

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: G3 Operating LLC
Well Name/Number: Sorensen 1-6-7H
Location: NW NE Lot 2 Section 6 T29N R57E
County: Roosevelt, 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 a single lateral horizontal Bakken Formation wildcat well test to 19,857' MD/10,132' TVD.

Possible H2S gas production: Yes, slight H2S possible 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: Plan is to drill a single lateral horizontal Bakken Formation test, 19,857' MD/10,132' TVD. If there are existing pipelines for natural gas in the area then associated gas must be tied into system 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 oil based invert drilling fluids for intermediate casing hole. Horizontal hole will be drilled with saltwater. Surface casing hole will be drilled with freshwater and freshwater mud system. (Rule 36.22.1001)

High water table: No high water table anticipated.

Surface drainage leads to live water: No, nearest drainages are an unnamed ephemeral tributary drainage to Sheep Creek, about 1/4 of a mile to the west and Lost Creek, an ephemeral drainage, about 5/8 of a mile to the northwest from this location. Within both these drainages, there are stock ponds.

Water well contamination: No, closest water wells are about 5/8 of a mile to the southeast, about 3/4 of a mile to the southwest, from this location. Depth of this stock and irrigation water wells range from 90' to 270'. This well will be drilled with freshwater and freshwater mud to 1,740' and steel surface casing will be run and cemented to surface to protect groundwater, also covering the base of the Fox Hills Formation. (Rule 36.22.1001)

Porous/permeable soils: No, sandy 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: 1,740' surface casing will be drilled with freshwater, steel casing will be run to 1,740'

and cemented back to surface, to protect freshwater zones in adjacent water wells. (Rule 36.22.1001) Also, covering Fox Hills aquifer. Adequate surface casing cemented to surface and operational BOP equipment should 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.

High erosion potential: No, location will require a moderate cut of up to 15.5' and small fill of up to 3.1', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive unused portion of this drillsite will be reclaimed.

Unusually large wellsite: No, very large well site 375' X490'.

Damage to improvements: Slight surface use appears to be a cultivated field.

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, CR 2048. New access road will be built, about 240' off the existing county road into this location. Oil based invert drilling fluids will be recycled. Completion fluids will hauled to a commercial Class II disposal. Cuttings and solids will be buried/solidified(fly-ashed) in the lined cuttings pit. The pit will be allowed to dry and then pit will be backfilled with a minimum of 4' of cover over the top of the cuttings. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences about 1 mile to the southeast, about 1.25 miles to the south southwest and 1.5 miles to the southwest from this location. The Town of McCabe, MT is about 4.1 miles to the southwest and the town of Froid, MT is about 6.5 miles to the northwest from this location.

Possibility of H2S: Yes, slight from the Mississippian Formations.

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. (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Medicine Lake National Wildlife Refuge boundary is about 9 miles to the north from this location.

Proximity to recreation sites: Medicine Lake National Wildlife Refuge boundary is about 9 miles to the north from this location.

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 is the Sprague's Pipit. NH tracker website indicates species of concern four (4): Baird's Sparrow, Whooping Crane, Iowa Darter and Pearl Dace.

Mitigation:

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

Comments: Private cultivated surface land. No live water nearby. 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 is 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 surface land. 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: Wildcat well. No concerns

Remarks or Special Concerns for this site

Plan to drill a single lateral horizontal Bakken Formation wildcat well test to 19,857' MD/10,132' TVD.

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): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: October 16, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Roosevelt County water wells
(subject discussed)
October 16, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Roosevelt County, Montana
(subject discussed)
October 16, 2012

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3, T29N R57E
(subject discussed)

October 16, 2012
(date)

If location was inspected before permit approval:

Inspection date: _____
Inspector: _____
Others present during inspection: _____