

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

Operator: Petroshale Energy LLC
Well Name/Number: Cobra 1A
Location: SW SW SE Section 36 T15N R14E
County: Judith Basin, **MT;** **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No short, 10 to 15 days drilling time.

Unusually deep drilling (high horsepower rig): No, small single drilling rig to drill to a 3,500' TD, Kibby Formation test.

Possible H₂S gas production: None anticipated.

In/near Class I air quality area: 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: Small single derrick drilling rig to drill to 3,500' TD.

Water Quality

(possible concerns)

Salt/oil based mud: No, air, freshwater and freshwater mud system to be used.

High water table: Possible high water table.

Surface drainage leads to live water: Closest drainage is the Judith River, about 1/4 of a mile to the south and southeast from this location.

Water well contamination: None, closest water wells are about 1/4 of a mile to the west southwest, 3/4 of a mile to the southeast and 3/4 of a mile to the west from this location, depth of these water wells range from 7' to 1245'. Surface hole will be drilled with freshwater to 350'. Steel surface casing will be run and cemented to surface to protect ground water. If productive 5 1/2" production casing will be run and cemented to protect surrounding deep water wells.

Porous/permeable soils: Yes, sandy rocky soils.

Class I stream drainage: Yes, Class I stream drainage nearby, Judith River.

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: Adequate surface casing to be set to 350' to protect surface water and water wells.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, streams to be crossed; Judith River will be crossed at a county road bridge crossing.

High erosion potential: No, small cut up to 1.6' and small fill up to 2.6', 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, small drillsite, 200'X200'.

Damage to improvements: Slight, surface use is abandoned hay field.

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 _____

Comments: Will utilize existing highway #239, county road and North River Road. A short access will be built off the county road into this location, about 640'. Unlined earthen pits will be utilized for drilling. Drilling fluids, mud solids and cuttings will be allowed to dry in the pits. When pits are dry they will be filled in with subsoil and topsoil spread.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 3/8 of a mile to the east, about 5/8 of a mile to the west, about 5/8 of a mile to the northeast and about 3/4 of a mile to the southeast from this location. The town of Hobson, Montana is about 1 mile to the southeast from this location.

Possibility of H2S: None anticipated.

Size of rig/length of drilling time: Small single derrick drilling rig/Short drilling time 10 to 15 days.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: _____

Comments: Adequate amount of surface casing and operational BOP equipment should mitigate any problems.

Wildlife/recreation

(possible concerns)

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

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: None

Conflict with game range/refuge management: None

Threatened or endangered Species: Threatened or endangered species identified are none. NH tracker website lists three (3) species of concern in T15N R14E, they are Sprague's Pipit, Wolverine and Whitebark Pine. NH tracker website lists zero (0) species of concern in this township and range, T15N R14E.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

Other: _____

Comments: Surface use is a private abandoned hay field. 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.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

avoidance (topographic tolerance, location exception)

other agency review (SHPO, DSL, federal agencies)

Other: _____

Comments: Surface use is a private abandoned hay field. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- Substantial effect on tax base
 - Create demand for new governmental services
 - Population increase or relocation
- Comments: No, impact expected from the drilling of this well.

Remarks or Special Concerns for this site

No special concerns about this wellsite. This is a Heath Formation test to be drilled to 3500' TD, Kibby Formation test well.

Summary: Evaluation of Impacts and Cumulative effects

No significant or long term impacts expected from the drilling of this well. Some short term impacts will occur.

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/Steven Sasaki
(title:) Chief Field Inspector
Date: November 8, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC
website
(Name and Agency)
Judith Basin County water
wells
(subject discussed)
November 8, 2011
(date)

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

November 8, 2011

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T15N R14E

(subject discussed)

November 8, 2011

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____