

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

**Operator:** XTO Energy, Inc.  
**Well Name/Number:** Sonny 24X-16  
**Location:** SW Lot 5 Section 16 T22N R59E  
**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): A triple derrick rig, estimated 900-1000 HP to drill a single lateral Bakken Formation Horizontal Lateral, 18,511' MD/10,111' TVD.

Possible H<sub>2</sub>S gas production: Slight

In/near Class I air quality area: No, not in a 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 pipeline for H<sub>2</sub>S gas and sweet gas in the area. \_\_\_\_\_

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**Water Quality**

(possible concerns)

Salt/oil based mud: Yes to intermediate casing string hole, oil based invert drilling fluids. Saltwater for the horizontal openhole lateral. 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: Yes, closest live water is the Yellowstone River, about 1/2 of a mile to the west from this location.

Water well contamination: None, surface hole will be drilled with freshwater and freshwater drilling fluids to 1,500', steel surface casing will be run and cemented to surface from 1500' to protect any ground and surface waters. Numerous water wells within about 1/2 of a mile from this location. Depth of these domestic and stock water wells are from 1' and 1380'.

Porous/permeable soils: Yes, sandy clay soils.

Class I stream drainage: Yes, Class I stream drainage.

Mitigation:

Lined reserve pit

Adequate surface casing

Berms/dykes, re-routed drainage

Closed mud system

Off-site disposal of liquids (in approved facility)

Other: Offsite disposal of oil based cuttings and solids.

Comments: 1500' of surface casing is enough surface casing to cover Base Fox Hills Formation.

Surface hole will be drilled with freshwater and freshwater drilling muds to 1500'. Steel surface casing will be run to 1500' and cemented to surface. Oilbased invert drilling fluids will be recycled. Drill cuttings will be disposed of offsite. After the well has been completed, completions fluids will go to a commercial Class II disposal.

**Soils/Vegetation/Land Use**

(possible concerns)

Steam crossings: None, anticipated.  
 High erosion potential: No high erosion potential, no cut, 0.0' and small fill, up to 4.6', required.  
 Loss of soil productivity: None, location to be restored after drilling well, if well is 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 is irrigated cropland.  
 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, #23 and well access road. A short new access road will be built into this location. Oil based drilling fluids will be recycled. Completion fluids will be hauled to a Class II commercial disposal. Drill cuttings will be buried in the lined reserve pit. No concerns.

**Health Hazards/Noise**

(possible concerns)  
 Proximity to public facilities/residences: Closest residences about 1/8 of a mile to the east and 1/4 of a mile to the southwest of this location. Rau School about 1/4 of a mile to the northeast from this location.  
 Possibility of H2S: Slight  
 Size of rig/length of drilling time: Triple derrick 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 cemented to surface with working BOP stack should mitigate any problems.

**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, no game range/refuge in the area.  
 Threatened or endangered Species: Threatened or endangered species identified by USFWS in Richland County are the Pallid Sturgeon, Whooping Crane, Interior Lease Tern and Piping Plover.  
 Mitigation:  
 Avoidance (topographic tolerance/exception)  
 Other agency review (DFWP, federal agencies, DSL)  
 Screening/fencing of pits, drillsite  
 Other: \_\_\_\_\_  
 Comments: Private irrigated cultivated surface lands. No concerns.

**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 irrigated cultivated surface lands. No concerns.

**Social/Economic**

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: Horizontal Bakken Formation development oil well to an existing spacing unit. No concerns.

**Remarks or Special Concerns for this site**

Single lateral Bakken Formation development horizontal well 18,511'MD/10,111'TVD.

**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: February 18, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

February 18, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA

COUNTIES, Richland County

February 18, 2010 \_\_\_\_\_  
(date)

If location was inspected before permit approval:

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

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

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