

**APPLICATION FOR PERMIT TO:**

**Drill**       Deepen       Re-enter       Recomplete and Operate

Date Received:  
05/15/2015

TYPE OF WELL   OIL    GAS    COALBED    OTHER \_\_\_\_\_      Refiling

ZONE TYPE   SINGLE ZONE    MULTIPLE ZONES    COMMINGLE ZONES       Sidetrack

Well Name: DILL GULCH 6-88      Well Number: 2-22H21

Name of Operator: SWN PRODUCTION COMPANY LLC      COGCC Operator Number: 10396

Address: PO BOX 12359

City: SPRING      State: TX      Zip: 77391

Contact Name: CHERYL ROWELL      Phone: (832)796-7439      Fax: (832)796-8817

Email: cheryl\_rowell@swn.com

**RECLAMATION FINANCIAL ASSURANCE**  
Plugging and Abandonment Bond Surety ID: 20110201

**WELL LOCATION INFORMATION**

QtrQtr: NWSW      Sec: 22      Twp: 6N      Rng: 88W      Meridian: 6

Latitude: 40.462194      Longitude: -107.256278

Footage at Surface:      2233 feet      FNL/FSL      305 feet      FEL/FWL

Field Name: WILDCAT      Field Number: 99999

Ground Elevation: 6550      County: ROUTT

GPS Data:  
Date of Measurement: 02/24/2015      PDOP Reading: 1.8      Instrument Operator's Name: GLENN MCELROY

If well is    Directional       Horizontal (highly deviated)      **submit deviated drilling plan.**

Footage at Top of Prod Zone:      FNL/FSL      FEL/FWL      Bottom Hole:      FNL/FSL      FEL/FWL

2232      FSL      276      FEL      2117      FSL      663      FWL

                                 Sec: 21      Twp: 6N      Rng: 88W      Sec: 21      Twp: 6N      Rng: 88W

**LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT**

Surface Ownership:    Fee       State       Federal       Indian

The Surface Owner is:    is the mineral owner beneath the location.  
(check all that apply)    is committed to an Oil and Gas Lease.  
    has signed the Oil and Gas Lease.  
    is the applicant.

The Mineral Owner beneath this Oil and Gas Location is:    Fee       State       Federal       Indian

The Minerals beneath this Oil and Gas Location will be developed by this Well:   Yes

The right to construct the Oil and Gas Location is granted by:   oil and gas lease

Surface damage assurance if no agreement is in place: \_\_\_\_\_      Surface Surety ID: \_\_\_\_\_

**LEASE INFORMATION**

Using standard QtrQtr, Sec, Twp, Rng format, describe one entire mineral lease that will be produced by this well (Describe lease beneath surface location if produced. Attach separate description page or map if necessary.)

Section 21 T6N R88W 6th PM  
S2SW, SWSE, N2S2, N2  
600 acres held by State Lease #8598

Section 22 T6N R88W  
W2NW, NWSW, E2W2, E2  
600 acres held by State Lease #8599

Total Acres in Described Lease: 1200 Described Mineral Lease is:  Fee  State  Federal  Indian

Federal or State Lease # 8598

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 663 Feet

**CULTURAL DISTANCE INFORMATION**

Distance to nearest:

Building: 1868 Feet

Building Unit: 1900 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 1409 Feet

Above Ground Utility: 1050 Feet

Railroad: 5280 Feet

Property Line: 908 Feet

**INSTRUCTIONS:**

- All measurements shall be provided from center of the Proposed Well to nearest of each cultural feature as described in Rule 303.a.(5).
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.

**DESIGNATED SETBACK LOCATION INFORMATION**

Check all that apply. This location is within a:  Buffer Zone  
 Exception Zone  
 Urban Mitigation Area

- Buffer Zone – as described in Rule 604.a.(2), within 1,000' of a Building Unit
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.
- Urban Mitigation Area - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: \_\_\_\_\_

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: \_\_\_\_\_

**SPACING and UNIT INFORMATION**

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 817 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 663 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): Hayden State Unit Number: \_\_\_\_\_

**SPACING & FORMATIONS COMMENTS**

The distance to nearest completed or permitted wellbore was calculated using the directional survey data from the Dill Gulch 1-22, API #107-06260.

Unit Configuration Map attached

**OBJECTIVE FORMATIONS**

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
NIOBRARA	NBRR			

**DRILLING PROGRAM**

Proposed Total Measured Depth: 14164 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 28 Feet (Including plugged wells)

Will a closed-loop drilling system be used? Yes

Is H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H<sub>2</sub>S Drilling Operations Plan)

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? Yes

Will oil based drilling fluids be used? Yes

BOP Equipment Type:  Annular Preventor  Double Ram  Rotating Head  None

## GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 609

## DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Commercial Disposal

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted?                     

Reuse Facility ID:                      or Document Number:                     

## CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	30	20		0	80	300	80	0
SURF	17+1/2	13+3/8	54.5	0	1850	1129	1850	0
1ST	12+1/4	9+5/8	40	0	7800	1646	7800	1650
2ND	8+3/4	5+1/2	20	0	14164	1356	14164	7600

Conductor Casing is NOT planned

## DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
- Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
- Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
- Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
- Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

## GREATER WATTENBERG AREA LOCATION EXCEPTIONS

Check all that apply:

- Rule 318A.a. Exception Location (GWA Windows).
- Rule 318A.c. Exception Location (GWA Twinning).

## RULE 502.b VARIANCE REQUEST

Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number

## OTHER LOCATION EXCEPTIONS

Check all that apply:

- Rule 318.c. Exception Location from Rule or Spacing Order Number \_\_\_\_\_
- Rule 603.a.(2) Exception Location (Property Line Setback).

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

## OPERATOR COMMENTS AND SUBMITTAL

Comments

This application is in a Comprehensive Drilling Plan \_\_\_\_\_ CDP #: \_\_\_\_\_

Location ID: 434520

Is this application being submitted with an Oil and Gas Location Assessment application? Yes

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: \_\_\_\_\_ Print Name: CHERYL ROWELL

Title: Sr. Staff Reg. Analyst Date: 5/15/2015 Email: cheryl\_rowell@swm.com

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:  Director of COGCC Date: 7/13/2015

Expiration Date: 07/12/2017

### API NUMBER

05 107 06264 00

## Conditions Of Approval

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

### COA Type

### Description

- 1) Operator shall comply with the most current revision of the Northwest Notification Policy. See attached notice.
- 2) Operator shall provide cement coverage from the intermediate casing shoe (9+5/8" First String) to a minimum of 200' above the surface casing shoe to provide isolation of all Cretaceous (including Mesaverde Group and Lewis Formation) oil, gas, and waterbearing sandstone and coalbed formations that are not otherwise covered by surface casing. Verify intermediate casing cement coverage with a cement bond log.

## Best Management Practices

<b>No</b>	<b>BMP/COA Type</b>	<b>Description</b>
1	Planning	When feasible develop multiple well sites by using directional drilling to reduce cumulative impacts and adverse impacts on wildlife resources.
2	General Housekeeping	Fence the well site after drilling to restrict public and wildlife access. Keep well site location, the road, and the pipeline easement free of noxious weeds, liter and debris. Spray for noxious weeds, and implement dust control, as needed. Southwestern Energy Production Company (SEPCO) will not permit the release or discharge of any toxic or hazardous chemicals or chemicals or wastes on Owners' land. Construct and maintain gates where any roads used by SEPCO cross through fences on the leased premises.
3	Storm Water/Erosion Control	Use water bars and other measures to prevent erosion and non-source pollution. Implement and maintain BMP's to control storm water runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. Co-locate gas and water gathering lines whenever feasible and mitigate any erosion problems that arise due to the construction of any pipeline.
4	Construction	Remove only the minimum amount of vegetation necessary for the construction of roads and facilities. Conserve topsoil during excavation and reuse as cover on disturbed areas to facilitate regrowth or vegetation. No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment.
5	Drilling/Completion Operations	Operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.  One of the first wells drilled on the pad will be logged with Cased-hole Pulsed Neutron Log with Gamma Ray Log from TD into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measured-while-drilling gamma-ray log. The Form 5, Completion Report, for each well on the pad will list all logs run in that well and have those logs attached. The Form 5 for each well shall clearly state "No open-hole logs were run" and shall reference the Rule 317.p Exception granted for the well.
6	Interim Reclamation	Utilize only such area around each producing well as is reasonably necessary. Restore the remainder of the well site location to its original condition within a reasonable time after the completion of operations. All reseeding shall be done with grasses consistent with the Rocky Mountain native mix or other grasses reasonably requested by surface owner and during planting period suggested by Owner.
7	Final Reclamation	All surface restoration shall be accomplished to the satisfaction of Owner. All reseeding shall be done with grasses consistent with the Rocky Mountain native mix or other grasses reasonably requested by surface owner and during planting period suggested by Owner. Final reclamation shall be completed to the reasonable satisfaction of the owner as soon as practical after installation (weather permitting) and in accordance with regulatory agency standards.

Total: 7 comment(s)

### Applicable Policies and Notices to Operators

NW Colorado Notification Policy.

Notice Concerning Operating Requirements for Wildlife Protection.

### Attachment Check List

<b>Att Doc Num</b>	<b>Name</b>
400829400	FORM 2 SUBMITTED
400839236	WELL LOCATION PLAT
400839356	DIRECTIONAL DATA
400840253	OPEN HOLE LOGGING EXCEPTION
400840255	LEASE MAP
400840258	DEVIATED DRILLING PLAN
400840259	UNIT CONFIGURATION MAP

Total Attach: 7 Files

### **General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
Permit	corrected TOPZ from sec 22 to sec 21 as per opr. LGD comments have been addressed. Final review complete.	7/13/2015 10:56:31 AM
Permit	Removed surface bond due to lease as per opr. Exception request for Rule 317.p attached	6/15/2015 8:08:13 AM

LGD	<p>LGD Comments – Routt County</p> <p>SWN Production Company</p> <p>Dill Gulch 6-88 2-22H</p> <p>Doc #400829400[02] and 400821078[02A]</p> <p>NW4SW4 Sec 22-6-88</p> <p>Routt County has a permitting process for all oil/gas operations. The operator is aware that an application must be submitted to Routt County.</p> <p>Routt County has a review process for all county roads used for oil/gas operations. The operator has contacted Routt County with regard to road review procedures.</p> <p>Routt County requests information from the COGCC after drilling operations are complete for the located of aquifers and showing that casing was completed per minimum requirements of the COGCC regulations to protect all aquifers.</p> <p>The site is located approximately 2.5 miles southwest of the Yampa Valley Regional Airport. The operator is required to file with the FAA an evaluation and receive approval for drilling operations.</p> <p>Routt County requests that the operator continue to be required to comply with Rule 609. The well site is located between two separate waterways, less than 0.5 miles and lower in elevation. Stokes Gulch is located to the north and Dry Creek located to the south. There are two domestic wells being tested with the permitting of the Dill Gulch 2-22 well. Continued testing of these water sources should be required. Routt County requests that a COA be added under Form 2A for the required testing of the two waterways.</p> <p>Any additional construction work may require a GE permit from Routt County. Due to the site being located between two drainages, any access roads and the well pad must have a comprehensive BMP Plan and continually monitored for protection of these water sources from erosion and contaminants.</p> <p>Continued best management practices should be used to test or monitor air quality and meet all requirements of the CDPHE. New technology should be used to prohibit emissions from tanks, equipment and flares on the onset of production.</p>	5/20/2015 3:37:00 PM
Engineer	Offset water well check: COGCC evaluated offset water wells within one mile of this proposed well's surface hole location. This information was used in addition to locally-available geophysical logs and hydrogeologic information to evaluate the adequacy of the operator's proposed surface casing setting depth. The deepest water well within one mile is 20 feet. However, deeper water wells (366' and 400') are present to the north in Section 15.	5/19/2015 4:48:28 PM
Engineer	The Lewis Formation is present at surface, overlying the Mesaverde Group, which is considered a potential freshwater resource in the Sand Wash Basin (CGS Ground Water Atlas of Colorado, 2003). Deep water wells in the area are screened in the Mesaverde Group. The proposed surface casing setting depth of 1,850' may not cover the entire Mesaverde Group, based on log tops in offset wells. Minimum intermediate casing cement coverage requirements are specified in Condition of Approval #2. COGCC concurs with operator's plan to provide overlapping cement coverage into overlying casing shoes for the intermediate casing (First String) and the production casing (Second String).	5/19/2015 4:47:42 PM

Engineer	One existing offset oil & gas well is present within 1,500' of this proposed wellbore. Offset well Dill Gulch 1-22 meets standards, and no offset mitigation is required. Operator's anti-collision plan is listed in the operator BMPs on this form. Changed operator Wellbore Integrity Contact from a phone number (Matt Briggs, 832-796-7309) to an email address (Matt_Briggs@swn.com) on the Offset Well Evaluations tab of this form.	5/19/2015 4:40:44 PM
Permit	Passed Completeness	5/19/2015 1:57:30 PM

Total: 7 comment(s)