

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

**Proposed Action:** Approve Drilling Permit (Form 22)  
**Operator:** Whiting Oil and Gas Corporation  
**Well Name/Number:** Salvevold 14-27  
**Location:** SW SW Section 27 T29N R54E  
**County:** Roosevelt, **MT;** **Field (or Wildcat)** W/C (Red River Vertical)

**Air Quality**

(possible concerns)  
Long drilling time: No, 30 to 40 days drilling time.  
Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill a single Vertical well test to 11,600TVD.  
Possible H2S gas production: H2S gas production possibility is slight.  
In/near Class I air quality area: Yes, Class I air quality area nearby. Fort Peck Indian Reservation Boundary, about 4 miles to the west.  
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 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 triple derrick drilling rig to drill to 11,600'TVD, Red River formation vertical well. If existing pipeline for H2S gas in the area gas can be gathered or if no gathering system nearby H2S gas can be flared under Board Rule 36.22.1220.

**Water Quality**

(possible concerns)  
Salt/oil based mud: Yes, oil based invert drilling fluids will be used on the mainhole. The horizontal lateral will be drilled with brine water. The surface hole will be drilled with freshwater and freshwater drilling fluids.  
High water table: No, no high water table anticipated.  
Surface drainage leads to live water: No, Big Muddy Creek is 3/5 of a mile to the west.  
Water well contamination: None, closest water wells are about 9/10 of a mile to the northeast, about 3/5 of a mile to the north and about 3/10 mile to the northwest from this location. Depth of these domestic/stock water wells range from 52' to 100'.  
Porous/permeable soils: No, sandy clay soils.  
Class I stream drainage: No class I stream drainages in this area.

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: 2000' of surface casing cemented to surface adequate

to protect freshwater zones and to cover the base of the Fox Hills Formation.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated.

High erosion potential: No, small cut, up to 4.3' and small fill, up to 3.3', required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, a large wellsite 400'X400' location size required.

Damage to improvements: No surface use is 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 \_\_\_\_\_

Comments: Access to location will be over existing county road, Damm Road. A short access of 64' will be built off the county road into location. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to a Class II Disposal. Drilling cuttings and mud solids will be fly ashed in the lined pit and buried with subsoil cover. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residences are about 1.4 miles to the northwest. The town of Culbertson, Montana is about 10 miles to the southeast and the town of Froid, Montana is about 11 miles to the northeast from this location.

Possibility of H<sub>2</sub>S: H<sub>2</sub>S potential is slight.

Size of rig/length of drilling time: Triple drilling rig/short 30 to 40 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: Adequate surface casing and operational BOP should mitigate any problems. No concerns.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None close by.

Proximity to recreation sites: None close by.

Creation of new access to wildlife habitat: No, surface use is a cultivated field.

Conflict with game range/refuge management: None.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. MTFWP Natural Heritage Tracker website indicates eleven (11) species of concern: Baird's Sparrow, American Bittern, Black Tern, Whooping Crane, Franklin's Gull, Black-crowned Night-Heron, White-faced Ibis, Forster's Tern, Northern Redbelly Dace, Blue Sucker, Pearl Dace. MTFWP Natural Heritage Tracker website indicates three (3) potential species of concern: Brook Stickleback, Brassy Minnow, and Burbot.

Mitigation:

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

Comments: The surface ownership is private land and surface use is cultivated surface 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 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: On private cultivated surface 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.

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### Remarks or Special Concerns for this site

11,600'TVD Red River Formation horizontal well test. No concerns.

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

No significant 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): John Gizicki

(title:) Compliance Specialist

Date: April 21, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Roosevelt County

(subject discussed)

April 21, 2014

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES

MONTANA COUNTIES, Roosevelt County

(subject discussed)

April 21, 2014

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T29N R54E

(subject discussed)

April 21, 2014

(date)

If location was inspected before permit approval:

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

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

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