

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

**Operator:** Black Hills Exploration and Production, Inc.

**Well Name/Number:** Jerrel 11-34-16-42

**Location:** NW NW Section 34 T16N R42E

**County:** Garfield, MT; **Field (or Wildcat)** W/C

**Air Quality**

(possible concerns)

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

Unusually deep drilling (high horsepower rig): No, a triple/double drilling rig to drill to 6,700' TD Otter Formation vertical well test.

Possible H2S gas production: Slight H2S possible.

In/near Class I air quality area: No 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 triple drilling rig to drill to 6,700' TD

**Water Quality**

(possible concerns)

Salt/oil based mud: No, surface hole will be drilled with freshwater. Mainhole will be drilled with freshwater and freshwater drilling mud.

High water table: No high water table in the area of review.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Witchie Coulee, about 1/8 of a mile to the south from this location.

Water well contamination: Closest water wells are about 3/4 of a mile to the northwest, about 5/8 of a mile to the north northwest, about 3/4 of a mile to the south and about 1 mile to the southeast from this location. Depth of these wells range from 90' to 904'. This well will set 8 5/8" surface casing to 750' and cement to surface. Well will be drill with freshwater based drilling fluids from base of surface casing to 6700'TD, into the Otter Formation.

Porous/permeable soils: No, silty clay 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: Freshwater mud system to be used on surface hole. Freshwater mud system to be used from surface to 6700'. Fluids will be evaporated and/or trucked to a Class II disposal. Pit will be backfilled with at least 4' of cover. No concerns.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No live water stream crossings. Crossing only ephemeral drainages.

High erosion potential: No, small cut, up to 9.5' and small fill, up to 5.5', 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, a large location, 270X260' size required.

Damage to improvements: Slight, surface use is grass 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 Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be from existing county road, Jerrel Road and existing ranch trail. About 883' of new road will be constructed into this location. Freshwater drill cuttings and mud solids will be buried in the lined pit. Lined pit will backfilled with 4' of cover when dry. Drilling fluids will be either evaporated and/or trucked to a Class II disposal. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences within 1 mile of this location.

Possibility of H2S: Yes, possible.

Size of rig/length of drilling time: Triple derrick/double drilling rig, about 10 to 15 days drilling time.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: \_\_\_\_\_

Comments: Operational BOP and adequate surface casing should mitigate any problems. No concerns.

### 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: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened or endangered species identified are the Pallid Sturgeon, Piping Plover, Interior Least Tern and the Black Footed Ferret. Candidate species is the Greater Sage Grouse and Sprague's Pipit. Proposed species is the Mountain Plover. NH tracker website lists no species of concern in T16N R42E.

Mitigation:

- Avoidance (topographic tolerance/exception)
- Other agency review (DFWP, federal agencies, DSL)
- Screening/fencing of pits, drillsite
- Other: \_\_\_\_\_

Comments: Private grass surface lands used for grazing.

### 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: Private grass surface lands used for grazing. No concerns.

### Social/Economic

(possible concerns)

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

Comments: Well is a wildcat, until production is established no social or economic impact can be assessed.

### Remarks or Special Concerns for this site

Well is a wildcat 6700'TD Otter Formation vertical well test.

### Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. 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: June 8, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website

(Name and Agency)  
Garfield County water wells \_\_\_\_\_  
(subject discussed)  
June 8, 2011 \_\_\_\_\_  
(date)

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

June 8, 2011 \_\_\_\_\_  
(date)

Montana Natural Heritage Program Website (FWP)  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, T16N R42E  
(subject discussed)

June 8, 2011 \_\_\_\_\_  
(date)

If location was inspected before permit approval:  
Inspection date: \_\_\_\_\_  
Inspector: \_\_\_\_\_  
Others present during inspection: \_\_\_\_\_