

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Proposed Action: Approve Drilling Permit (Form 22)

Operator: Briscoe Petroleum, LLC

Well Name/Number: Kendrick Heirs 4-6

Location: Lot 4 Section 6 T01S R35E

County: Big Horn MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 4 to 5 days drilling time.

Unusually deep drilling (high horsepower rig): No, small single derrick drilling rig, about 500 HP (Estimated) to drill to 4,850' TD, Tensleep and Amsden Formation test.

Possible H2S gas production: No H2S anticipated.

In/near Class I air quality area: No not in a Class I air quality area.

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

Mitigation:

Air quality permit (AQB review)

Gas plants/pipelines available for sour gas

Special equipment/procedures requirements

Other: _____

Comments: No special concerns – using small rig to drill to 4,850' TD. If there aren't any gas gathering systems nearby, associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: No, freshwater, freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: Potentially, closest drainage is an unnamed ephemeral drainage to Little Ninemile Creek about 375' to the north. Little Ninemile Creek is 2/5 of a mile to the northeast.

Water well contamination: No water wells within a 1 mile radius from this location.

Surface hole in this well will be drilled to 240' with freshwater based drilling fluid. Steel surface casing will be run and cemented to surface to protect ground water. (Rule 36.22.1001)

Porous/permeable soils: No, sandy silty bentonitic soils.

Class I stream drainage: No Class I stream drainages.

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: 240' of surface casing cemented to surface adequate to protect freshwater zones (Rule 36.22.1001) Also, air/air mist and/or fresh water mud systems to be used.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated.

High erosion potential: Possible, large cut, up to 24.0' and large fill, up to 21.7', required.

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

Unusually large wellsite: No, 230'X180' location size required.

Damage to improvements: Slight, surface use is grass and sagebrush grazing land.

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 Sage Grouse Program

Comments: Access will be over existing county road and existing two track trail/lease road. Cuttings will be buried in an unlined reserve pit. Drilling fluids, if used, will be allowed to dry in the pit. Pits will be backfilled after drying. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residence within a one mile radius. Crow Indian Reservation is located about a mile to the south. The town of Hardin, MT is located 8.5 miles to the southwest.

Possibility of H2S: No H2S anticipated.

Size of rig/length of drilling time: Small drilling rig/short 4 to 5 days drilling time.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: _____

Comments: Adequate surface casing and operational BOP (3,000 psi annular) should mitigate any problems. (BOP's 3,000 psig annular) Rule 36.22.1014. No concerns

Wildlife/recreation

(possible concerns)

Sage Grouse: In general habitat. Program analysis in progress.

Proximity to sensitive wildlife areas (DFWP identified): In General Sage Grouse habitat.

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: Only species identified as threatened or endangered is the Black-footed Ferret. NH tracker website lists three (3) species of concern: Merriam's Shrew, Preble's Shrew, and Plains Hog-nosed Snake.

Mitigation:

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

Comments: Private cultivated 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 he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.. No concerns

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified

Mitigation

- avoidance (topographic tolerance, location exception)
- other agency review (SHPO, DNRC Trust Lands L, federal agencies)
- Other: _____

Comments: Private cultivated 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 he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.. No concerns.

Social/Economic

(possible concerns)

- Substantial effect on tax base
- Create demand for new governmental services
- Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

Well is a wildcat, 4,850' Tensleep and Amsden Formation test.

Summary: Evaluation of Impacts and Cumulative effects

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.

Prepared by (BOGC): /s/ John Gizicki
(title:) Compliance Specialist
Date: August 23, 2016

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Big Horn County water wells.
(subject discussed)

August 23, 2016 (date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Big Horn County
(subject discussed)

August 23, 2016
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T01S R35E
(subject discussed)

August 23, 2016
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 06 T01S R35E
(subject discussed)

August 23, 2016 (date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____