

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

Operator: Lyco Energy Corporation
Well Name/Number: Buffalo-Vivian 22-2-H
Location: NW NE Section 22 T24 R55E
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 rig 900 HP, Bakken horizontal TVD 9,993'
MD 19,582'
Possible H2S gas production slight
In/near Class I air quality area No
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 gas in the area.

Water Quality

(possible concerns)

Salt/oil based mud yes to long string salt based and oil based drilling fluids. Surface casing hole to be
drilled with freshwater and freshwater mud.
High water table No
Surface drainage leads to live water No, nearest unnamed ephemeral tributary drainage to East Charlie
Creek is 1/8 of a mile to the east of this location.
Water well contamination No, all water wells close by are shallower than 1700'.
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: 1700'+/- 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 small cut of 9.3' and a small fill of 8.8', required.
Loss of soil productivity None, location to be restored after drilling well, if nonproductive. If productive
Unusually large wellsite No, large well site 450'X310'

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 over existing county roads, #133. A short access road off the county road into location will be constructed, about 64'. Oil based muds will be recycled or hauled to a commercial disposal, cuttings will be disposed of in a lined pit. Pit will be solidified with subsoil in the lined pit and clean cover and top soil put over the solidified pit contents.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences closest residence is 1/8 mile to the east and 3/8 of a mile to the west of this location.

Possibility of H2S 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: 1700+ 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

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. Second well in this spacing unit.

Remarks or Special Concerns for this site

TVD 9,993' MD 19,582' 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: April 4, 2006

Other Persons Contacted:

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

(Name and Agency)

Richland County water wells

(subject discussed)

April 4, 2006

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____