

UIC Class II Permit Application

Continental Resources is requesting to convert the following well to a salt water disposal well to dispose of produced water from the NW Buffalo Area / Table Mountain.

(1.4) Operator: Continental Resources
PO Box 269000
Oklahoma City, OK
73126

(1.5) Well Name: Duke 41-15H, API# 40 063 20757
Well Location: NENE Sec 15-T22N-R3E, Harding County, Buffalo, SD.

(2.0) A one-half mile fixed radius area of review plat which shows the location of the injection well or wells, existing or proposed; the location of all oil and gas wells; the location of all water wells active and abandoned; the location of all other wells, including plugged and abandoned wells; abandoned locations; dry holes; current drilling locations; the names of operators; the surface and mineral owners; and each offset operator;

See attached map.

Working Owners:

Continental Resources Inc.
Burlington Resources Oil & Gas Co
Murex Petroleum
Zeneco, INC
Tecton Energy LLC
Zenergy Properties III, LLC

Mineral Owners

See Attached.

(2.15) Surface Owner

Name: Than Brengle
Address: 11598 Ladner Rd, Buffalo, SD, 57720

(2.2) The formation or formations from which oil, gas, and water wells are producing or have produced;

Oil: Red River "B" Formation

Gas: Red River "B" Formation

Water: Red River "B" Formation, Fox Hills, Hell Creek, Inyan Kara, Madison & Minnelusa.

RECEIVED

AUG 23 2021

DEPT OF AGRICULTURE & NATURAL
RESOURCES - RAPID CITY

(2.3) The name, description (stratigraphic and structural), and depth of the receiving formation or formations and the overlying confining zone or formation;

Receiving formation(s): Dakota Sand (Inyan Kara) 4,556 ft – 4,664 ft MD. See Attached

(2.4) The well type, construction, spud date, total depth, formation tops, record of completion or recompletion, and plugging for all oil, gas, and injection wells within the area of review, and any additional pertinent information which the secretary determines is necessary to make an informed judgment on the issuance of a permit, including drill stem tests and well logs for all oil and gas wells identified in the area of review;

- 1) Meridian 14-15H State – Well is operated by Murex Petroleum and is shut-in. No known correction action is required at this time.
- 2) NJOS Federal 34-10 - Well is operated by Murex Petroleum and is shut-in. No known correction action is required at this time.
- 3) Schmidt 21-14H – Well is operated by CLR and is producing. No known correction action is required at this time.
- 4) Conrad 24-11H – Well is operated by CLR and is producing. No known correction action is required at this time.

See attached documents.

(2.5) Information on abandoned and active water wells, as follows:

No active or abandoned water wells.

(2.6) Construction details:

Hole/drill bit sizes

Surface: 13-1/2”

Production: 8-3/4”

Casing sizes and weights

Surface: 9-5/8” 36#

Production: 7” 23#, 26#, 29#

Tubing size and weight: Tbg will 2-7/8 TK-99 internally coated

Cement details:

Surface

Type(s): 555 sacks cmt

Production

Type(s): 955 sacks cmt

See attached WBD

The current production equipment will be removed and a Arrow Set pkr installed with coated tbg. Packer to be set at approx. 4,525 ft. The casing will be MIT tested as required by the State of South Dakota, which is a 15 minute test at 1000 psi with an allowable 10% fall off.

(2.7) The geologic name and the depth to and interval of all freshwater resources which may be affected by injection;

Name: Fox Hills Depth: 800'

(9) Schematic drawings of the surface and subsurface construction details of the well with detailed drawings of the gauge connections;

See attached picture of similar WH.

(2.9) The source and nature of the substance or substances to be injected, its viscosity, its compatibility with the receiving formation, including stability indices, and the estimated average and maximum daily amounts to be injected. If the nature of the injected fluid is produced water, a water quality analysis must be submitted and must include information on total dissolved solids content, chlorides, sodium, sulfates, nitrates, and hydrocarbons;

See attach water analysis from Jacam Laboratories.

Average Volume: 1500 BWPD

Maximum Volume: 4000 BWPD

(2.10) The average and maximum estimated injection pressure;

Average: 800 PSI

Maximum: 1500 PSI

(2.11) A narrative description of any proposed production stimulation program, including a feasibility study, process description, and an explanation of how the data were determined, such as working calculations;

Production stimulation Program

Feasibility Study: NA

Process description: NA

How data was Determined: NA

(2.12) An analysis of any corrective action on all wells identified on the plat required by subdivision (1) of this section and the basis for the conclusion;

Corrective Action:

Continental Resources is not aware of any corrective actions needed on any of the wells in the AOR.

Basis for the Conclusion:

All wells within the area of review are properly constructed so no corrective action is need.

(2.13) The injection zone characteristics, including porosity, compressibility, and intrinsic permeability. This information has been collected over the numerous years of drilling and completion of wells within the unit using well logs.

Porosity: 29%

Compressibility: 1.6×10^{-6}

Intrinsic Permeability: 1 md

(2.14) The expected project life is 25 years

(2.15) The surface owner's name, address, and telephone number.

Name: Than Brengle

Address: 11598 Ladner Rd, Buffalo, SD, 57720

Telephone number: 605-210-0794

As indicated in Section 4, the Secretary reserves the right to request additional pertinent information needed to make a recommendation on the approvability of the application. The secretary shall deny any permit application which is incomplete.

In addition, the applicant will need to submit a notarized Certification of Applicant (Form 13), that can be obtained at <http://denr.sd.gov/documents/form13.pdf>. or by contacting the South Dakota Department of Environment and Natural Resources

All permits to inject are issued pursuant to the provisions of chapter 74:10:11.01.

Name of person legally responsible for Class II operation (owner/operator),

Continental Resources INC

Address: PO Box 268870, Oklahoma City, OK, 73126

Telephone: (405) 234-9000

Local representative or contact person if different from above:

Name: Corey Irons

Address: 11583 S. Cave Hills Road, Buffalo, SD, 57720

Telephone: (605) 375-3731

RECEIVED

AUG 23 2021

DEPT OF AGRICULTURE & NATURAL
RESOURCES - RAPID CITY

