Montana Board of Oil and Gas Conservation
Environmental Assessment

Proposed Action: Approve Drilling Permit (Form 22)
Operator: XTO Energy, Inc.
Well Name/Number: Dige 41X-29A
Location: NE NE Section 29 T23N R59E
County: Richland**, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 20-30 days drilling time.
Unusually deep drilling (high horsepower rig): A triple derrick rig to drill a single lateral Bakken Formation Horizontal Lateral, 21,580'MD/10,197'TVD.
Possible H2S gas production: Slight chance of H2S gas production from Mississippian Formations.
In/near Class I air quality area: No, not in a Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:
_X Air quality permit (AQB review)
_X Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: No special concerns – using triple derrick drilling rig to drill a single lateral horizontal Bakken Formation well, 21,580'MD/10,197'TVD._ If existing gas gathering system 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: Yes to intermediate casing string hole will be drilled with oil based invert drilling fluids(80/20). Horizontal lateral will be drilled with produced brine water. Surface casing hole will be drilled with freshwater and freshwater drilling fluids, Board Rule 36.22.1001.
High water table: Yes high water table anticipated. Appears to be in a irrigated field.
Surface drainage leads to live water: Yes, irrigated fields all around this location.
Water well contamination: None, surface hole will be drilled with freshwater and freshwater drilling fluids to 1600', steel surface casing will be run and cemented to surface from 1600' to protect any ground and surface waters. Closest water wells, there are numerous domestic and stock water wells with a ½ mile radius from this location. Depth of these stock and domestic water wells range from 5' to 1420'. Surface casing hole will be drilled with freshwater and a freshwater drilling fluids, Board Rule 36.22.1001. Surface casing will be set well below the depth of these water wells to 1600' and cement to surface, Board Rule 36.22.1001. No concerns.
Porous/permeable soils: Yes porous, sandy silty clay soils.
Class I stream drainage: Yes, nearest Class I stream drainage, Yellowstone River, about 3 miles to the east from this location.

Mitigation:
__ Lined reserve pit

_X_ Adequate surface casing
__ Berms/dykes, re-routed drainage
_X Closed mud system
_X **Off-site disposal of solids/liquids (in approved facility)**
__ Other: _____

Comments: 1600' of surface casing is enough surface casing to cover Base Fox Hills Formation. Surface hole will be drilled with freshwater and freshwater drilling fluids to 1600', Board Rule 36.22.1001. Steel surface casing will be run to 1600' and cemented to surface, Board Rule 36.22.1001. Oil based invert drilling fluids will be recycled. Drill cuttings will be disposed offsite. After the well has been completed, completions fluids will go to a commercial Class II disposal. No concerns.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None, anticipated.
High erosion potential: No, high erosion potential at this location.
Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsitewill be reclaimed.
Unusually large wellsite: Yes, well site is very large, 476'X 334', for four wells, Dige 41X-29DXA, 41X-29DXB, 41X-29DXC and 41X-29DXD.
Damage to improvements: Private irrigated crop lands.
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, #350 and #126. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to a Class II commercial disposal. Drill cuttings will be disposed of offsite at an approved disposal site. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Closest residences are about 3/8 of a mile to the east and 3/8 of a mile to the southeast from this location. The town of Sidney, Montana is about 1 mile to the southeast from this location.
Possibility of H2S: Slight chance of H2S from Mississippian Formations.
Size of rig/length of drilling time: Triple derrick drilling rig, 20 to 30 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, (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014. No concerns.

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, no game range/refuge in the area.
Threatened or endangered Species: Threatened or endangered species identified by USFWS in Richland County are the Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane. Candidate species are the Sprague's Pipit and the Greater Sage Grouse. NH tracker website lists seventeen (17) species of concern in this Township and Range: Townsend's Big-eared Bat, Black-tailed Prairie Dog, Hoary Bat, Great Blue Heron, Whooping Crane, Least Tern, Spiny Softshell turtle, Blue Sucker, Iowa Darter, Shortnosed Gar, Sturgeon Chub, Sicklefin Chub, Paddlefish, Sauger and Pallid Sturgeon, and two species of Sand-dwelling Mayfly.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other: _____
Comments: Private irrigated crop lands. 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 irrigated crop lands. 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: Horizontal Bakken Formation oil well in a 1280 acre spacing unit. No

concerns.

Remarks or Special Concerns for this site

A single lateral Bakken Formation horizontal well test drilled to 21,580'MD/10,197'TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

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): /s/ John Gizicki
(title:) Compliance Specialist
Date: January 27, 2015

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells in Richland County
(subject discussed)
January 27, 2015
(date)

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

January 27, 2015
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T23N R59E
(subject discussed)

January 27, 2015
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 29 T23N R59E
(subject discussed)

January 27, 2015_____
(date)

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