

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

TYPE OF WELL OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> COALBED <input type="checkbox"/> OTHER <u>CO2</u>	Refiling <input type="checkbox"/>
ZONE TYPE SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONES <input type="checkbox"/> COMMINGLE ZONES <input type="checkbox"/>	Sidetrack <input type="checkbox"/>

Date Received:
03/09/2018

Well Name: DC Well Number: 22

Name of Operator: KINDER MORGAN CO2 CO LP COGCC Operator Number: 46685

Address: 1001 LOUISIANA ST SUITE 1000

City: HOUSTON State: TX Zip: 77002

Contact Name: Chris Lopez Phone: (970)882-5537 Fax: ()

Email: christopher_lopez@kindermorgan.com

RECLAMATION FINANCIAL ASSURANCE
Plugging and Abandonment Bond Surety ID: 20110027

WELL LOCATION INFORMATION

QtrQtr: SESW Sec: 8 Twp: 40N Rng: 17W Meridian: N

Latitude: 37.737199 Longitude: -108.751609

Footage at Surface: 962 Feet ^{FNL/FSL} FSL 1567 Feet ^{FEL/FWL} FWL

Field Name: DOE CANYON Field Number: 17210

Ground Elevation: 7561 County: DOLORES

GPS Data:
Date of Measurement: 08/02/2017 PDOP Reading: 6.0 Instrument Operator's Name: R.J. Caffey

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

Sec: _____ Twp: _____ Rng: _____ Sec: _____ Twp: _____ Rng: _____

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.)

ALL of Section 8, T40N, R17W. See attached Oil & Gas Lease for more information.

Total Acres in Described Lease: 2023 Described Mineral Lease is: Fee State Federal Indian

Federal or State Lease # COC011160

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 962 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 1840 Feet

Building Unit: 1840 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 737 Feet

Above Ground Utility: 2120 Feet

Railroad: 5280 Feet

Property Line: 962 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 proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 2530 Feet

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

Federal or State Unit Name (if appl): Doe Canyon Unit Number: 47612X

SPACING & FORMATIONS COMMENTS

OBJECTIVE FORMATIONS

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

DRILLING PROGRAM

Proposed Total Measured Depth: 9083 Feet

Distance from the proposed wellbore to nearest existing or proposed wellbore belonging to another operator, including plugged wells:

Enter distance if less than or equal to 1,500 feet: _____ Feet No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H₂S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? Yes (If Yes, attach an H₂S Drilling Operations Plan)

Will salt sections be encountered during drilling? Yes

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

Will oil based drilling fluids be used? No

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: Recycle/reuse

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Fluids: recycle as much as possible; any excess will go to a licensed Class I disposal facility. Cuttings are dewatered in a closed loop system and disposed of at a permitted commercial solid waste facility.

Beneficial reuse or land application plan submitted? No

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	20	16	55	0	80	100	80	0
SURF	12+1/4	9+5/8	36	0	2317	1200	2317	0
1ST	8+3/4	7	29&32	0	8708	2200	8708	0
1ST LINER	6	4+1/2	12.6	8633	9083	100	9083	8633

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 is an APD for a vertical wellbore.

No hydraulic fracturing is being planned.

There are no water wells, seeps or springs located within 1/2 mile radius of the proposed DC-22 well location. A Form 4 will be filed accordingly per Rule 609.

Kinder Morgan CO2 Company, LP may install glycol skid injection equipment on the well location to address hydrate formation/line obstruction due to freezing. The tanks would be filled by a supply truck every 7 to 10 days, and would be operated between mid-October and June as weather conditions dictate. When not in operation, the skids would either remain installed on location, or be removed from the well location and stored during the off-season to protect them from potential vandalism as determined necessary by Kinder Morgan. The pumps are fairly quiet and should not be audible outside of the well pad area. A plot plan of glycol skid equipment is attached.

This application is in a Comprehensive Drilling Plan No CDP #: _____

Location ID: _____

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: Chris Lopez

Title: EHS Specialist Date: 3/9/2018 Email: christopher_lopez@kindermorg

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: 5/7/2018

Expiration Date: 05/06/2020

API NUMBER
05 033 06184 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.

<u>COA Type</u>	<u>Description</u>
	<p>1) Follow CO2 venting and monitoring procedures as per procedure prepared by Kinder Morgan, dated June 26, 2014 REV3 and approved by the COGCC Field Inspection Unit.</p> <p>2) Operator shall provide cement coverage from the First String (7" casing) shoe to a minimum of 200' above the surface casing shoe to provide isolation of all Permian (Cutler) or other oil, gas, and water-bearing sandstone and coalbed formations that are not otherwise covered by surface casing. Verify First String (7" casing) and First Liner (4 ½" liner) cement coverage with a cement bond log.</p> <p>3) If borehole problems occur while drilling and an unplanned sidetrack is required, the following shall apply:</p> <p>a.) Before proceeding, contact the COGCC Regional Engineer for SW Colorado for verbal approval and provide an explanation as to what happened to the original borehole and what the plan is for the sidetrack.</p> <p>Contact Information: Craig Burger – Regional Engineer 970-625-2497 ext 2 off 970-319-4194 cell Craig.burger@state.co.us</p> <p>b.) Adhere to the instructions provided in the "UNPLANNED Sidetrack While Drilling: Approval and Reporting Process – Southwestern Colorado San Juan Basin ONLY" that can be found on the COGCC website.</p> <p>At the COGCC Web Site Forms Form 2-Permit to Drill Instructions</p> <p>4) Contact COGCC Regional Engineer – Craig Burger when encountering a well control issue, unexpected water flows, and unexpected Hydrogen Sulfide.</p>

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	<p>A Kinder Morgan Fire Mitigation Plan is currently on file with the Montezuma County Planning Office.</p> <p>Any material not in use that might constitute a fire hazard will be removed a minimum of 25 feet from the well head.</p> <p>Any electrical installations inside bermed areas will comply with API 500 classifications and comply with the current national electrical code as adopted by the State of Colorado.</p>
2	Traffic control	<p>A Road Use Plan, which addresses traffic concerns specific to the CB-5 well, has been agreed upon between Kinder Morgan and the Montezuma County Road and Bridge Department. Kinder Morgan will consult with the County Road and Bridge Supervisor to ensure that all county related traffic concerns are addressed.</p> <p>All access roads are fully compliant with local county road standards. Access roads are composed of compacted gravel.</p> <p>The well is covered by Kinder Morgan's Cow Canyon State Highway Access Permit and Method of Handling Traffic plan currently on file with CDOT.</p>

3	General Housekeeping	<p>Erosion control barriers, namely fiber wattles, will be placed at the edge of disturbance where necessary. Care will be taken to avoid disturbance outside of the project area unless it is deemed necessary for equipment stability and fire safety.</p> <p>During the construction, drilling and completion phases, on-site trash dumpsters are emptied regularly by the local waste management company.</p> <p>Steel ranch fencing will be placed around the well head after the well is drilled. Once the well is tied-in, the fencing will be removed. The proposed well location will be drilled using a closed loop system and will therefore not use open pits.</p> <p>During drilling and completion operations, safety officers are present on location to ensure that livestock, wildlife and unauthorized personnel do not enter the location.</p> <p>Following completion, the only items present on the well pad are the well head, above ground pipeline junction and possible glycol skid.</p>
4	Wildlife	<p>Well is located in a Elk Winter Concentraion Area. If new oil and gas operations must occur within CPW-identified mule deer critical winter range or elk winter concentration areas), the operator agrees to conduct new oil and gas operations outside the time period from December 1 through April 15.</p>
5	Storm Water/Erosion Control	<p>Diversion ditches will be implemented to divert stormwater run-on and run-off around the well pad. Compacted earthen berms will also be utilized to control stormwater runon and run-off.</p> <p>Tackifier will be added to the stored topsoil piles and all slopes to prevent erosion.</p> <p>Stockpiled soils will have slopes not greater than 3:1.</p> <p>Stormwater BMP's will be maintained/amended by Kinder Morgan as site conditions change throughout the construction and reclamation process.</p>
6	Material Handling and Spill Prevention	<p>The use of a closed-loop drilling system will reduce the amount of waste produced and water used during drilling operations. Solid cuttings will be disposed of at a permitted commercial solid waste facility.</p> <p>Water that can no longer be reused or recycled will be disposed of at a permitted Class I disposal well.</p> <p>Sufficiently impervious containment devices will be constructed around any condensate and produced water tanks. The containment devices will be sufficiently impervious to contain any spilled or released material. All containment devices will be inspected at regular intervals and maintained in good condition.</p> <p>Tanks are designed to meet all API 650 guidelines.</p>
7	Construction	<p>All equipment will be stored within the right-of-way (ROW) area of disturbance. Top soil will be removed to create a level pad for drilling and access road.</p> <p>Vegetation that does not need to be removed will be avoided during construction and removed vegetation will be cut near ground level, leaving the root system intact, except where permanent facilities, roads, or ROW's and well pads require the complete removal of vegetation.</p>
8	Noise mitigation	<p>During normal operations, the well will remain within COGCC regulations for noise. However, during the construction phase of the project, this standard may occasionally be exceeded.</p>
9	Emissions mitigation	<p>Non-flammable CO₂ will be produced from the Leadville formation and thus green completion per Rule 805.b.(3) does not apply.</p> <p>All CO₂ wells are equipped with a CO₂ leak detection monitor during drilling.</p>
10	Drilling/Completion Operations	<p>Blowout preventer equipment (BOPE) complies with COGCC equipment regulations. Mineral Management certification or Director approved training for blowout prevention has been conducted for at least one person at the well site during drilling operations. Kinder Morgan conducts a BOPE test and files a 24-hour notice (Form 42) after each casing emplacement and/or every 30-days.</p> <p>Adequate blowout prevention equipment is used on all well servicing operations. Backup stabbing valves are used on well servicing operations during reverse circulation and are pressure tested before each well servicing operation using both low-pressure air and high-pressure fluid.</p> <p>No pits are present at this well site.</p>
11	Drilling/Completion Operations	<p>Open-Hole Resistivity Log with Gamma Ray Log will be run from TD into the production or intermediate casing. A cased hole Pulsed Neutron log will be run on production casing, or on intermediate casing into the surface casing. A CBL log will be run to surface. Kinder Morgan will use a mudlogger and produce a mudlog from the surface to TD. The Form 5 Completion Report will list all logs run and have those logs attached.</p> <p>317.p. exception request letter attached.</p>

12	Interim Reclamation	This location is currently classified as 'Dry-Land Crop'. Surface roughening, surface contouring, seeding and weed control will be employed to facilitate vegetation reestablishment. A standard stabilized "Working Area" 150 feet by 360 feet in size will be maintained as level, graveled and weed-free for maintenance/workover activities. The area surrounding the Working Area will be returned to dry-land crop or re-seeded with a surface owner approved seed mix.
13	Final Reclamation	All disturbed areas that are not necessary for operational procedures will be restored to at least 80 percent of pre-disturbance vegetative cover.

Total: 13 comment(s)

Applicable Policies and Notices to Operators

Notice Concerning Operating Requirements for Wildlife Protection.
http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
401565645	FORM 2 SUBMITTED
401568773	H2S CONTINGENCY PLAN
401568774	DRILLING PLAN
401568780	OIL & GAS LEASE
401568781	WELL LOCATION PLAT
401569063	OPEN HOLE LOGGING EXCEPTION

Total Attach: 6 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed. No LGD or public comment received.	05/07/2018
Permit	Per operator: Checked "is committed to..." and "has signed the O&G lease" on surface & minerals tab. Corrected distance to nearest building and building unit to 1840'. Corrected distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation to 2530' (NNE to Doe Canyon #6).	05/07/2018
Permit	Appears to be a building unit 1840' SW of well location. Confirm Surface & Minerals tab data.	05/07/2018
Engineer	Fresh water zones have been depicted in the Lower Cretaceous and into the Upper Triassic or the Wingate sandstone (CGS Ground Water Atlas) which is the formation on top of the Chinle. The Chinle formation is estimated to be at a depth of 1511'-2217' with the potential of <10,000 ppm TDS). The operator plans to set the surface casing at a depth of 2317' or 100' into the Cutler formation. The surface casing will be cemented to surface as a measure to isolate and protect all shallow water aquifers. The deepest water well within a mile of this proposed well is 140' feet deep. Offset well evaluation: Existing offset oil and gas wells within 1,500 feet of this wellbore meet standards. No mitigation required. Operator's comment states: No hydraulic fracturing is being planned.	04/11/2018
Permit	Passed Completeness.	03/20/2018

Total: 5 comment(s)