

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

**Operator:** EOG Resources, Inc.  
**Well Name/Number:** Anna No. 3-03H  
**Location:** NW SW Section 3 T25N R53E  
**County:** Richland, MT; Field (or Wildcat) Wildcat

**Air Quality**

(possible concerns)

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

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill to 15,939MD/9,339'TVD, single lateral horizontal Bakken Formation well.

Possible H2S gas production: Slight chance of H2S gas production.

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 hole will be drilled with an oil based invert drilling fluids.

Produced brine water to be used in horizontal 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: No, closest drainage are unnamed ephemeral tributary drainages to West Charlie Creek, are about 1/32 of a mile to the northwest, about 1/8 of a mile to the west and about 1/4 of a mile to the southeast from this location.

Water well contamination: No, nearby water wells, all water wells are at least 1 mile distant and are all less than 360' in depth. Surface casing will be drilled with freshwater mud system, steel casing set to 1,128' and cemented to surface.

Porous/permeable soils: No, 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: 1,128' of surface casing will be set well below freshwater zones in adjacent water wells, also, covering the base of the Fox Hills aquifer. Adequate surface casing and operational BOP equipment should mitigate any problems.

**Soils/Vegetation/Land Use**

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No, location will require small cut, up to 6.1' and a moderate fill, up to 15.6', required.

Loss of soil productivity: Slight, location to be restored after drilling well if well is nonproductive. If productive unused portion of wellsite will be reclaimed.

Unusually large wellsite: No, large well site 450'X330'

Damage to improvements: Surface use appears to be grassland.

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 over existing county roads and existing well access road, Anna 2-3H. An access road of about 1047' will be constructed off the existing Anna 2-3H access road into this well location. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to a commercial Class II disposal. Drill cutting and mud solids will be disposed of in the lined reserve pit. Reserve pit will be allowed to dry and will be buried with subsoil clays. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences or buildings within 1 mile of this drillsite..

Possibility of H2S Possibility of H2S gas is slight.

Size of rig/length of drilling time: Triple drilling rig 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 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 refuge/management area nearby.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website 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: NH tracker website lists no species of concern. 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 surface grasslands. No concerns.

**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**

15,939MD/9,339'TVD Bakken formation single lateral horizontal well. No concerns.

**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: April 14, 2011

Other Persons Contacted:

\_\_\_\_\_

(Name and Agency)

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

(subject discussed)

Water wells in Richland County

(date)

April 14, 2011

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County

(subject discussed)

April 14, 2011

(date)

Montana Natural Heritage Program, NH Tracker Website, Montana FWP

(Name and Agency)

Species of Concern, mammals and birds T25N R53E S1,S2, S3

(subject discussed)

April 14, 2011

(date)

If location was inspected before permit approval:

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

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

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