

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

Operator: Petro Hunt, LLC
Well Name/Number: Kahi 13-59-24D-2-1
Location: NW SE Section 24 T13N R59E
County: Wibaux, MT; **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: 15-20 days drilling time for a vertical Red River Formation test.
Unusually deep drilling (high horsepower rig): No, large triple drilling rig for 11,150' TD vertical Red River Formation Test.

Possible H2S gas production: Yes, H2S gas production possible from Mississippian, Devonian, Silurian and Ordovician Formations.

In/near Class I air quality area: No Class I air quality area in the area of review.

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: No special concerns, adequate surface casing, 2629' to be set and cemented back to surface with proper BOP stack should mitigate any concerns. Triple rig to drill to 11,150' TD vertical Red River Formation Test. If there are existing pipelines for natural gas in the area then associated gas must be tied into gathering 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: Use freshwater and freshwater mud system on surface hole, rule 36.22.1001. Oil based invert drilling fluids for the mainhole from the base of surface casing to TD.

High water table: Possible high water table.

Surface drainage leads to live water: Yes, nearest drainages is an unnamed ephemeral tributary drainage to Beaver Creek, the southeast corner of this drilling location is over part of the unnamed ephemeral drainage. Beaver Creek is about 3/8 of a mile to the east from this location. There should not be any discharge of fluids off this location.

Water well contamination: No, closest water wells are about 3/8 of a mile to the northwest, about 1/2 of a mile to the north, about 1/2 of a mile to the southeast, about 5/8 of a mile to the southeast, about 5/8 of a mile to the northwest, about 3/4 of a mile to the southeast and about 7/8 of a mile to the southeast from this well location. All other wells are 1 mile and further from this surface location. Depth of these stock and domestic water wells range from 35' to 400'. Surface hole will be drilled with freshwater and steel surface casing set and cemented from 2629' to protect surface waters and the Fox Hill aquifer, rule 36.22.1001.

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: 2629' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud systems to be used on surface hole, rule 36.22.1001. No pits will be utilized, using closed loop drilling system. Oil based invert drilling fluid will be recycled. Completion fluids will be hauled to a permitted commercial disposal, Landtech Enterprises, LLC TFF SWD #1 in North Dakota. Solids will be allowed to dry will be hauled to a licensed solids disposal site, Indian Hills in North Dakota.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No live stream crossings anticipated.

High erosion potential: No, small cut, up to 4.2' and no fill, up to 0.0', required.

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

Unusually large wellsite: Large, 420'X300' location size required.

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: _____

Comments: Access will be over existing State Highway #7 and existing county road, Red Top East Road. Operator will construct about 1500' of new access road off the county road into this location. No pits will be utilized, using closed loop drilling system. Oil based invert drilling fluid will be recycled. Completion fluids will be hauled to a permitted commercial disposal, Landtech Enterprises, LLC TFF SWD #1 in North Dakota. Solids will be allowed to dry will be hauled to a licensed solids disposal site, Indian Hills in North Dakota. No special concerns,

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 3/8 of a mile to the northwest, about 1.125 miles to the north northeast, about 1.125 miles to the southwest, about 1.25 miles to the southeast, about 1.325 miles to the northeast and about 1.5 miles to the northeast from this location. The town of Wibaux, Montana is about 8 miles to the north from this location.

Possibility of H2S: Yes H2S is possible at this location.

Size of rig/length of drilling time: Triple drilling rig 15 to 20 days drilling time.

Mitigation:

- Proper BOP equipment
- Topographic sound barriers
- H2S contingency and/or evacuation plan
- Special equipment/procedures requirements
- Other: Standard for the area H2S safety equipment and training for rig crews.

Comments: No concerns. Proper BOP stack and adequate surface casing should be able to control any problems that occur. (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): 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: Species identified as threatened or endangered by USFWS are the Pallid Sturgeon, Interior Least Tern and the Whooping Crane.

Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website lists four (4) species of concern, the Hoary Bat, Greater Sage Grouse, Iowa Darter and the Sauger.

Mitigation:

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

Comments: 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 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 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 is discovered at this location. 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

Well is a vertical 11,150' TD Red River Formation Test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected. Some short term impacts will occur to the surface location.

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:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Wibaux County water wells
(subject discussed)
April 16, 2013
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Wibaux County
(subject discussed)
April 16, 2013
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T13N R59E
(subject discussed)
April 16, 2013
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 24 T13N R59E
(subject discussed)
April 16, 2013
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____