FORM 2 Rev 08/13

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number: 400584460

Date Received: 05/15/2014

APPLICATION FOR PERMIT TO:

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

TYPE OF WELL OIL ☐ GAS ☐ COALBED ☐ OTHER CO2 pilot Refiling ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐ Sidetrack ☐

Well Name: Doe Canyon Well Number: 17

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

Address: 17801 HWY 491

City: CORTEZ State: CO Zip: 81321

Contact Name: Paul Belanger Phone: (970)882-2464 Fax: (970)882-5521

Email: Paul_Belanger@kindermorgan.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20110027

WELL LOCATION INFORMATION

QtrQtr: TR68 Sec: 4 Twp: 40N Rng: 18W Meridian: N

Latitude: 37.757850 Longitude: -108.849400

Footage at Surface: 1029 feet FSL (FNL/FSL) 1760 feet FEL (FEL/FWL)

Field Name: DOE CANYON Field Number: 17210

Ground Elevation: 7153 County: DOLORES

GPS Data:

Date of Measurement: 03/31/2014 PDOP Reading: 5.9 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: (check all that apply)
- ☐ is the mineral owner beneath the location.
- ☐ 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: Bond

Surface damage assurance if no agreement is in place: Blanket Surface Surety ID: 20080051

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.)

tr 68, section 4, 40N 18W and lands in section 9.

Total Acres in Described Lease: 160 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease #

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 285 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building:	765	Feet
Building Unit:	796	Feet
High Occupancy Building Unit:	5280	Feet
Designated Outside Activity Area:	5280	Feet
Public Road:	298	Feet
Above Ground Utility:	280	Feet
Railroad:	5280	Feet
Property Line:	262	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: 04/04/2014

SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 1375 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 1360 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: 8833 Feet

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

Will a closed-loop drilling system be used? Yes

Is H_2S 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: [X] Annular Preventor [X] Double Ram [X] 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 licensed UIC disposal facility. Cuttings are dewatered in a closed loop system and disposed of at a permitted E&P commercial solid waste facility.

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	20	16	55	0	80	100	80	0
SURF	12+1/4	9+5/8	36	0	2478	1100	2478	0
1ST	8+3/4	7	29&32	0	8404	2400	8404	0
OPEN HOLE	6			8404	8833			

[ ] 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 will be a veritical pilot borehole with the intent of drilling, logging, cementing back and setting KOP for subsequent horizontal wellbore; see docnum 400584461.

There is one water well located within a .5 mile radius of the DC-17 wellhead. If deemed suitable, testing will be conducted on this well per COGCC regulations. A Form 4 will be filed accordingly.

Pre-Application notifications were mailed to three landowners within the buffer zone on April 4th, 2014 -see attachments with form 2A.
No fracking is being planned.

This application is in a Comprehensive Drilling Plan _____ 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: Paul Belanger

Title: Regulatory contractor Date: 5/15/2014 Email: Paul_Belanger@kindermorgan.

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: Matthew Lee **Director of COGCC** Date: 7/25/2014

Expiration Date: 07/24/2016

API NUMBER
05 033 06180 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) Provide 48 hour notice of spud to COGCC and submit via form 42 2) Submit CBL on 7” OD production casing

Best Management Practices

No	BMP/COA Type	Description
1	Planning	Any material not in use that might constitute a fire hazard will be removed a minimum of 25 feet from the wellhead, tanks and separator. Any electrical installations inside the bermed area will comply with API RP 500 classifications and comply with the current national electrical code as adopted by the State of Colorado.
2	Traffic control	All access roads are fully compliant with local county road standards. Access roads are composed of compacted gravel. In an effort to mitigate dust, magnesium-chloride applications to the road surface are performed per an agreement with Dolores County.
3	General Housekeeping	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. During the construction, drilling, and completion phases, on-site trash dumpsters are emptied regularly by the local waste management company. The proposed well location will be drilled using a closed loop system and will therefore not use open pits. During drilling and completion operations, safety officers are present on location to ensure that livestock, wildlife, and unauthorized personnel do not enter the location.
4	Storm Water/Erosion Control	Diversion ditches will be implemented to divert run-on and run-off around the well pad. Compacted earthen berms will also be utilized to control stormwater run-on and runoff. Tackifier will be added to the stored topsoil piles and all slopes to prevent erosion. Stockpiled soils will have slopes not greater than 3:1. Stormwater BMPs will be maintained/amended by Kinder Morgan as site conditions change throughout the construction and reclamation process.
5	Material Handling and Spill Prevention	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 solid waste facility. Water that can no longer be reused or recycled will be disposed of in a Class I disposal well. 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. Tanks are designed to meet all API 650 guidelines.
6	Dust control	In an effort to mitigate dust, magnesium-chloride applications to the road surface are performed per an agreement with Dolores County.
7	Construction	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. 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 ROWs, and wellpads require the complete removal of vegetation.
8	Noise mitigation	During normal operations, the well will remain within COGCC regulations for noise. However, during the construction phase of the project, this standard may be exceeded occasionally.
9	Emissions mitigation	Non-flammable CO2 will be produced from the Leadville formation and thus green completion per rule 805 (3) does not apply. All CO2 wells are equipped with a CO2 leak detection monitor during drilling.

10	Drilling/Completion Operations	In the event that Kinder Morgan does not log the well with minimum open-hole resistivity and gamma ray log per Rule 317.0. then Kinder Morgan will, at a minimum, log the entire vertical well bore, or missing portion of the wellbore, with cased hole gamma ray and pulsed neutron to comply with COGCC Rule 317.o."
11	Drilling/Completion Operations	Blowout preventer equipment (BOPE) complies with COGCC equipment regulations. Kinder Morgan conducts a BOPE test and files a 24 hour notice (Form 42) at the initial rig-up time, after each casing emplacement, and/or every 30 days. 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. No pits are present at the well site.
12	Interim Reclamation	Blowout preventer equipment (BOPE) complies with COGCC equipment regulations. Kinder Morgan conducts a BOPE test and files a 24 hour notice (Form 42) at the initial rig-up time, after each casing emplacement, and/or every 30 days. 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. No pits are present at the well site.
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.

Attachment Check List

Att Doc Num	Name
1857435	SELECTED ITEMS REPORT
400584460	FORM 2 SUBMITTED
400603740	OffsetWellEvaluations Data
400603750	H2S CONTINGENCY PLAN
400603751	OTHER
400607191	DRILLING PLAN
400607199	WELL LOCATION PLAT

Total Attach: 7 Files

General Comments

User Group	Comment	Comment Date
Permit	Final review completed; no LGD or public comment received.	7/24/2014 2:34:12 PM
Permit	Kinder Morgan has provided a BMP to address logging of this well.	7/24/2014 8:06:14 AM
Engineer	This proposed well is designated the pilot well which will be drilled vertically to TD, the pay zone will be logged, the open hole will be cemented back to facilitate the kick off point to drill the lateral as depicted in the next APD doc#400584461.	5/6/2014 4:06:42 PM
Engineer	Fresh water zones have been depicted in the lower cretaceous and into the upper triassic or the windgate sandstone (CGS Ground Water Atlas). Of late, the BLM fluids/minerals geologist has expressed an interest and concern for deeper formations or at least 150' into the Chinle formation (<10,000 ppm TDS). The Chinle formation is estimated to be at a depth of 1510'-2378'. The deepest water well within a mile of this proposed well is 81 feet deep. Also, the operator is setting their surface casing well into the Cutler formation or at a depth of 2478' which is deeper than base of the Chinle (see SELECTED ITEMS in the attachments). The surface casing will be cemented to surface as a measure to isolate and protect all shallow water aquifers.	5/6/2014 2:43:09 PM
Permit	Revised Unit to Doe Canyon Secondary Unit.	5/19/2014 11:13:40 AM
Permit	This permit is the pilot of a pilot/lateral drilling plan. Approval of this permit must precede the approval of the lateral in order that API sidetrack designations be correct.	5/19/2014 10:01:30 AM
Permit	Lease is for section 9 while both bottom hole and surface location is in section 4.	5/19/2014 7:13:21 AM
Permit	Surface use agreement not signed by Kinder Morgan. Operator requests that they bond on. Will change to bond on when permit gets close to approval.	5/19/2014 7:09:05 AM
Permit	The well location appears not to fall within the Mcelmo unit. Well location appears to fall within Doe Canyon Secondary Unit COC047612X	5/19/2014 6:58:17 AM
Permit	Passed completeness	5/16/2014 10:26:46 AM

Total: 10 comment(s)