

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

**Operator:** XTO Energy, Inc.  
**Well Name/Number:** Elaine 34X-21  
**Location:** SW SE Section 21 T24N R56E  
**County:** Richland, MT; Field (or Wildcat) Wildcat

**Air Quality**

(possible concerns)

Long drilling time: No, 25-35 days drilling time.  
Unusually deep drilling (high horsepower rig): Triple derrick rig to drill a single lateral horizontal Bakken Formation well, 18,708' MD/10,424' TVD.  
Possible H2S gas production: Slight chance of H2S.  
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 rule 75-2-211.

Mitigation:

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

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes, intermediate casing string hole to be drilled with oil based invert drilling fluids. Horizontal lateral hole to be drilled with brine water. Surface casing hole to be drilled with freshwater and freshwater mud.  
High water table: No high water table anticipated.  
Surface drainage leads to live water: No, closest drainages are unnamed ephemeral drainage, about 1/2 of a mile to the east, about 1/2 of a mile to the west and about 1/4 of a mile to the northwest from this location.  
Water well contamination: No, closest water wells are about 1/2 of a mile to the southwest, about 1/2 of a mile to the northwest and all other wells are 1 mile and further from this location. These stock and domestic water wells range from 27' to 380' in deep. 2,000' of surface casing will be set and cemented to surface to protect groundwater.  
Porous/permeable soils: No, sandy 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: 2000' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems.

**Soils/Vegetation/Land Use**

(possible concerns)

Steam crossings: None, crossing only ephemeral drainages.  
High erosion potential: No, moderate cut up to 11.0' of cut and small fill up to 8.2', 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 430'X330'  
Damage to improvements: Slight, surface use appears to cultivate 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 over existing county road, #332 and existing XTO well access road for the Hill 34X-21 wellsite. An access will be built from the existing wellsite into this location, about 55' of new access road will be constructed. Operator will utilize a closed mud system. Oil based invert drilling fluids will be recycled. Freshwater surface hole cuttings will be disposed of offsite. Oil based drill cuttings will be disposed of offsite. Completion pit fluids will be hauled to a licensed saltwater disposal. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Yes, residences, about 1/4 of a mile to the southwest and about 3/4 of mile to the west from this location.

Possibility of H2S: Slight chance of H2S

Size of rig/length of drilling time: Triple drilling rig 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: Adequate surface casing 2000' cemented to surface with working BOP stack should mitigate any problems. Noise should not be a problems, sufficient distance from residence to rig should mitigate this.

### 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 listed in Richland county by USFW service are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane. Candidate species are the Greater Sage Grouse and Sprague's Pipit. NH tracker lists no species of concern in this Township and Range.

Mitigation:

- Avoidance (topographic tolerance/exception)
- Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

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

Comments: Surface location is on private cultivated land with no nearby live water. 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 cultivated land. No concerns.

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**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**

Single lateral horizontal Bakken Formation well, 18,708' MD/10,424' TVD.

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**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: February 17, 2011

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Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website.

(Name and Agency) \_\_\_\_\_

Water wells in Richland County

(subject discussed)

February 17, 2011  
(date)

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

February 17, 2011  
(date)

Montana Natural Heritage Program Website  
(Name and Agency)  
Heritage State Rank= S1, S2, S3 in T24N R56E  
(subject discussed)

February 17, 2011  
(date)

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