

CHECKLIST ENVIRONMENTAL ASSESSMENT

Proposed Action: Approve Drilling Permit (Form 22)

Project/Well Name: Eleanor 1918 1H

Operator: Heritage Energy Operating, LLC

Location: SW SE Section 19 T28N R57E

County: Roosevelt MT; Field (or Wildcat): Wildcat

Proposed Project Date: 04/13/2023

I. DESCRIPTION OF ACTION

Heritage Energy Operating, LLC plans to drill a horizontal oil well in the Middle Bakken Formation 20,317' MD, 10,167' TVD. Surface casing to be set at 1,900'.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS, OR INDIVIDUALS CONTACTED

Montana Bureau of Mines and Geology, GWIC website (Roosevelt County Wells).

US Fish and Wildlife, Region 6 website

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Roosevelt County

Montana Natural Heritage Program Website (FWP)

Heritage State Rank= S1, S2, S3, T28N R57E

Montana Cadastral Website

Surface Ownership and surface use Section 19 T28N R57E

Montana Department of Natural Resources MEPA Submittal

2. ALTERNATIVES CONSIDERED

No Action Alternative: The proposed well would not be drilled.

Action Alternative: Heritage Energy Operating, LLC would have permission to drill the well.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

3. AIR QUALITY

Long drilling time: 5-7 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal in the Middle Bakken Formation 20,317' MD, 10,167' TVD.

Possible H₂S gas production: Yes, slight H₂S possible from Mississippian Formations.

In/near Class I air quality area: No Class I air quality area nearby.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211. AQB review.

Comments: No special concerns – using triple derrick rig to drill to 20,317' MD, 10,167' TVD. If there are no gas gathering systems nearby, associated gas can be flared under Board Rule 36.22.1220.

4. WATER QUALITY

Salt/oil-based mud: Yes, will drill with oil based invert drilling fluids for the intermediate casing hole.

Horizontal hole will be drilled with a salt-based mud. Surface casing hole will be drilled with freshwater and freshwater mud system, Rule 36.22.1001.

High water table: No high-water table anticipated at this surface location.

Surface drainage leads to live water: No, the closest drainage is an unnamed ephemeral drainage located about 300 feet to the west.

Water well contamination: None, surface hole will be drilled with freshwater and freshwater drilling fluids to 1,900', steel surface casing will be run and cemented to surface from 1,900' to protect any ground and surface waters. GWIC lists three stockwater wells with depths of 25', 77', and 160' and are located less than ¼ of a mile to the north and northwest. Another well listed as "unknown" with a depth of 71' is located about 2/5 of a mile to the southwest.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: None.

Groundwater vulnerability area: NA.

Mitigation:

☐ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other:

Comments: Steel surface casing will be run to 1,900' and cemented to surface to protect ground water. (Rule 36.22.1001).

5. SOILS/VEGETATION/LAND USE

Vegetation: Grassland.

Stream crossings: No stream crossings anticipated. Crossing only ephemeral drainages over existing county roads.

High erosion potential: No, a medium cut of 11.2' and a small fill of 3.5', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive, unused portion of this drillsite will be reclaimed.

Unusually large wellsite (Describe dimensions): A large well site 430' X 550'.

Damage to improvements: Slight surface use appears to for grazing.

Conflict with existing land use/values: Slight.

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other agency review (DFWP, federal agencies, DNRC Trust Lands)

Access Road: Access will be over Road 2058. A new access of 1.095' will be built into location.

Drilling fluids/solids: A closed loop system will be used for this well.

6. HEALTH HAZARDS/NOISE

Proximity to public facilities/residences: No residences located within a 1/4 a mile from the location.

Possibility of H2S: Yes, slight from Mississippian Formations.

Size of rig/length of drilling time: Triple derrick rig. 5-7 days drilling time.

Mitigation:

☒ Proper BOP equipment (Adequate surface casing cemented to surface, Rule 36.22.1001, with working BOP stack should mitigate any problems, (5,000 psi annular and double ram), Rule 36.22.1014.)

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other:

7. WILDLIFE/RECREATION

Sage Grouse: NA

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No.

Conflict with game range/refuge management: No.

Threatened or endangered Species: Species in the area identified as threatened or endangered by the USFWS in Roosevelt County are the Pallid Sturgeon, Whooping Crane, Piping Plover, and Northern Myotis. The Montana Natural Heritage Program lists two (2) species of concern in Sec. 19, T28N, R57E: The Veery and Whooping Crane.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DNRC Trust Lands)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other:

Comments: Private grazing surface lands. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what they would like done if a species of concern is discovered at this location.

IV. IMPACTS ON THE HUMAN POPULATION

8. HISTORICAL/CULTURAL/PALEONTOLOGICAL

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DNRC Trust Lands, federal agencies)

Other:

9. SOCIAL/ECONOMIC

Substantial effect on tax base

- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns.

IV. SUMMARY

No long term impacts expected. Some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

**EA Checklist
Prepared By:**

Name: John Gizicki
Title: Chief Field Inspector

Date: 03/31/23