

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

Operator: Slawson Exploration Company, Inc.
Well Name/Number: Ruffian 1-18MLH
Location: SE SE Section 18 T24N R52E
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 drilling rig to drill a dual lateral Bakken Formation well, No. 1 (NW NW) Lot #4 13,333' MD/8858' TVD and No. 2 NE NE 13,411' MD/8858' TVD.

Possible H2S gas production: Slight chance of H2S gas from the Mississippian Formations.

In/near Class I air quality area: No Class I air quality area nearby.

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: Dual Lateral Bakken Formation horizontal well No. 1 (NW NW) Lot #4 13,333' MD/8858' TVD and No. 2 NE NE 13,411' MD/8858' TVD. If there is an existing pipeline for associated gas/H2S gas in the area then gas can be gathered or if no gathering system nearby associated gas/H2S gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string hole to be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with oil based invert drilling fluids. Surface casing hole will use freshwater and freshwater mud system, Rule 36.22.1001.

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

Surface drainage leads to live water: Yes, closest drainage are unnamed ephemeral tributary to East Redwater Creek, about 1/8 of a mile to the northeast and about 5/8 of a mile to the west of this location.

Water well contamination No, closest water wells are about 5/8 of a mile to the northwest, about 7/8 of a mile to the northwest, about 7/8 of a mile to the northeast and 1.125 miles to the northeast from this location. These water wells are stock and domestic and range in depth from 20' to 300'. Surface hole will be drilled with freshwater and freshwater drilling fluids, Rule 36.22.1001. Surface casing will be set to 1550' and cemented back to surface, Rule 36.22.1001.

Porous/permeable soils: No, silty/sandy clay soils.

Class I stream drainage No, Class I stream drainages in the area of review.

Mitigation:

Lined reserve pit

Adequate surface casing

Berms/dykes, re-routed drainage

Closed mud system

Off-site disposal of liquids (in approved facility)

Other: Cuttings pit will be lined with a 12 mil liner. All cuttings will be stabilized and buried in the lined cuttings pit on the wellsite.

Comments: 1550' surface casing well below freshwater zones in adjacent water wells. Also, covering the Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems (BOP's

5,000 psig annular, pipe and blind rams), Rule 36.22.1014.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated, crossing only ephemeral drainages to the wellsite.

High erosion potential: Yes possible high erosion potential on steep fill slopes, location will require small cut of up to 5.5' and moderate fill of 19.8', 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 350'X360'

Damage to improvements: Slight, surface use cultivated land.

Conflict with existing land use/values: Slight, surface use cultivated land.

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 road #308. About 5256' of new access road will be built off the county road into this location. Operator will utilize a closed loop mud system. Cuttings and mud solids will be disposed of in the lined cuttings pit and solidified. Oil based invert drilling fluids will be recycled to the next location or recycled back to the mud company's storage tanks. All completion fluids will be hauled to a Class II commercial saltwater disposal. No Concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences within 1 mile of the location.

Possibility of H2S: Slight chance of H2S gas from Mississippian Formation.

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 a working BOP stack should mitigate any problems, (BOP's 5,000psig annular, pipe and blind rams) rule 36.22.1014.

Distance to nearest residence sufficient to mitigate any noise 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: None in the area.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Least Tern, Whooping Crane and Piping Plover. Candidate species are the Sprague's Pipit and the Greater Sage Grouse. NH tracker website indicates one (1) species of concern in this area, Iowa Darter.

Mitigation:

- Avoidance (topographic tolerance/exception)
- Other agency review (DFWP, federal agencies, DSL)
- Screening/fencing of pits, drillsite
- Other: _____

Comments: This is private cultivated surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern are discovered at this location. No live water near this property to impact Iowa Darter.

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: This is private cultivated surface lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite.

Social/Economic

(possible concerns)

- Substantial effect on tax base
- Create demand for new governmental services
- Population increase or relocation

Comments: Wildcat well. No concerns.

Remarks or Special Concerns for this site

Dual Lateral Bakken Formation horizontal well. Lateral No. 1 (NW NW) Lot #4 13,333' MD/8858' TVD and Lateral No. 2 NE NE 13,411' MD/8858' 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: April 16, 2013

Other Persons Contacted:

Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County, Montana

(subject discussed)

April 16, 2013

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

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

(subject discussed)

April 16, 2013

(date)

Montana Natural Heritage Program Website

(Name and Agency)

Heritage State Rank= S1, S2, S3 T24N R52E

(subject discussed)

April 16, 2013

(date)

Montana Cadastral Website

(Name and Agency)

Surface Ownership and surface use Section 18 T24N R52E

(subject discussed)

April 16, 2013

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____