

FORM
2

Rev
12/20

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:

402957322

(SUBMITTED)

Date Received:

03/03/2022

APPLICATION FOR PERMIT TO:

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

Amend ☒

TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER: _____

Refill ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Well Name: Kortum LD Well Number: 08-041HN
Name of Operator: GREAT WESTERN OPERATING COMPANY LLC COGCC Operator Number: 10110
Address: 1001 17TH STREET #2000
City: DENVER State: CO Zip: 80202
Contact Name: Erin Ekblad Phone: (720)595-2255 Fax: ()
Email: eekblad@gwp.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20160041

WELL LOCATION INFORMATION

Surface Location

QtrQtr: NWNE Sec: 21 Twp: 1S Rng: 67W Meridian: 6
Footage at Surface: 315 Feet FNL/FSL 2099 Feet FEL/FWL
Latitude: 39.956741 Longitude: -104.891808
GPS Data: GPS Quality Value: 1.6 Type of GPS Quality Value: PDOP Date of Measurement: 11/23/2021
Ground Elevation: 5191
Field Name: WATTENBERG Field Number: 90750

Well Plan: is ☐ Directional ☒ Horizontal (highly deviated) ☐ Vertical

If Well plan is Directional or Horizontal attach Deviated Drilling Plan and Directional Data.

Subsurface Locations

Top of Productive Zone (TPZ)

Sec: 17 Twp: 1S Rng: 67W Footage at TPZ: 600 FSL 75 FEL
Measured Depth of TPZ: 9239 True Vertical Depth of TPZ: 7823 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 8 Twp: 1S Rng: 67W Footage at BPZ: 600 FNL 75 FEL
Measured Depth of BPZ: 18539 True Vertical Depth of BPZ: 7823 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 8 Twp: 1S Rng: 67W Footage at BHL: 500 FNL 75 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: ADAMS

Municipality: N/A

Is the Surface Location of this Well in an area designated as one of State interest and subject to the requirements of § 24-65.1-108 C.R.S.? Yes

Per § 34-60-106(1)(f)(I)(A) C.R.S., the following questions pertain to the Relevant Local Government approval of the siting of the proposed Oil and Gas Location.

SB 19-181 provides that when "applying for a permit to drill," operators must include proof that they sought a local government siting permit and the disposition of that permit application, or that the local government does not have siting regulations. § 34-60-106(1)(f)(I)(A) C.R.S.

Does the Relevant Local Government regulate the siting of Oil and Gas Locations, with respect to this Location? ☒ Yes ☐ No

☒ If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The disposition of the application filed with the Relevant Local Government is: Approved Date of Final Disposition: 04/24/2019

Comments: USR2018-00009 was filed on 12/5/2018 and approved on 4/24/2019.

SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

Surface Owner of the land at this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ Indian

Mineral Owner beneath this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ Indian

Surface Owner Protection Financial Assurance (if applicable): _____ Surety ID Number (if applicable): _____

MINERALS DEVELOPED BY WELL

The ownership of all the minerals that will be developed by this Well is (check all that apply):

- ☒ Fee
☐ State
☐ Federal
☐ Indian
☐ N/A

LEASE INFORMATION

Using standard QtrQtr, Section, Township, Range format describe one entire mineral lease as follows:

* If this Well is within a unit, describe a lease that will be developed by the Well.

* If this Well is not subject to a unit, describe the lease that will be produced by the Well.

(Attach a Lease Map or Lease Description or Lease if necessary.)

Lease Map Attached

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

Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 1048 Feet
Building Unit: 1048 Feet
Public Road: 512 Feet
Above Ground Utility: 3327 Feet

INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- 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 – as defined in 100 Series Rules.

Railroad: 5280 Feet
Property Line: 315 Feet

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	407-3292	640	Section 8: E½E½ Section 9: W½W½ Section 16: W½W½ Section 17: E½E½

Federal or State Unit Name (if appl):

Unit Number:

SUBSURFACE MINERAL SETBACKS

Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? Yes

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: 600 Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: 215 Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: Feet

Exception Location

☐ If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers.

SPACING & FORMATIONS COMMENTS

DRILLING PROGRAM

Proposed Total Measured Depth: 18639 Feet

TVD at Proposed Total Measured Depth 7823 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: 400 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? No If yes, attach an H₂S Drilling Plan unless a plan was already submitted with the Form 2A per Rule 304.c.(10).

Will there be hydraulic fracture treatment at a depth less than 2,000 feet in this well? No

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? Yes

BOP Equipment Type: ☒ Annular Preventor ☒ Double Ram ☒ Rotating Head ☐ None

Beneficial reuse or land application plan submitted?

Reuse Facility ID: or Document Number:

CASING PROGRAM

<u>Casing Type</u>	<u>Size of Hole</u>	<u>Size of Casing</u>	<u>Grade</u>	<u>Wt/Ft</u>	<u>Csg/Liner Top</u>	<u>Setting Depth</u>	<u>Sacks Cmt</u>	<u>Cmt Btm</u>	<u>Cmt Top</u>
SURF	13+1/2	9+5/8	J-55	36	0	2020	852	2020	0
1ST	8+1/2	5+1/2	HCP-11	20	0	18639	2677	18639	2500

☒ Conductor Casing is NOT planned

POTENTIAL FLOW AND CONFINING FORMATIONS

<u>Zone Type</u>	<u>Formation /Hazard</u>	<u>Top M.D.</u>	<u>Top T.V.D.</u>	<u>Bottom M.D.</u>	<u>Bottom T.V.D.</u>	<u>TDS (mg/L)</u>	<u>Data Source</u>	<u>Comment</u>
Groundwater	Fox Hills	901	901	1115	1115	501-1000	USGS	WSP 2303
Confining Layer	Pierre Fm	1115	1115	1267	1267			
Groundwater	Upper Pierre Aquifer	1267	1267	2330	2330	501-1000	Groundwater Sample	COGCC Report, Paper 2141
Confining Layer	Pierre Fm	2330	2330	4728	4538			
Hydrocarbon	Parkman	4728	4538	4876	4654			
Subsurface Hazard	Pierre Fm	4876	4654	5287	4977			
Hydrocarbon	Sussex	5287	4977	5609	5229			
Confining Layer	Pierre Fm	5609	5229	6895	6239			
Hydrocarbon	Shannon	6895	6239	7085	6388			
Confining Layer	Pierre Fm	7085	6388	8403	7422			
Confining Layer	Sharon Springs	8403	7422	8608	7576			
Hydrocarbon	Niobrara	8608	7576	18639	7823			The TVD of the deepest hydrocarbon zone is the bottom of the well and not the bottom of the formation. The formation is not planned to be exited.

OPERATOR COMMENTS AND SUBMITTAL

Comments	<p>Great Western is requesting that Kortum 09-0379HN (05.001.10479) change to the Kortum 08-041HN and that spud/surfacing has been set on this well.</p> <p>Nearest proposed well in the same formation is the Kortum LD 09-379HC, API# 05-001-10474. Distance was measured in 2D.</p> <p>Nearest non-operated well is the McElwain 44-17A, API# 05-001-09467. PA Status, operated by KP Kauffman Operating Company. Distance was measured in 2D.</p> <p>Great Western ran an open hole composite log on the Kortum LD 33-179HC (05-001- 09884), which satisfies Rule 408.r.</p> <p>We have submitted a sundry for the updated Directional Well Plat (doc # 402936538).</p> <p>The Directional Well Plat has the 08-041HN well listed as 041HNB to show it is a boundary well.</p> <p>The Mineral Lease Map legend and description says "Ocho" because this well is being drilled from our Ocho East Unit.</p> <p>This well has a bottom hole location beyond the unit boundary setback. The bottom of the completed interval will be within the unit boundary setback at 500 FNL and 75 FEL of Section 8. The wellbore beyond the unit boundary setback will be physically isolated and will not be completed.</p>
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This application is in a Comprehensive Area Plan No CAP #: _____

Oil and Gas Development Plan Name _____ OGDID #: _____

Location ID: 443415

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

Signed: _____

Print Name: Erin Eklad

Title: Manager Regulatory Affair

Date: 3/3/2022

Email: regulatorypermitting@gwp.com

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved: _____

Director of COGCC

Date: _____

Expiration Date: _____

API NUMBER

05 001 10479 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

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Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	Bradenhead Monitoring Great Western will comply with Rule 419 and Order 1-232 for all Bradenhead compliance, as applicable.
2	Drilling/Completion Operations	Drill Stem Test – Rule 603.g Conventional drill stem tests will not be conducted on DJ Basin horizontal wells currently being executed or planned by Great Western. If plans change in the future a well specific drill stem testing plan will be prepared for that particular well. Note that Great Western may elect to use one of several available wireline deployed tools for the purpose of measuring down hole formation pressures and/or collecting down hole fluid samples from the target formation(s) of a particular well.
3	Drilling/Completion Operations	Wellbore Collision Prevention – Rule 408.t Prior to drilling operations, Great Western will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument and compared against the proposed well path with its respective error of uncertainty. If current surveys do not exist for the offset well – Rule 408.rells, Operator may have gyro surveys conducted to verify bottom hole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment. Operator will perform anti-collision evaluation of all active (Producing, Shut In, or Temporarily Abandoned) offset wellbores that have the potential of being within 150' of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.
4	Drilling/Completion Operations	Multi Well Open-Hole Logging – Rule 408.r Alternative Logging Program: An existing well on the pad was logged with an open-hole resistivity log with gamma-ray log from the kick-off point 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 and have those logs attached. The Form 5 for a well without open-hole logs shall state "Alternative Logging Program - No open-hole logs were run" and shall clearly identify the type of log and the well (by API#) in which open-hole logs were run.

Total: 4 comment(s)

Attachment List

Att Doc Num	Name
402966541	OffsetWellEvaluations Data
402966570	DIRECTIONAL DATA
402966571	MINERAL LEASE MAP
402966572	DEVIATED DRILLING PLAN
402971630	WELL LOCATION PLAT

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
Permit	Returned to Draft: •Attached Well Location Plat does not depict the correct surface, TPZ, or BHL. •Well Location tab needs the correct surface location information. •Safety Setbacks need to be updated to reflect the new surface location.	03/01/2022

Total: 1 comment(s)

Public Comments

No public comments were received on this application during the comment period.

