

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:

401031520

APPLICATION FOR PERMIT TO:

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

TYPE OF WELL OIL ☐ GAS ☐ COALBED ☐ OTHER CO2

Refilling ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☒

Date Received:

04/25/2016

Well Name: DOE CANYON Well Number: 3
Name of Operator: KINDER MORGAN CO2 CO LP COGCC Operator Number: 46685
Address: 17801 HWY 491
City: CORTEZ State: CO Zip: 81321
Contact Name: Andy Antipas Phone: (970)882-5534 Fax: (970)882-5521
Email: Andrew_Antipas@kindermorgan.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20110027

WELL LOCATION INFORMATION

QtrQtr: Lot 21 Sec: 6 Twp: 40N Rng: 17W Meridian: N

Latitude: 37.756500

Longitude: -108.770770

Footage at Surface: 2752 feet FNL/FSL FSL 2267 feet FEL/FWL FWL

Field Name: DOE CANYON Field Number: 17210

Ground Elevation: 7696 County: DOLORES

GPS Data:

Date of Measurement: 09/20/2015 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
1819 FSL 2764 FEL 1819 FSL 2764 FEL
Sec: 6 Twp: 40N Rng: 17W Sec: 6 Twp: 40N Rng: 17W

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 6 AND N 1/2 SECTION 7 40N17W

Total Acres in Described Lease: 1254 Described Mineral Lease is: ☐ Fee ☐ State ☒ Federal ☐ Indian

Federal or State Lease # COC9415

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 2764 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 3290 Feet
Building Unit: 5280 Feet
High Occupancy Building Unit: 5280 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 250 Feet
Above Ground Utility: 5280 Feet
Railroad: 5280 Feet
Property Line: 2260 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: 2480 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 3175 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): COC Unit Number: 9415

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: 9498 Feet

Distance from proposed wellbore to nearest existing or permitted wellbore belonging to another operator:

4392 Feet (Including plugged wells)

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 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	14	55	0	80	100	80	0
SURF	12+1/4	9+5/8	36	0	3024	1300	3024	0
1ST	8+3/4	7	29/32	0	9400	3400	9400	0
OPEN HOLE	6			9400	9498	0		

☐ 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 form 2 is being submitted in conjunction with a form 4 sundry docnum 401031522 that will plug back the horizontal wellbore, -01 and part of the vertical pilot, -00. The intent is to pull chrome casing and plug back both boreholes and then directionally drill below the surface casing and then resume a vertical wellbore to the Leadville.

Salt zones are expected and procedures described in the attached drilling plans. H2S is also expected and those detailed plans are attached.

There are no water wells, seeps or springs located within a 1/2 mile radius of the DC-3 well location. A Form 4 will be filed accordingly per Rule 609.

The current plat survey submitted with this document is more accurate than original survey.

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

Location ID: 322129

Is this application being submitted with an Oil and Gas Location Assessment application? No

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: 4/25/2016 Email: pebelanger@glassdesignresou

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: 7/7/2016

Expiration Date: 07/06/2018

API NUMBER

05 033 06133 02

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

	<p>1) Submit CBL on 7" O.D. production casing</p> <p>2) Follow CO2 venting and monitoring procedures as per procedure prepared by KM, dated June 26, 2014 REV3 and approved by the COGCC Field Inspection Unit.</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: Mark Weems – Regional Engineer-SW Colorado 970-259-4587 off 970-749-0624 cell mark.weems@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 Basing 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 – Mark Weems when encountering a well control issue, unexpected water flows, and unexpected Hydrogen Sulfide.</p>
--	--

Best Management Practices

No BMP/COA Type

Description

1	Planning	<p>A Kinder Morgan Wildfire Mitigation Plan is currently on file with the Dolores County Planning Office.</p> <p>Any material not in use that might constitute a fire hazard will be moved a minimum of 25 feet from the wellhead, tanks and separator.</p> <p>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.</p>
2	Traffic control	<p>Kinder Morgan will consult and work with the County Road & Bridge Department to create a mutually acceptable Road Use Plan for DC-3 before construction commences. All access roads are fully compliant with local county road standards. Access roads are composed of compacted gravel.</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>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>

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. 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	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.
7	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 occasionally exceeded.
8	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.
9	Drilling/Completion Operations	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 muddlogger and produce a mudlog from the surface to TD. The Form 5, Completion Report, will list all logs run and have those logs attached. 317.p. waiver request letter attached
10	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.
11	Interim Reclamation	Surface roughening, surface contouring, seeding, and weed control will be employed to facilitate vegetation reestablishment. Tackifier will be added to reclaimed areas.
12	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: 12 comment(s)

Applicable Policies and Notices to Operators

Policy
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>
1857722	SELECTED ITEMS REPORT
401031520	FORM 2 SUBMITTED
401033939	WELL LOCATION PLAT
401033942	OPEN HOLE LOGGING EXCEPTION
401034707	H2S CONTINGENCY PLAN
401043266	DEVIATED DRILLING PLAN
401043277	DIRECTIONAL DATA
401043281	DRILLING PLAN

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Engineer	Corrected the minimum horizontal distance (plat map view) between this wellbore and a different operator's wellbore to 4392'; operator concurred with correction. (see SELECTED ITEMS REPORT).	7/6/2016 10:40:48 AM
Engineer	The purpose for Form 4 Doc 2612392 dated 1/5/2011 still in process was to report the BHPT. The operator failed to attach the test to the form. At this point in time, the costs to chase down the BHPT are not worth the benefits; so, I have attempted to delete the form 4.	6/16/2016 2:02:43 PM
Engineer	Because of high water production and failure to produce commercial volumes of CO2, the operator currently has plans to plug back both the existing open hole lateral API (ext 01) and the pilot hole API (ext 00) all the way up to the upper Hermosa formation, cut the 7" OD 1st string (production) casing above T/cmt at 3200' and retrieve, and drill an S-shaped side track w/ KOP=3100' to the Leadville pay (API ext 03), run & cmt 7" OD 1st string (production) casing to MTD=9400' TVD=9065', drill open hole w/ 6" bit to MTD=9498' TVD=9163'. Place the well on production.	6/16/2016 11:26:08 AM
Final Review	Pushed to On Hold. Need to process the Form 5 for Sidetrack 01 and two In Process Form 4s prior to approving this Form 2. Waiting on Engineer for these approvals. Status change on 7/6/2016: Other forms have been processed; pushing this Form 2 back to In Process for Final Approval.	6/11/2016 11:49:11 AM
Permit	Final Review Completed. No LGD or public comment received.	3/8/2016 2:01:44 PM
Permit	Per phone conversation with operator, 6/7/2016: 1) Corrected lat/long to reflect plat. 2) Corrected dist. to nearest lease line. 3) Revised open hole logging BMP.	3/7/2016 4:18:15 PM
Permit	1) Does lat/long need to be updated, according to plat? 2) Check dist. to nearest lease line. 3) Check open hole logging BMP for accuracy.	3/7/2016 7:59:40 AM

Engineer	<p>This wellbore will be an S-shaped directionally drilled hole with a kickoff point (KOP) depth of 3100' from an existing vertical well that was drilled and completed in 2007.</p> <p>Fresh water zones have been depicted in the lower cretaceous and into the upper triassic or the windgate sandstone (CGS Ground Water Atlas). There are no water wells reported within a mile of this proposed well. 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 top of the Chinle formation is estimated to be at a depth of 2000'. The existing surface casing has been set at a depth of 3024. The surface casing has previously been cemented to surface as a measure to isolate and protect all shallow water aquifers.</p> <p>There are no other oil and gas wells within 1500' of this proposed well (see attached SELECTED ITEMS REPORT)</p> <p>The distance to the nearest wellbore operated by another company was reported to be at least 5280' and the corrected distance of 4392' is more accurate (Southland Royalty Dolores Fed 31-1 API 033-06015 SESE 31 41N 17W).</p>	5/26/2016 3:37:51 PM
Permit	Corrected distance to nearest unit boundary, per operator.	5/16/2016 1:20:28 PM
Permit	Passed completeness.	5/13/2016 2:31:52 PM
Permit	Corrected location number and contact email per operator request.	5/13/2016 2:29:53 PM
Permit	<p>Returned to draft:</p> <ul style="list-style-type: none"> -- Missing Surety bond ID # -- Missing BHL footage -- Total measured depth discrepancy between Drilling tab, Casing tab, Dir Data and Deviated Drill Plan -- Dir Data has wrong well name -- Deviated Drill Plan has wrong sidetrack # 	5/2/2016 9:25:41 AM

Total: 12 comment(s)