

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

Operator: Chaparral Energy, LLC  
Well Name/Number: SChow 1-5H  
Location: N/2 N/2 Section 5 T25 R56E  
County: Richland, MT; Field (or Wildcat) Wildcat(Bakken Horizontal)

**Air Quality**

(possible concerns)

Long drilling time No, 40-50 days drilling time.  
Unusually deep drilling (high horsepower rig) Triple derrick rig 900 HP, Bakken horizontal No. 1 TVD 10,060' MD 14,600' No.2 TVD 10,070' MD 14,500'  
Possible H2S gas production slight  
In/near Class I air quality area No  
Air quality permit for flaring/venting (if productive) Yes, if productive. DEQ air quality permit required.

Mitigation:

- Air quality permit (AQB review)
- Gas plants/pipelines available for sour gas
- Special equipment/procedures requirements
- Other: \_\_\_\_\_

Comments: \_\_\_\_\_

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**Water Quality**

(possible concerns)

Salt/oil based mud yes to long string salt based and oil based drilling fluids. Horizontal legs will be drilled with brine water. Surface casing hole to be drilled with freshwater and freshwater mud.  
High water table No  
Surface drainage leads to live water No, nearest ephemeral drainage is an unnamed tributary to Hardscrabble Creek, about 3/4 of a mile to the west and intermittent pond about 1 mile to the northwest of this well location.  
Water well contamination No, all water wells close by are shallower than 2500'. Surface hole will be drilled with freshwater and freshwater mud. Surface casing will be set to 2500' and cemented back to surface.  
Porous/permeable soils No, gumbo 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: 2500' surface casing well below freshwater zones in adjacent water wells. Also covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent any.

**Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings None

High erosion potential No, location has a moderate cut of up to 23.1' and a moderate fill of up to 17.0', required.

Loss of soil productivity None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite No, large well site 400'X300'

Damage to improvements Slight.

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: Access will be using existing county roads. A short access road will be built from the county road into location about 62'. Cuttings will be buried in the lined reserve pit. Pit fluids will be recycled to the next location or hauled to a commercial disposal.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences closest residence is 3/4 of a mile to the west and the town of Andes about 1 1/2 mile to the east of this location.

Possibility of H2S Slight

Size of rig/length of drilling time Triple drilling rig 40 to 50 days drilling time.

Mitigation:

- Proper BOP equipment
- Topographic sound barriers
- H2S contingency and/or evacuation plan
- Special equipment/procedures requirements
- Other: \_\_\_\_\_

Comments: 2500 is adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Distance sufficient to mitigate noise.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified) n/a 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 No

Mitigation:

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

Comments: no concerns

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**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 surface

**Social/Economic**

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns

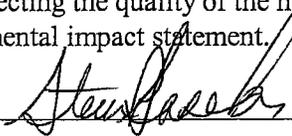
**Remarks or Special Concerns for this site**

TVD 10,070' MD 14,600' 2 legged Bakken Formation horizontal well

**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): Steven Sasaki 

(title): Chief Field Inspector

Date: February 6, 2006

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website

(Name and Agency)

Richland County water wells

(subject discussed)

February 3, 2006

(date)

If location was inspected before permit approval:

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

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

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