

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

**Proposed Action:** Approve Drilling Permit (Form 22)

**Operator:** VECTA Oil and Gas

**Well Name/Number:** White 28-14

**Location:** SE SW Section 28 T7N R32E

**County:** Yellowstone, MT; Field (or Wildcat) Wildcat

**Air Quality**

(possible concerns)

Long drilling time: No, 10 to 15 days drilling time.

Unusually deep drilling (high horsepower rig): No, a double or small triple drilling rig to drill to a 6200' TD vertical Amsden Formation re-entry.

Possible H2S gas production: Slight H2S possible.

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 – using a double or small triple drilling rig to drill a vertical Amsden Formation re-entry. No gas gathering system exists in this area. Associated sweet gas and H2S gas in limited volumes can be flared under Board Rule 36.22.1220, if no gathering systems are in close proximity to this well.

**Water Quality**

(possible concerns)

Salt/oil based mud: No, surface hole will be drilled with freshwater. Main hole will be drilled with freshwater and freshwater drilling mud system.

High water table: No high water table in the area of review.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Butte Creek, Butte Creek is located 1/5 of a mile to the north. A pond exists 1/2 of a mile to the north east.

Water well contamination: No, closest water well is about a mile to the north northeast from this location. Depth of this stockwater well is 400'. Surface casing set at 364'.

Well will be drill with freshwater based drilling fluids from base of surface casing to TD. If productive 5 1/2" production casing will be run and cemented.

Porous/permeable soils: No, silty "Gumbo" 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: 16 mil synthetic pit liner will be installed for cuttings pit. After drilling is complete, the liquid fluids in the mud tanks will be hauled to a commercial disposal site and disposed. The location will be downsized to accommodate production equipment. The rest of the disturbed area will be returned to original contour and re seeded. Cuttings pit will be allowed to dry and reclaimed with the liner being left intact.  
Comments: Freshwater mud system to be used on surface hole. Freshwater mud system will be used out from under surface casing to 6200' TD. No concerns.

### Soils/Vegetation/Land Use

(possible concerns)  
Stream crossings: No live water stream crossings.  
High erosion potential: No.  
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: No..  
Damage to improvements: Slight, surface use is grass and sagebrush grazing 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: Sage Grouse Program  
Comments: Access will be from existing Musselshell Trail Rd. No concerns.

### Health Hazards/Noise

(possible concerns)  
Proximity to public facilities/residences: No residences within a 1 mile radius from this location. The town of Custer, Montana is about 16 miles to the southeast from this location.  
Possibility of H<sub>2</sub>S: slight chance of H<sub>2</sub>S.  
Size of rig/length of drilling time: Triple derrick drilling rig, about 10 to 15 days drilling time.  
Mitigation:  
 Proper BOP equipment  
 Topographic sound barriers  
 H<sub>2</sub>S contingency and/or evacuation plan  
 Special equipment/procedures requirements  
 Other: \_\_\_\_\_  
Comments: Operational BOP and adequate surface casing should mitigate any problems. (BOP's 3,000 psig annular, pipe and blind rams) rule 36.22.1014. No concerns.

### Wildlife/recreation

(possible concerns)  
Sage Grouse: In general habitat. Program analysis received 6-23-2016.  
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: Threatened or endangered species identified in this county are the Black-Footed Ferret, Whooping Crane, and Red Knot. NH tracker website lists five (5) "Species of Concern" in T7N R32E. They are the Black-tailed Prairie Dog, Loggerheaded Shrike, Brewers Sparrow, Hoary Bat, and Little Brown Myotis.

Mitigation:

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

Comments: Private surface grazing land. There may be species of concern that could be 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 management authority 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 surface grazing land. There could 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: Well is a wildcat, unless/until production is established, no social or economic impact is likely.

### **Remarks or Special Concerns for this site**

Well is a 6200' TD vertical Amsden Formation re-entry.

#### **Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected. Some short term impacts will occur.

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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/ John Gizicki  
(title:) Compliance Specialist  
Date: June 24, 2016

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website

(Name and Agency)  
Yellowstone County water wells

(subject discussed)  
June 24, 2016  
(date)

US Fish and Wildlife, Region 6 website  
(Name and Agency)  
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES  
MONTANA COUNTIES, Yellowstone County  
(subject discussed)

June 24, 2016  
(date)

Montana Natural Heritage Program Website (FWP)  
(Name and Agency)  
T7N R32E  
(subject discussed)

June 24, 2016  
(date)

Montana Cadastral Website  
(Name and Agency)  
Surface Ownership and surface use : Section 28 T7N R32E  
(subject discussed)

June 24, 2016  
(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_