liberty FR Diverter		80	840	20	2,842	840	20	3,048	0	191,327
16	SW		Liberty FR		80	3,000	71	2,913	3000	71	3,119	0	191,327
17	PLF	0.25	Liberty FR	100 MESH	80	3,333	79	2,992	3371	80	3,199	833	192,160
18	PLF	0.50	Liberty FR	100 MESH	80	5,000	119	3,111	5113	122	3,321	2,500	194,660
19	Ramp 1-2.5	1.75	HCFR (2gpt)	100 MESH	80	23,000	548	3,659	24821	591	3,912	40,250	234,910
20	Ramp 2.6-3	2.50	HCFR (3gpt)	100 MESH	80	18,600	443	4,102	20956	499	4,411	52,080	286,990
21	Flush		Liberty FR		80	16,000	381	4,483	16000	381	4,792	0	286,990
Stage Total						189,120	4,503		202,105	4,812			
Totals by Design	35 Stages					6,619,200	157,605		7,073,675	168,421			

Stage #	DVA-7EM (DIVERTING AGENT MEDIUM PARTICLE)	DVA-7SL (DIVERTING AGENT LARGE PARTICLE)	DFR-15 (Dry FR)	SFT-682 (MICELLAR DISPERSION SURFACTANT Concentrated)	GEOCLEAR 5000 (5% DBNPA)	HCl-15 (15% HCl Acid)
1			1.30	0.20	0.10	
2			1.30	0.20	0.10	
3			1.30	0.20	0.10	
4			1.30	0.20	0.10	
5			5.20	0.20	0.10	
6			7.80	0.20	0.10	
7			1.30	0.20	0.10	
8	2.50	2.50	2.60	0.20	0.10	
9			1.30	0.20	0.10	
10			1.30	0.20	0.10	
11			1.30	0.20	0.10	
12			5.20	0.20	0.10	
13			7.80	0.20	0.10	
14			1.30	0.20	0.10	
15	2.50	2.50	2.60	0.20	0.10	
16			1.30	0.20	0.10	
17			1.30	0.20	0.10	
18			1.30	0.20	0.10	
19			5.20	0.20	0.10	
20			7.80	0.20	0.10	
21			1.30	0.20	0.10	
	Total	Total	Total	Total	Total	Total
Stage Total	4	4	593	38	19	0
Totals by Design	147	147	20756	1316	653	0

Proppant name	S.G.	Total Pounds	Proppant name	S.G.	Total Pounds
100 MESH	2.65	10,044,650			
WHITE SAND 40/70	2.65	-			
WHITE SAND 30/50	2.65	-			

Pump Time per Stage: 71 min

CELLS WITH BLUE BACKGROUND ARE THE ONLY CELLS TO BE EDITED

Fracture Start Date/Time:	
Fracture End Date/Time:	
State:	Montana
County:	Richland
API Number:	
Operator Number:	
Well Name:	Balch Cassidy 1H
Federal Well:	
Indian Well:	
Longitude:	
Latitude:	
Long/Lat Projection:	
True Vertical Depth (TVD):	10421
Total Clean Fluid Volume* (gal):	10,182,000

FracFocus Chemical Disclosure Registry

e.g. XX-XXX-XXXXX-00000

anga Natural Gas Alliance

Additive	*Specific Gravity*	*Additive Quantity*	*Mass (lbs)*	
Water	8.34	10,182,000	*84,917,880*	gal
DVA-75	(already reported in lbs)	378	*378*	lb
FRP-1S	9.17	1,000	*9,174*	gal
HCL-15	8.95	7,500	*67,140*	gal
ACI-410	8.82	35	*307*	gal
WA-100	8.92	30	*268*	gal
IC-50S	10.84	15	*163*	gal
DF-36S	8.76	1	*9*	gal
Liberty Clean Out Fluid	6.81	20	*136*	gal
Bioclear 5000	9.34	1,015	*9,480*	gal
Crystalline Silica Quartz	(already reported in lbs)	15,249,650	*15,249,650*	lb
Surf-Flo 430C	8.43	2,000	*17,111*	gal
DFR-1S	(already reported in lbs)	46,917	*46,917*	lb
D206	8.42	10	*84*	gal

Total Slurry Mass (Lbs)

100,319,790

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	7732-18-5	100.0000%	*84,917,880*	*84.64885%*	
DVA-75	Liberty Oilfield Services	Diverting Agent	MSDS and Non-MSDS Ingredients Listed Below					
FRP-1S	Liberty Oilfield Services	Friction reduction	MSDS and Non-MSDS Ingredients Listed Below					
HCL-15	Liberty Oilfield Services	Solvent	MSDS and Non-MSDS Ingredients Listed Below					
ACI-410	Corrosion Inhibitor	Corrosion Inhibitor	MSDS and Non-MSDS Ingredients Listed Below					
WA-100	WST	Wetting Agent	MSDS and Non-MSDS Ingredients Listed Below					
IC-50S	WST	Iron Control	MSDS and Non-MSDS Ingredients Listed Below					
DF-36S	WST	Defoamer	MSDS and Non-MSDS Ingredients Listed Below					
Liberty Clean Out Fluid	Liberty Oilfield Services	Cleanup Solution	MSDS and Non-MSDS Ingredients Listed Below					
Bioclear 5000	Lubrizol	Biocide	MSDS and Non-MSDS Ingredients Listed Below					
Crystalline Silica Quartz	Liberty Oilfield Services	Sand	MSDS and Non-MSDS Ingredients Listed Below					
Surf-Flo 430C	Innospec	Flowback Additive	MSDS and Non-MSDS Ingredients Listed Below					
DFR-1S	Liberty Oilfield Services	Friction reduction	MSDS and Non-MSDS Ingredients Listed Below					
D206	Liberty Oilfield Services	Antifoam	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.					
			Crystalline Silica (quartz)	14808-60-7	99.9189%	*15,234,600*	*15.18599%*	
			Aluminum Oxide	1344-28-1	0.9902%	*152,497*	*0.15201%*	
			Water	7732-18-5	0.3706%	*57,069*	*0.05689%*	
			No hazardous ingredients	00-00-0	0.3046%	*46,917*	*0.04677%*	
			Alcohols, C12-15, ethoxylated	68131-39-5	0.1111%	*17,111*	*0.01706%*	
			Ethylene Oxide	75-21-8	0.1111%	*17,111*	*0.01706%*	
			Iron Oxide	1309-37-1	0.0990%	*15,250*	*0.01520%*	
			Titanium Oxide	13463-67-7	0.0990%	*15,250*	*0.01520%*	
			Hydrochloric Acid	7647-01-0	0.0654%	*10,071*	*0.01004%*	
			Alkyl Sulfonic Acid Amine Salt	Proprietary	0.0386%	*5,969*	*0.00597%*	
			Water	7732-18-5	0.0333%	*5,133*	*0.00512%*	
			Methanol	67-56-1	0.0333%	*5,133*	*0.00512%*	
			Petroleum distillates, hydrotreated light	64742-47-8	0.0268%	*4,128*	*0.00412%*	
			Alkyl Sulfonic Acid	Proprietary	0.0111%	*1,711*	*0.00171%*	
			Triethanolamine	102-71-6	0.0111%	*1,711*	*0.00171%*	
			Ethanolamine	141-43-5	0.0111%	*1,711*	*0.00171%*	
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	0.0031%	*474*	*0.00047%*	
			Polyhalide Resin	9051-89-2	0.0025%	*378*	*0.00038%*	
			Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branc	69011-36-5	0.0018%	*275*	*0.00027%*	
			Oxygenate and paraffinic stream	876065-86-0	0.0009%	*135*	*0.00013%*	
			Corrosion Inhibitor	Proprietary	0.0008%	*119*	*0.00012%*	
			Ethoxylated Decyl Alcohol	78330-20-8	0.0007%	*107*	*0.00011%*	
			2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	0.0006%	*98*	*0.00010%*	
			No Hazardous Ingredients	00-00-0	0.0005%	*84*	*0.00008%*	
			Methanol	67-56-1	0.0003%	*49*	*0.00004%*	
			Tridecyl alcohol	9043-30-5	0.0003%	*48*	*0.00004%*	
			C.I. Solvent Yellow 33	8003-22-3	0.0000%	*1*	*0.00000%*	
			Polypropylene Glycol	25322-69-4	0.0000%	*1*	*0.00000%*	
			Polydimethylsiloxane	63148-62-9	0.0000%	*1*	*0.00000%*	