Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: North Range Exploration, LLC
Well Name/Number: Stewart Geological, Inc. & BTC Oil Barile 7-1
Location: SW NE SW Section 7 T10N R28E
County: Musselshell **, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 7 to 10 days drilling time.
Unusually deep drilling (high horsepower rig): No, single derrick drilling rig, 4,100' TD, Heath Formation.
Possible H2S gas production: Yes possible, low level H2S.
In/near Class I air quality area: No, class I air quality area in the area of review.
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: No special concerns – using small rig to drill to 4,100' TD. If there are existing pipelines for natural gas in the area, associated gas can be gathered 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, 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 drainage to Little Wall Creek, about 1/16 of a mile to the south and about 1/8 of a mile to the east from this location. Little Wall Creek is about 3/8 of a mile to the north from this location.
Water well contamination: No, closest water wells are about 1/2 of a mile to the southwest, about ¾ of a mile to the north and ¾ of a mile to the southeast from this location. The depth of these water wells range from 250' to 400'. Surface hole will be drilled with freshwater and freshwater mud to 265'. Steel surface casing will be run and cemented to surface from 265' to protect ground water (rule 36.22.1001). If productive, 4 ½" production casing will be cemented to surface.
Porous/permeable soils: No, silty sandy clay soils.
Class I stream drainage: No Class I stream drainages.

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: 265' of surface casing cemented to surface adequate to protect freshwater zones. Also, freshwater and fresh water mud systems to be used (rule 36.22.1001). If productive, 4 ½" production casing will be cemented to surface.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No, stream crossings anticipated.
High erosion potential: No, cut and fill to be determined by dirt contactor. Small self leveling single derrick drilling rig will be used.
Loss of soil productivity: No, location will be restored after drilling in nonproductive and if productive unused portion of the drillsite will be reclaimed.
Unusually large wellsite: No, 200'X150' location size required.
Damage to improvements: Slight, surface use is prairie grazing grassland.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
X 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: Surface access will be over existing county roads and well/ranch trails. No new access will be built existing well/ ranch road crosses this location. Cuttings will be buried in the earthen pit. Fluids will be allowed to evaporate. Pit will be backfilled when dry. No special concerns

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: No, no residences within 1 mile from this wellsite.
Possibility of H2S: Slight chance.
Size of rig/length of drilling time: Small drilling rig/short 7 to 10 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 and operational BOP should mitigate any problems. (BOP 3,000 psig annular with diverter on top) rule 36.22.1014.

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: Only species identified as threatened or endangered is the Black-footed Ferret. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website indicates, four (4) species of concern: Black-tailed Prairie Dog, Burrowing Owl, Greater Sage Grouse and Western Hog-nosed Snake.

Mitigation:

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

Comments: Private surface grassland. 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: Private surface grassland. 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: No concerns. 4,100' Heath Formation oil test.

Remarks or Special Concerns for this site

Well is a 4,100' Heath Formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected. Some short term surface impacts will occur, but will 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: November 2, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells in Musselshell County
(subject discussed)

November 2, 2012
(date)

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

November 2, 2012
(date)

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3, Location T10N R28E
(subject discussed)

November 2, 2012
(date)

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