

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: Slawson Exploration Company, Inc.

Well Name/Number: Lochaber 1-5H

Location: SW SW Section 32 T22N R58E

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): Triple derrick rig to drill a single lateral horizontal Bakken Formation test, 14,999' MD/10,348' TVD.

Possible H₂S gas production: Possible H₂S gas from Mississippian Formations.

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: Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 14,999' MD/10,348' TVD. If there is an existing pipeline for gas gathering in the area, associated gas can be gathered or if no gathering system nearby associated 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.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Fox Creek, about 1/4 of a mile to the northwest from this location. Fox Creek is about 1/2 of a mile to the northwest from this location.

Water well contamination: None, closest water wells are about 3/8 of a mile to the southeast, about 5/8 of a mile to the southwest, about 5/8 of a mile to the east northeast and about 3/4 of a mile to the southeast from this location. Depth of these stock and domestic water wells range from 38' to 220'. This drilling permit states it will drill surface hole with freshwater to 1550'. Recommend that 1604' minimum amount of surface hole should be drilled and 1604' of steel surface casing and cement it to surface.

Porous/permeable soils: No, 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 solids/liquids (in approved facility)

Other: _____

Comments: 1550' surface casing is what is anticipated by the operator on the permit. I recommend that 1604' of surface casing be set in this well which should put the surface casing below freshwater zones in adjacent water wells and also covering Fox Hills aquifer. Adequate surface casing

and operational BOP equipment should prevent any hole pressure problems.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No high erosion potential on this location, location needs a small cut, up to 4.4' and a small fill, up to 9.1', 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 405'X450' for a dual well location, Lochaber 1-5H and Carbine 1-32H.

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

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, #448. Will construct/upgrade about 263' of new access road into this location off the existing county road. Oil based invert drilling fluids will be recycled.

Completion fluids will be trucked to a Class II disposal. Operator will utilize a closed mud system.

Cuttings and mud solids will be disposed of in the lined cuttings pit. Cuttings pit will be allowed to dry and then backfilled with subsoil clays. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about ¾ of a mile to the northeast and about 1.125 miles to the southeast from this location. The town of Crane is about 3.6 miles to the southeast from this location. The town of Sidney, Montana is about 9.25 miles to the northeast from this location.

Possibility of H2S: Possible H2S gas from Mississippian Formations.

Size of rig/length of drilling time: Triple 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. (BOP's 5,000psig annular, pipe and blind rams) rule 36.22.1014.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Little Missouri National Grasslands, about 12.5 miles to the east in North Dakota.

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 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 four (4) species of concern are the Hoary Bat, Meadow Jumping Mice, Evening Grosbeak and Whooping Crane.

Mitigation:

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

Comments: Private cultivated lands, There may be 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. The Board of Oil & Gas has no jurisdiction over private surface lands.

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 lands. There may be 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. The Board of Oil & Gas has no jurisdiction over private surface lands.

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

A single lateral horizontal Bakken Formation well test, 14,999' MD/10,348' 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: June 24, 2012

Other Persons Contacted:

Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County, Montana

(subject discussed)

June 24, 2012

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

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

(subject discussed)

June 23, 2012

(date)

Montana Natural Heritage Program Website

(Name and Agency)

Heritage State Rank= S1, S2, S3 T22N R58E

(subject discussed)

June 23, 2012

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____