

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

**Operator:** Wind River Hydrocarbons  
**Well Name/Number:** Nelson 1-14  
**Location:** NE SE Section 14T30N R38E  
**County:** Valley, **MT;** **Field (or Wildcat)** W/C

**Air Quality**

(possible concerns)

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

Unusually deep drilling (high horsepower rig): No, 5600' TD, vertical Nisku Formation test.

Possible H<sub>2</sub>S gas production: Yes, H<sub>2</sub>S gas possible.

In/near Class I air quality area: No Class I air quality area.

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 derrick drilling rig to drill to 5600' TD. If there are existing pipeline for H<sub>2</sub>S gas in the area then gas must be tied into a 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: No salt or oil based drilling fluids to be used. Surface and main hole will be drilled with freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary to the Spring Creek, about ¼ of a mile to the northwest from this location.

Water well contamination: None, closest wells are about 5/8 of a mile to the north northwest, about 5/8 of a mile to the southeast and about ¾ of a mile to the southwest from this location. Operator's indicates there is one other water well about 3/8 of a mile to the northwest in section 14, but GWIC website does not list a water well at that location, only a drilled plugged and abandoned well. Depth of these water wells are 50' or less in depth. All other wells are 1 mile and further from this well location. This well will drill surface hole to 750' with freshwater and set 750' of steel surface casing cemented to surface to protect shallow ground water.

Porous/permeable soils: No, silty sandy bentonitic 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: 750' of surface casing cemented to surface adequate to protect freshwater zones.

### Soils/Vegetation/Land Use

(possible concerns)  
Steam crossings: None anticipated.  
High erosion potential: No, small cut, up to 2.5' and small fill, up to 1.6', 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: No, 240'X200' location size required.  
Damage to improvements: Slight 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 will be over existing county section line roads, Cornwell Road and existing two track farm trails. A short new access will be built off an existing two track trail into this location, about 660'. Cuttings will be buried in the unlined reserve pit. Freshwater drilling fluids will be allowed to dry in the reserve pit. Completion fluids will be hauled to a Class II disposal. Pit will be allowed to dry and backfilled with subsoils and clays. No special concerns.

### Health Hazards/Noise

(possible concerns)  
Proximity to public facilities/residences: Closest residences are about 5/8 of a mile to the southwest and about 3/4 of a mile to the north northwest from this location.  
Possibility of H2S: Yes possible H2S (Mississippian Formations).  
Size of rig/length of drilling time: Double derrick drilling rig. Drill time short 10 to 15 days drilling time.

#### Mitigation:

- Proper BOP equipment
- Topographic sound barriers
- H2S contingency and/or evacuation plan
- Special equipment/procedures requirements
- Other: H2S safety company to be hired.

Comments: Residences are far enough away from the location. No concerns.

### 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: Threatened or endangered species in Valley County are the Pallid Sturgeon, Interior Least Tern, Piping Plover, Black Footed Ferret and Whooping Crane. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH Tracker website lists 0 species of concern.

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

Comments: Private 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 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: Wildcat well. No concerns

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### Remarks or Special Concerns for this site

Well is a 5600' Nisku formation test.

**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/Steven Sasaki  
(title:) Chief Field Inspector  
Date: March 24, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website  
(Name and Agency)  
Valley County water wells  
(subject discussed)  
March 24, 2012  
(date)

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

March 24, 2012  
(date)

Montana Natural Heritage Program Website (FWP)  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, T30N R38E  
(subject discussed)

March 24, 2012  
(date)

If location was inspected before permit approval:  
Inspection date:  
Inspector:  
Others present during inspection: