

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

**Operator:** Continental Resources, Inc.  
**Well Name/Number:** Davies 1-20H  
**Location:** SW SE Section 20T26N R54E  
**County:** Richland, **MT;** **Field (or Wildcat)** W/C (Bakken Horizontal)

**Air Quality**

(possible concerns)

Long drilling time: No, 30 to 40 days drilling time.

Unusually deep drilling (high horsepower rig): No, 19,572'MD/9,508'TVD single lateral horizontal Bakken Formation well.

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 rig to drill to 19,572'MD/9,508'TVD single lateral horizontal Bakken Formation well.

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes, oil based invert drilling fluid system on mainhole and saltwater for the horizontal lateral. Freshwater and freshwater mud system on surface hole.

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

Surface drainage leads to live water: No, unnamed ephemeral tributary drainage to Shack Creek, about 1/8 of a mile to the northwest from this location.

Water well contamination: No, nearest water well is 3/4 of a mile to the from this location. Depth of water wells are less than 76'. Surface hole must be drilled with freshwater and freshwater mud. Surface casing will be set at 1429' and cemented to surface.

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

Class I stream drainage: No Class I stream drainages in the area of review.

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: 1429' of surface casing cemented to surface adequate to protect freshwater zones.

**Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: No stream crossings anticipated, only crossing ephemeral drainages.  
High erosion potential: No, small cut, up to 7.7' and moderate fill, up to 14.7', 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, 500'X270' location size required.  
Damage to improvements: Slight, surface use cultivated 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 \_\_\_\_\_

Comments: Will use existing county road, #321. About 3280' of new access road will be built into this location, off county road, #321. Drill cutting will be disposed of in the lined reserve pit. Invert drilling fluids will be recycled. Reserve pit fluids will be recycled and/or haul to a commercial disposal. Lined reserve pit will be backfilled when dry. No special concerns

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest buildings are 1 mile and further in any direction from this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig/short 30 to 40 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 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: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane. Species listed as candidate species are the Greater Sage Grouse and Sprague's Pipit. NH tracker website for this Township and Range lists only one (1) species of concern as the Eastern Red Bat.

Mitigation:

- Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

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

Comments: Private cultivated surface lands. There maybe 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: On private cultivated surface lands. There maybe 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 concerns.

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### Remarks or Special Concerns for this site

Well is a 19,572'MD/9,508'TVD single lateral horizontal Bakken Formation well.

### Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected, some short term impacts will occur.

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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: October 5, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

October 5, 2011

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES

MONTANA COUNTIES, Richland County

(subject discussed)

October 5, 2011

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T26N R54E

(subject discussed)

October 5, 2011

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_