

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

Operator: Cirque Resources LP
Well Name/Number: Hit Parade 31-3H
Location: NE NW Section 31 T11N R30E
County: Musselshell, MT; Field (or Wildcat) W/C

Air Quality

(possible concerns)

Long drilling time: No, 25 to 35 days drilling time.

Unusually deep drilling (high horsepower rig): No, a triple derrick drilling rig to drill vertically to 4265' TD, Otter Formation. Then if shows warrant to plug back and kickoff to drill a 9,664'MD/4600'TVD Heath Formation single lateral horizontal 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 vertically to 4265' TD, Otter Formation. Then if shows warrant to plug back and kickoff to drill a 9,664'MD/4600'TVD Heath Formation single lateral horizontal well test.

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 North Willow Creek, adjacent to the south edge of this location.

Water well contamination: No water wells within 1 mile or further from this location.

This well will set 9 5/8" surface casing to 3350' and cement to surface. Well will be drill with freshwater based drilling fluids from base of surface casing to 4265'TVD, into the Otter formation. Well will be plugged back. Well will be kicked off into the Heath Formation for a 9,664'MD/4600'TVD, single lateral horizontal well test.

Porous/permeable soils: No, silty "gumbo" 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 500'. Freshwater drilling fluids will be used from 500' to vertical TD 4265' and plugback to 9,664'MD/4600'TVD in the lateral. Freshwater drilled cuttings and mud solids will be fly-ashed prior to burial in the lined pit. Freshwater drilling fluids will be land applied. Pit solids will be left in the lined pit and backfilled with at least 4' of cover when dry or land farmed. No concerns.

Soils/Vegetation/Land Use

(possible concerns)

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

High erosion potential: No, small cut, up to 6.2' and small fill, up to 4.1', 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, 400'X310' size required.

Damage to improvements: Slight, surface use is 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, Ragged Point Road. Access road to be built from Ragged Point Road into location, about 2592'. Freshwater drill cuttings and mud solids will be land farmed or buried in the lined pit. Lined pit will backfilled with 4' of cover when dry. Freshwater drilling fluids will be land applied. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences within 1 mile in any direction from this location.

Possibility of H2S: Yes, possible.

Size of rig/length of drilling time: Triple derrick drilling rig, about 25 to 35 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 is the Black Footed Ferret. Candidate species is the Greater Sage Grouse and Sprague's Pipit. Proposed species is the Mountain Plover. NH tracker website only lists the Greater Sage Grouse, Loggerhead Shrike, Sage Thrasher and Brewers Sparrow as a species of concern in T11N R30E.

Mitigation:

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

Comments: Private surface grazing lands with white alkali outcrops.

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 9,664'MD/4600'TVD Heath Formation single lateral horizontal 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: May 10, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website

(Name and Agency)

Musselshell County water wells

(subject discussed)

April 22, 2011

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES

MONTANA COUNTIES, Musselshell County

(subject discussed)

April 22, 2011

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T11N R30E

(subject discussed)

April 22, 2011 & May 10, 2011

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____