

# Montana Board of Oil and Gas Conservation Environmental Assessment

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

**Operator:** Abraxas Petroleum Corporation.

**Well Name/Number:** Christensen 12-2

**Location:** SESW Section 12 T32N R58E

**County:** Sheridan, MT; **Field (or Wildcat)** Dwyer

## Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig 900 HP, 7,900 TD Ratcliffe Formation well test.

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

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: Associated gas to be flared or if a pipeline is run to a sweetening facility then it can be hooked up.

---

## Water Quality

(possible concerns)

Salt/oil based mud: Yes to long string, production hole, oil based invert drilling fluids. Surface casing freshwater, and freshwater mud system to be used.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, several stock ponds in the vicinity.

Water well contamination: None, Multiple water wells in the area ranging from 83' to 295'. Significantly shallower than the surface casing setting depth of 1,175'.

Porous/permeable soils: No, sandy 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: \_\_\_\_\_

Comments: 1,175' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems. Freshwater will be used to drill surface hole at this location.

## Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated.

High erosion potential: No, location will require a small cut of up to 2.0' and small fill, up to 4.8'.

required.

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

Unusually large wellsite: No, large well site 280'X325'.

Damage to improvements: Slight, surface use is grassland.

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: Will use existing county road, Volmer Church Road. About 660' of new access road will be built into this location off of Volmer Church Road. Cuttings will be solidified with fly ash and buried in the lined reserve pit. Oil based drilling fluids will be recycled. Completion fluids will be removed and hauled to commercial Class II Disposal. The pit after solidification will be backfilled with subsoil. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences about 2/5 of a mile to the southeast, 1.2 miles to the northwest, 1 mile north, 1 mile to the northeast.

Possibility of H2S: Yes

Size of rig/length of drilling time: Triple drilling rig 20 to 30 days drilling time.

Mitigation:

- Proper BOP equipment
- Topographic sound barriers
- H2S contingency and/or evacuation plan
- Special equipment/procedures requirements
- Other \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Sufficient distance between location and buildings noise should not be a problem.

### Wildlife/recreation

(possible concerns)

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

Proximity to recreation sites: Long Lake is located about 1.6 miles to the northwest.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: The Montana Natural Heritage Program lists twenty-one (21) species of concern. They are: Clark's Grebe, Baird's Sparrow, Le Conte's Sparrow, Sprague's Pipit, Burrowing Owl, American Bittern, Ferruginous Hawk, Piping Plover, Black Tern, Bobolink, Whooping Crane, Caspian Tern, Loggerhead Shrike, Franklin's Gull, Black-crowned Night-Heron, American White Pelican, Forster's Tern, Common Tern, Plains Hog-nosed Snake, and the Smooth Greensnake. Threatened or endangered species in Sheridan County are the Piping Plover, Whooping Crane, and Red Knot. Candidate species is the Sprague's Pipit.

Mitigation:

- Avoidance (topographic tolerance/exception)
- Other agency review (DFWP, federal agencies, DSL)

\_\_\_ Screening/fencing of pits, drillsite

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

Comments: \_\_\_\_\_

### 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: \_\_\_\_\_

### Social/Economic

(possible concerns)

\_\_\_ Substantial effect on tax base

\_\_\_ Create demand for new governmental services

\_\_\_ Population increase or relocation

Comments: No concerns.

### Remarks or Special Concerns for this site

7,900' TD Ratcliffe Formation drilled hole. No concerns.

### Summary: Evaluation of Impacts and Cumulative effects

Short term impacts expected, no long term impacts anticipated.

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: June 18th, 2015

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County

(subject discussed)

June 18th, 2015

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA  
COUNTIES, Sheridan County

(subject discussed)

June 18th, 2015 \_\_\_\_\_

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T32N R58E

(subject discussed)

June 18th, 2015 \_\_\_\_\_

(date)

Montana Cadastral Website

(Name and Agency)

Surface Ownership and surface use Section 12 T32N R58E

(subject discussed)

June 18th, 2015 \_\_\_\_\_

(date)

If location was inspected before permit approval:

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

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

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