# Montana Board of Oil and Gas Conservation
# Environmental Assessment

**Operator:** Sinclair Oil Corporation
**Well Name/Number:** Ralston 1-21H
**Location:** SE SE Section 21 T27N R53E
**County:** Richland, **MT; Field (or Wildcat)** Wildcat

## Air Quality

(possible concerns)
Long drilling time: No, 30-40 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick rig 900 HP to drill a single lateral Bakken Formation horizontal well, 18,458'MD/8,866'TVD.
Possible H2S gas production: Possibly, slight amount.
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:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:
Comments:

## Water Quality

(possible concerns)
Salt/oil based mud: Yes to long string hole with oil based drilling fluids. Horizontal lateral to be drilled with saltwater. Surface casing hole to be drilled with freshwater and freshwater mud.
High water table: None
Surface drainage leads to live water: Yes, an unnamed ephemeral tributary drainage to West Charley Creek, about 1/4 of a mile to the west of this location.
Water well contamination: No, water wells within 1 mile of this location. Surface casing will be set to 1,550' and cemented back to surface to protect freshwater zones.
Porous/permeable soils: No, silty bentonitic soils
Class I stream drainage: No, Class I stream drainages.

Mitigation:
X Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other:
Comments: 1,550' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems.

## Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None
High erosion potential: No, location will require moderate cut, up to 14.8' and a moderate fill, up to 17.8', required.
Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive

unused portion of drillsite will be reclaimed.
Unusually large wellsite: Large well site 350'X425'.
Damage to improvements: Slight.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access will be over existing county road #316. About 347' of new road will be constructed into this location off the existing county road #316. Drill cuttings will be disposed of in the lined reserve pit. Invert mud will be recycled. Completion fluids will be trucked to a commercial Class II for disposal. Pit will be backfilled after remaining fluids have evaporated. No special concerns

**Health Hazards/Noise**

(possible concerns)
Proximity to public facilities/residences: None, no residence within 1 mile of location in any direction.
Possibility of H2S: Slight
Size of rig/length of drilling time: Triple drilling rig 30 to 4 days drilling time.

Mitigation:
X 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. Noise should not be a problems, sufficient distance from residence to rig should mitigate this.

**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: No

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

Comments: Private surface lands. No concerns

**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 lands. No concerns.

**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**

Bakken formation horizontal well with at TD of 18,458 MD/8866' TVD.

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

No, long term impacts expected, some short term impacts will occur, but can be mitigated in a short time.

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: January 10, 2008

Other Persons Contacted:
Montana Bureau of Mines and Geology, Groundwater Information Center website.
(Name and Agency)
Water wells in Richland County
(subject discussed)

January 10, 2008
(date)

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