

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

Operator: Enerplus Resources (USA) Corporation
Well Name/Number: Leghorn-Gityup No.33-15-HID3
Location: SW SE Section 33 T23N R58E
County: Richland, MT; **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig 900-1000 HP, single lateral Bakken Formation development well MD 14,724' and 10,405' TVD.

Possible H2S gas production: Slight

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: Existing pipeline for gas in the area.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string casing hole will be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with invert oil based drilling fluids. Surface casing hole to be drilled with freshwater and freshwater mud.

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

Surface drainage leads to live water: No, closest ephemeral drainages are unnamed tributary drainages to the Lone Tree Creek, about 3/16 of a mile to the north from this location and Spring Coulee, about 3/8 of a mile to the south and southeast from this location. .

Water well contamination: No, closest water well is about 5/8 of a mile to the north from this location. Depth for this well is 167'. All other water wells are 1 mile or further from this location. This well will be drilled with freshwater and freshwater drilling fluids to a depth of 1757'. Steel surface casing will be run and cemented to surface from 1757' to protect ground waters.

Porous/permeable soils: No, sandy 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: 1757' of surface casing is not enough according to Base of the Fox Hills map.

Recommend a minimum surface casing of 1786' should be set well below freshwater zones in adjacent water wells and to cover the Base of the Fox Hills aquifer. Surface hole will be drilled with freshwater and freshwater drilling fluids. Adequate surface casing and operational BOP equipment will prevent problems.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossings required.

High erosion potential: No, location has a small cut of 1.4' and small fill of up to 1.3', 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'X300'.

Damage to improvements: Slight, surface use is cultivated fields.

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, 124. About 300' of new access is proposed to be built to access this location from the existing well access road.. Oil based invert muds will be recycled and cuttings will be buried in a lined pit. Any excess fluid left from drilling and completion operations in the reserve pit will be hauled to a commercial Class II disposal. Pit will be allowed to dry and subsoil clays mixed with the cuttings. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1/2 of a mile to the west from this location. The town of Sidney, Montana is 8.6 miles to the east from this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig 20 to 30 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

Threatened or endangered Species: Species identified as threatened or endangered by the USWS are the Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

Other: _____
Comments: Private 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 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: Development horizontal Bakken Formation well in this existing spacing unit.

Remarks or Special Concerns for this site

Development well in an existing 640 acre spacing unit, Section 33 T23N R58E. No concerns

Summary: Evaluation of Impacts and Cumulative effects

MD 14,724' and 10,405' TVD Bakken Formation horizontal well. No long term impacts expected, some short term impacts are expected with the drilling of this well.

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 30, 2010

Other Persons Contacted:

(Name and Agency)
Montana Bureau of Mines and Geology, Groundwater Information Center website, Richland County water wells
(subject discussed)
April 30, 2010
(date)

USFWS Threatened, Endangered, Proposed and Candidate Species Montana Counties
website _____

(Name and Agency)

Threatened or Endangered Endanger species _____

(subject discussed)

April 30, 2010 _____

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____