

FORM NO. 22 R 10/09	SUBMIT IN QUADRUPPLICATE TO:	ARM 36.22.307 ARM 36.22.601	Lease Name: <b>Fred 15-22-27</b>
<b>MONTANA BOARD OF OIL AND GAS CONSERVATION</b> <b>2535 ST. JOHNS AVENUE, BILLINGS, MONTANA 59102</b>			Lease Type (Private/State/Federal): <b>Private</b>
Application for Permit To:			<b>RECEIVED</b>  <b>SEP 12 2022</b>
Drill <input checked="" type="checkbox"/>	Deepen <input type="checkbox"/>	Re-enter <input type="checkbox"/>	
Oil <input checked="" type="checkbox"/>	Gas <input type="checkbox"/>	Other <input type="checkbox"/>	Well Number: <b>#2H</b>
Operator: Kraken Operating LLC Address: 9805 Katy Freeway Suite 300 City: Houston State: TX Zip: 77024 Telephone Number: 713-360-7705			Field Name or Wildcat: <b>MONTANA BOARD OF OIL &amp; GAS CONSERVATION • BILLINGS</b> <b>Wildcat</b>
Surface Location of Well (quarter-quarter and footage measurements): NWNE Section 15, T27N, R57E - 369' FNL & 2273' FEL			Unit Name (if applicable): N/A
Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well: TD 25,238' MD, 10,130' TVD SWSW Section 27, T27N, R57E - 981' FSL & 550' FWL			Objective Formation(s): Middle Bakken
			Township, Range, and Section: Sec 15 T27N R57E
			County: Roosevelt County, MT
			Elevation (indicate GL or KB): 2121' GL
Size and description of drilling/spacing unit and applicable order, if any:		Formation at total depth:	Anticipated Spud Date:
1920 acres (Sec. 15, 22, 27 T27N-R57E), Order No. 66-2021		Middle Bakken	1/19/2023

Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
12 1/4	9 5/8	36#	J-55	1950	355	See Attached
8 3/4	7	32#	P-110	10564	671	See Attached
6	4 1/2	13.5#	P-110	25238	767	See Attached

Describe Proposed Operations:  
Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.  
See attachments for details

Kraken Operating, LLC requests variance to not run open hole logs on the subject well. Offset logs can be found for the State 44-10 (API # : 25-085-21154), SHL: 1208' FSL & 450' FEL SESE Sec. 10 T27N R57E.

BOARD USE ONLY	
Approved (date) <b>DEC 15 2022</b> By <u><i>Raymond Smith</i></u> Title <u><i>Tech Program Coordinator</i></u>	Permit Fee <b>\$150.00</b> Check Number <b>68423</b> Permit Expires <b>JUN 15 2023</b> Permit Number _____
THIS PERMIT IS SUBJECT TO THE CONDITIONS OF APPROVAL STATED ON THE BACK API Number: 25 - _____	
The undersigned hereby certifies that the information contained on this application is true and correct: Signed (Agent) <u><i>Ray Noah</i></u> Title <u>Regulatory Team Lead</u> Date <u>9/8/2022</u> Telephone Number <u>713-360-7705 EXT. 156</u>	

Samples Required: NONE  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

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SEP 12 2022

SUPPLEMENTAL INFORMATION

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

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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:

- No additional permits needed
- Stream crossing 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.

**Kraken Operating, LLC Proposed Well Stimulation**

Total Clean Fluid – 235,000 bbls

Maximum Anticipated Treating Pressure – 9,800 psi

**Hydraulic Fracturing Fluid Components Information Disclosure:**

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)**
Water	Operator	Carrier	Carrier				
Surf-Flu 430	Imnospec	Flowback Additive	MSDS and Non-MSDS Ingredients Listed Below	7732-18-5	100.00%	82,315,800.00	84.06572%
FRP-1S	Liberty Oilfield Services	Friction reduction	MSDS and Non-MSDS Ingredients Listed Below			7,435.80	0.00759%
DVA-75	Liberty Oilfield Services	Diverging Agent	MSDS and Non-MSDS Ingredients Listed Below			252,853.79	0.25823%
Blockear 5000	Lubrizol	Biocide	MSDS and Non-MSDS Ingredients Listed Below			469.00	0.00048%
ScaleCease 7103	Imnospec	Scale Inhibitor	MSDS and Non-MSDS Ingredients Listed Below			8,387.32	0.00857%
HCL-15	Liberty Oilfield Services	Solvent	MSDS and Non-MSDS Ingredients Listed Below			15,850.17	0.01619%
ACI-300	WST	Corrosion Inhibitor	MSDS and Non-MSDS Ingredients Listed Below			17,295.26	0.01766%
WA-100	WST	Wetting Agent	MSDS and Non-MSDS Ingredients Listed Below			67.43	0.00007%
IC-50S	WST	Iron Control	MSDS and Non-MSDS Ingredients Listed Below			34.79	0.00004%
Liberty Clean Out	Liberty Oilfield Services	Cleanup Solution	MSDS and Non-MSDS Ingredients Listed Below			125.74	0.00013%
Crystalline Silica	Liberty Oilfield Services	Sand	MSDS and Non-MSDS Ingredients Listed Below			74.86	0.00008%
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.							
	Liberty Oilfield Services	Sand	Crystalline Silica (quartz)	14808-60-7	99.90%	15,284,700.00	15.60963%
	Liberty Oilfield Services	Sand	Aluminum Oxide	1344-28-1	1.00%	153,000.00	0.15625%
	Liberty Oilfield Services	Friction reduction	Petroleum distillates, hydro treated light	64742-47-8	45.00%	113,784.20	0.11620%
	Liberty Oilfield Services	Sand	Iron Oxide	1309-57-1	0.10%	15,300.00	0.01563%
	Imnospec	Scale Inhibitor	Titanium Oxide	13463-67-7	0.10%	15,300.00	0.01563%
	Liberty Oilfield Services	Solvent	Water	7732-18-5	95.00%	15,057.66	0.01538%
	Liberty Oilfield Services	Friction reduction	Polyoxy-1,2-ethanediyl, a-tridecyl-w-hydroxy-, branched	7732-18-5	85.00%	14,700.97	0.01501%
	Imnospec	Flowback Additive	Water	69011-36-5	3.00%	7,585.61	0.00775%
	Liberty Oilfield Services	Solvent	Hydrochloric Acid	7732-18-5	95.00%	7,064.01	0.00721%
	Lubrizol	Biocide	2,2-dichloro-3-nitropropionamide	7647-01-0	15.00%	2,394.29	0.00365%
	Imnospec	Scale Inhibitor	BHMT Phosphonate	10222-01-2	10.00%	838.73	0.00086%
	Imnospec	Scale Inhibitor	Proprietary Ingredient	Proprietary	5.00%	792.51	0.00081%
	Imnospec	Flowback Additive	Dodecylbenzene sulfonate, triethanolamine salt	27323-41-7	10.00%	743.58	0.00076%
	Imnospec	Diverging Agent	Sodium Alpha Olefin Sulfonate	9051-89-2	100.00%	469.00	0.00048%
	Imnospec	Flowback Additive	Poly lactide Resin	9051-89-2	5.00%	371.79	0.00038%
	Liberty Oilfield Services	Flowback Additive	2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	60.00%	75.45	0.00008%
	Imnospec	Iron Control	Oxyanated and paraffinic stream	87605-86-0	99.00%	74.11	0.00008%
	Liberty Oilfield Services	Cleanup Solution	Ethoxyethyl Decyl Alcohol	78330-20-8	40.00%	13.92	0.00001%
	WST	Wetting Agent	2-Propyl-1-ol compound with methyloxirane	38172-91-7	15.00%	10.11	0.00001%
	Liberty Oilfield Services	Cleanup Solution	C.I. Solvent Yellow 33	8003-22-3	1.00%	0.75	0.00000%
	Imnospec	Flowback Additive	Triethanolamine	103-71-6	0.01%	0.67	0.00000%
	Imnospec	Flowback Additive	Ethanolamine	141-43-5	0.01%	0.67	0.00000%

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