

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

**Operator:** Armstrong Operating, Inc.  
**Well Name/Number:** State No. 12-16  
**Location:** SW NW Section 16 T31N R59E  
**County:** Sheridan, **MT;** **Field (or Wildcat)** Wildcat

**Air Quality**

(possible concerns)

Long drilling time: No, 30-40 days drilling time.  
Unusually deep drilling (high horsepower rig): No, triple drilling rig for 12,300' TVD.  
Possible H2S gas production: Yes  
In/near Class I air quality area: No  
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.

**Water Quality**

(possible concerns)

Salt/oil based mud: Use freshwater and freshwater mud system on surface hole and salt saturated mud to TD.  
High water table : No  
Surface drainage leads to live water: No, closest drainage is Brush Mountain Creek, about 1 mile to the west of this location.  
Water well contamination: None, no water wells within 1 mile of this location.  
Porous/permeable soils: No, sandy bentonitic soils.  
Class I stream drainage: No

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: 1600' of surface casing appears to be short to cover the Base of the Fox Hills formation. Recommend that 1750' of surface casing be cemented to surface to adequately protect freshwater zones. Also, fresh water mud systems to be used on surface hole. Reserve pit liquids to be recycled or hauled to a commercial disposal. Solids will be allowed to dry, pit liner folded over the top of the solids, spoil dirt to fill pit, top soil spread over pit area, and seeded to land owners specification.

**Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: None.

High erosion potential: No, moderate cut, up to 16.6', and moderate fill, up to 14.1', required.

Loss of soil productivity : No, location will be restored after drilling.

Unusually large wellsite: Large, 200'X300' location size required.

Damage to improvements: Slight, surface use is cultivated fields.

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: Using existing county road, Brush Mountain road to within 1/8 of a mile of this location. Will build approximately 700' of access road into location. Reserve pit liquids to be recycled or hauled to a commercial disposal. Solids will be allowed to dry, pit liner folded over the top of the solids, spoil dirt to fill pit, top soil spread over pit area, and seeded to land owners specification. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences Yes, residences about 3/4 of a mile to the southwest of this wellsite and 1 mile to the north of this wellsite.

Possibility of H2S: Yes

Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: \_\_\_\_\_

Comments: No concerns proper BOP stack and surface casing should be able to control any problems that occurs.

### 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: None identified.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

**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: State surface lands. Trust Lands will do EA.

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**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**

Well is a 12,300' vertical Red River formation test.

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

No long term impacts expected, only some short term impacts will occur.

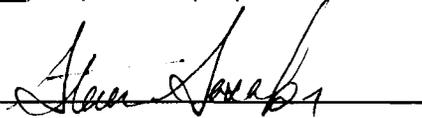
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I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): Steven Sasaki

(title): Chief Field Inspector

Date: December 10, 2007



Other Persons Contacted:

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(Name and Agency)

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

(subject discussed)

Sheridan County water wells

(date)

December 10, 2007

If location was inspected before permit approval:

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

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

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