

CHECKLIST ENVIRONMENTAL ASSESMENT

Proposed Action: Approve Drilling Permit (Form 22)

Project/Well Name: Unit CH31-17SH

Operator: Denbury Onshore, LLC

Location: NW NE Section 17 T10N R58E

County: Fallon MT; **Field (or Wildcat):** Cabin Creek

Proposed Project Date: 10/15/2018

I. DESCRIPTION OF ACTION

Denbury plans to drill a horizontal oil well in the Charles-Madison formation, 12,274' MD / 7,238' TVD. Surface casing to be set at 2,000' and cemented back to surface.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED

Montana Bureau of Mines and Geology, GWIC website (Fallon County Wells).

US Fish and Wildlife, Region 6 website

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

Montana Natural Heritage Program Website (FWP)

Heritage State Rank= S1, S2, S3, T10N R58E

Montana Cadastral Website

Surface Ownership and surface use Section 17 T10N R58E

Montana Department of Natural Resources MEPA Submittal

2. ALTERNATIVES CONSIDERED

No Action Alternative: The proposed well would not be drilled.

Action Alternative: Denbury Onshore, LLC would have permission to drill the well.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

3. AIR QUALITY

Long drilling time: No, 15-20 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple drilling rig for a 12,274' MD / 7,238' TVD, directional well. The objective formation is the Charles-Madison.

Possible H₂S gas production: Yes, possible H₂S gas from the Mississippian formations.

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. AQB review.

Comments: No special concerns – using rig to drill to 12,274' MD / 7,238' TVD. If there are not any gas gathering systems nearby, associated gas can be flared under Board Rule 36.22.1220.

4. WATER QUALITY

Salt/oil based mud: Use freshwater and freshwater mud system for drilling surface hole (Rule 36.22.1001) and intermediate hole will utilize oil based invert mud, drilling across the production interval will utilize a brine system.

High water table: No high-water table anticipated at this location.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral drainage about 1/10th of a mile to the west. Cabin Creek is about 1 mile to the east.

Water well contamination: No water wells within a ½ mile radius.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No.

Groundwater vulnerability area: No.

Mitigation:

Lined reserve pit

Adequate surface casing

Berms/dykes, re-routed drainage

Closed mud system

Off-site disposal of **solids**/liquids (in approved facility)

Comments: Steel surface casing will be run and cemented to surface to protect ground water. (Rule 36.22.1001).

5. SOILS/VEGETATION/LAND USE

Vegetation: Grassland.

Stream crossings: None anticipated.

High erosion potential: No, a small cut of 4.8' and a small fill of 2.2' is required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive.

Unusually large wellsite (Describe dimensions): No, a large location will be used, 300' X 400'.

Damage to improvements: Slight, surface use is grazing land.

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

Access Road: Access will be off the Anticline Rd. A new access of 634' will be built into location.

Drilling fluids/solids: This is a closed loop system. All cuttings will be collected in temporary metal pits and then hauled to a licensed disposal facility.

6. HEALTH HAZARDS/NOISE

Proximity to public facilities/residences: No residences within ½ mile radius. Baker, MT is located about 19 miles to the southeast.

Possibility of H₂S: Yes, possible H₂S gas from the Mississippian formations.

In/near Class I air quality area:

Size of rig/length of drilling time: 15-20 days drilling time.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H₂S contingency and/or evacuation plan

Special equipment/procedures requirements

Other:

7. WILDLIFE/RECREATION

Sage Grouse: In general area. A Sage Grouse review letter has been submitted.

Proximity to sensitive wildlife areas (DFWP identified): in Sage-Grouse General habitat.

Proximity to recreation sites: None.

Creation of new access to wildlife habitat: None.

Conflict with game range/refuge management: None.

Threatened or endangered Species: Species identified as threatened or endangered are the Species identified as threatened or endangered are the Whooping Crane, Northern Long-eared Bat, and Piping Plover. MTFWP Natural Heritage Tracker website lists two (2) species of concern. They are the Greater Sage-Grouse and Golden Eagle.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DNRC Trust Lands, **Sage Grouse Habitat Conservation Program**)

Screening/fencing of pits, drillsite

Other: Sage Grouse Habitat Conservation Program to limit work times.

Comments: Private cultivated surface 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. No concerns.

IV. IMPACTS ON THE HUMAN POPULATION

8. HISTORICAL/CULTURAL/PALEONTOLOGICAL

Proximity to known sites: None.

Mitigation

avoidance (topographic tolerance, location exception)

other agency review (SHPO, DNRC Trust Lands, federal agencies)

Other:

9. SOCIAL/ECONOMIC

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns.

IV. SUMMARY

No long term impacts expected. Some short term impacts will occur, but can be mitigated.

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.

**EA Checklist
Prepared By:**

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Date: 10/05/18