Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Devon Energy Production Company, L.P.
Well Name/Number: Manuel-DIR No. 12-16
Location: SE SE Section 12 T31N R15E
County: Hill, **MT; Field (or Wildcat)** (Bullhook Unit) Tiger Ridge Field

Air Quality

(possible concerns)
Long drilling time: No, short time 3 to 4 days drilling time
Unusually deep drilling (high horsepower rig) : No, 2500' TD.
Possible H2S gas production: No, these formations are sweet gas producing.
In/near Class I air quality area: No
Air quality permit for flaring/venting (if productive): Yes, if productive. DEQ air quality permit required.

Mitigation:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:
Comments: No special concerns – using small rig to drill to 2500'TD.

Water Quality

(possible concerns)
Salt/oil based mud: No, freshwater and freshwater mud system.
High water table: No
Surface drainage leads to live water: No, unnamed ephemeral tributary drainage to Squaw Creek, about 1/8 of a mile to the west and Squaw Coulee, about 1/8 of a mile to the northeast of this location.
Water well contamination: No, closest water wells are ¼ of a mile to the north of this location, across Squaw Coulee. Deepest water well is 100' in depth.
Porous/permeable soils No, sandy bentonitic soils.
Class I stream drainage: No

Mitigation:
__ 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: 150' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud systems to be used. If production casing is run, it will be cemented to surface.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None

High erosion potential: No, small cut, up to 6.0' and small fill, up to 6.0', 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, small location, 250'X250' location size required.
Damage to improvements: Slight, surface use is grazing land.
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, Beaver Creek Road. About 1/8 of a mile of new access road will be built into this location. Cutting will be buried in the unlined pits. Drilling fluids will be offsite disposed of in a stock pond for sealant, with surface owner approval. Pits will be allowed to dry before being backfilled. No special concerns

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: about ¼ of a mile to the east, ¾ of a mile to the south southeast and 7/8 of a mile to the north of location.
Possibility of H2S: None
Size of rig/length of drilling time: Small drilling rig/short 3 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: Working BOP should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: Beaver Creek County Park 2.25 miles to the southwest and Lower Lake, about 2.5 miles to the southwest.
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
__ 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: Existing gas field, Tiger Ridge Field. This would be a development well within this gas field. No concerns

Remarks or Special Concerns for this site

Well is a 2500' Eagle Formation development well test within the Tiger Ridge Gas Field.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur, but can be mitigated in 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: March 18, 2008

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website.

(Name and Agency)

Hill County water wells.
(subject discussed)
March 18, 2008
(date)

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