

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

Operator: TAQA North USA, Inc.
Well Name/Number: Kavon 17-16H
Location: SE SE Section 17 T37N R56E
County: Sheridan, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.
Unusually deep drilling (high horsepower rig): Heavy duty double derrick drilling rig to drill a Bakken formation single lateral horizontal well, 11,949' MD/7897' TVD.
Possible H2S gas production: Slight possibility of H2S.
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: Existing field infrastructure to handle gas. No concerns.
-

Water Quality

(possible concerns)

Salt/oil based mud: Intermediate string hole will be drilled with synthetic based drilling fluids (oil based invert mud system) and openhole horizontal production hole will be drilled with fresh water polymer drilling fluids. Surface casing hole will be drilled with a freshwater, and freshwater mud system.
High water table: Possible high water table anticipated.
Surface drainage leads to live water: Yes, live water nearby in prairie pothole around this location.
Water well contamination: None, closest water wells in the area are more than 1 mile in any direction from this location. Surface hole will be drilled with freshwater and freshwater drilling muds. The surface casing setting depth, of 1250' should be below all freshwater zones.
Porous/permeable soils: No, sandy gravelly 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: Freshwater drilling fluids will be land applied with surface owner approval.
- Comments: 1250' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated.
High erosion potential: Moderate cut, up to 12.5' and moderate fill, up to 11.5', 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'X430'

Damage to improvements: Slight, surface use is a private cultivated land (CRP).

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 use existing county road, Salt Lake Road. A road will be constructed into this location, about 4919' from the county road. Surface hole (freshwater) cuttings will be mixed buried on site. Oil based invert mud cuttings will be trucked to an approved waste disposal facility. Oil based drilling fluids will be recycled to the next location or returned to the mud company's recycling facility. Freshwater surface fluids and horizontal freshwater polymer fluids and cuttings will be land applied. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences are, about 1 mile to the southwest and about 1.25 miles to the northwest from this location.

Possibility of H2S: Yes, slight.

Size of rig/length of drilling time: Heavy double 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: Only species identified as threatened or endangered are the Whooping Crane and Piping Plover. Species of concern is the Sprague's Pipit. NH tracker website lists 14 species of concern. They are as follows: Northern Short-tailed Shrew, Arctic Shrew, Bairds Sparrow, Le Conte's Sparrow, Nelson's Sparrow, Grasshopper Sparrow, Sprague's Pipit, Ferruginous Hawk, Chestnut Collared Longspur, Piping Plover, Black Tern, Sedge Wen, Bobolink and Whooping Crane. The surface location is in a private cultivated land (CRP).

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

Other: _____

Comments: Private cultivated land (CRP) next to a ranch trail and cultivated fields. 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 land (CRP). No concerns.

Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns. Wildcat well.

Remarks or Special Concerns for this site

Wildcat Bakken formation single lateral horizontal well, 11,949' MD/7897' TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur, but can be mitigated in a short time.

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 13, 2011

Other Persons Contacted:

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

(Name and Agency)

Sheridan County water wells

(subject discussed)

June 7, 2011

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

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

(subject discussed)

June 7, 2011

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T37N R56E

(subject discussed)

June 7, 2011

(date)

If location was inspected before permit approval:

Inspection date: June 13, 2011

Inspector: Mr. Schmidt

Others present during inspection: None