

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

TYPE OF WELL OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> COALBED <input type="checkbox"/> OTHER _____ ZONE TYPE SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONES <input type="checkbox"/> COMMINGLE ZONES <input type="checkbox"/>	Refiling <input type="checkbox"/> Sidetrack <input type="checkbox"/>
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Date Received:
08/25/2017

Well Name: File Well Number: 3A-32H-K268

Name of Operator: CRESTONE PEAK RESOURCES OPERATING LLC COGCC Operator Number: 10633

Address: 1801 CALIFORNIA STREET #2500

City: DENVER State: CO Zip: 80202

Contact Name: Ryan Bruner Phone: (720)410-8478 Fax: ()

Email: ryan.bruner@crestonepr.com

RECLAMATION FINANCIAL ASSURANCE
Plugging and Abandonment Bond Surety ID: 20160104

WELL LOCATION INFORMATION

QtrQtr: NESW Sec: 32 Twp: 2N Rng: 68W Meridian: 6

Latitude: 40.092576 Longitude: -105.031218

Footage at Surface: <u>1760</u> Feet	FNL/FSL	FEL/FWL
<u>FSL</u> <u>1592</u> Feet	<u>FSL</u>	<u>FWL</u>

Field Name: WATTENBERG Field Number: 90750

Ground Elevation: 4970 County: WELD

GPS Data:
Date of Measurement: 05/14/2015 PDOP Reading: 1.6 Instrument Operator's Name: Jason Dahlman

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

Footage at Top of Prod Zone: <u>1550</u> Feet	FNL/FSL	FEL/FWL	Bottom Hole: <u>460</u> Feet	FNL/FSL	FEL/FWL
<u>FSL</u> <u>22</u> Feet	<u>FSL</u>	<u>FWL</u>	<u>FSL</u> <u>80</u> Feet	<u>FSL</u>	<u>FWL</u>

Sec: 32 Twp: 2N Rng: 68W Sec: 5 Twp: 1N Rng: 68W

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.)

T2N R68W Sec. 32: SW/4, W/2NW/4 lying S & E of RR Row and other lands

Total Acres in Described Lease: 256 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: 0 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 460 Feet
 Building Unit: 489 Feet
 High Occupancy Building Unit: 5280 Feet
 Designated Outside Activity Area: 5280 Feet
 Public Road: 270 Feet
 Above Ground Utility: 249 Feet
 Railroad: 5280 Feet
 Property Line: 255 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: 07/25/2017

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: 106 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 460 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): _____ Unit Number: _____

SPACING & FORMATIONS COMMENTS

Proposed Spacing Unit: T1N R68W Sec. 5: W2W2; Sec. 6: E2E2; T2N R68W Sec. 32: W2SW; Sec. 31: E2SE

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
CODELL	CODL		480	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 14653 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: 152 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 Operations Plan)

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

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

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:

Drilling fluids and cuttings disposal will be properly disposed of at a licensed commercial 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	22	16	30	0	80	80	80	0
SURF	13+1/2	9+5/8	40	0	1900	815	1900	0
1ST	8+1/2	5+1/2	20	0	14653	2083	14653	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 -Original Surface Use Agreement was signed December 20, 2007.
-A valid form 2A exists (COGCC Location ID #434248) for the oil and gas location.
-The nearest well completed in the same formation is the File FED 3I-32H-K268 at 106'.
-The nearest well belonging to another operator is the Bulthaup 40-6 (API#05-123-26891) operated by Kerr McGee Oil and Gas Onshore, LP., approximately 152' away, as calculated by the attached anti-collision report.

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: Ryan Bruner

Title: Regulatory Analyst Date: 8/25/2017 Email: ryan.bruner@crestonepr.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: *Matthew Lee* Director of COGCC Date: 11/7/2017

Expiration Date: 11/06/2019

API NUMBER
05 123 45830 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>
	Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.
	<p>1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 48 hour spud notice via Form 42 for all subsequent wells drilled on the pad.</p> <p>2) Comply with Rule 317.j. and provide cement coverage from TD to a minimum of 200' above Niobrara and from 200' below Shannon to 200' above Sussex. Verify coverage with cement bond log.</p>
	<p>Bradenhead tests shall be performed according to the following schedule and the Form 17 submitted within 10 days of each test:</p> <p>1) Within 60 days of rig release and prior to stimulation and</p> <p>2) If a delayed completion, 6 months after rig release and prior to stimulation.</p> <p>3) Within 30 days after first production, as reported on Form 5A.</p>
	<p>Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating that appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of any wells on this pad.</p> <p>BROWN C UNIT 1 (API 05-123-11011) RAY NELSON 12-32 (API 05-123-21281) FOSTER 4-6-5 (API 05-123-31206)</p> <p>Operator acknowledges the proximity of the listed non-operated wells. Operator assures that this offset list will be remediated per the DJ Basin Horizontal Offset Policy (option 4). Operator will submit a Form 42 ("OTHER – AS SPECIFIED BY PERMIT CONDITION") stating that appropriate mitigation will be completed, during the hydraulic stimulation of this well. This Form 42 shall be filed 48 hours prior to stimulation. Prior to commencing hydraulic fracturing operations on this pad, Bradenhead tests shall be performed and Form 17's submitted within 10 days, on the following offset well. Additionally the bradenheads of these offset wells shall be actively monitored for increased pressure during all fracs on this pad. Stimulation operations shall cease if at any time there is communication with any of these wells.</p> <p>TALLGRASS 4-8 (API 05-123-25868) TALLGRASS 2-8 (API 05-123-25872) BULTHAUP 8-6 (API 05-123-26879) BULTHAUP 17-6 (API 05-123-26880) BULTHAUP 27-6 (API 05-123-26882) BULTHAUP 39-6 (API 05-123-26884) BULTHAUP 24-6 (API 05-123-26890) BULTHAUP 40-6 (API 05-123-26891)</p>
	This Permit to Drill is approved subject to all the BMPs and COAs on the most recently approved Form 2A and any subsequently approved Form 4 for the Oil and Gas Location. The most recently approved Form 2A and any subsequent Form 4s containing applicable COAs for this location shall be posted onsite during construction, drilling, and completions operations.

Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	Upon initial rig-up and at least once every thirty (30) days during drilling operations thereafter, pressure testing of the casing string and each component of the blowout prevention equipment including flange connections will be performed to seventy percent (70%) of working pressure or seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing shall be conducted and the documented results will be retained by the operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted on a daily basis when practicable.
2	Drilling/Completion Operations	Adequate blowout prevention equipment will be used on all well servicing operations.
3	Drilling/Completion Operations	Backup stabbing valves shall be required on well servicing operations during reverse circulation. Valves shall be pressure tested before each well servicing operation using both low-pressure air and high-pressure fluid.
4	Drilling/Completion Operations	No drill stem tests will be performed.
5	Drilling/Completion Operations	Prior to drilling operations, Crestone 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 wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, the Operator may have gyro surveys conducted to verify bottomhole 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. For the proposed well, upon conclusion of drilling operations, an as-constructed gyro survey will be submitted to COGCC with the Form 5.
6	Drilling/Completion Operations	Crestone will comply with the "COGCC Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area", dated May 29, 2012.
7	Drilling/Completion Operations	"Rule 317.p Logging Program One of the first wells drilled on the pad will be logged with Cased hole Pulsed Neutron Log with Gamma Ray Log from the kick-off point to 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."

Total: 7 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
Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area. http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf

Attachment Check List

Att Doc Num	Name
401352054	FORM 2 SUBMITTED
401353510	WELL LOCATION PLAT
401371968	STIMULATION SETBACK CONSENT
401372109	SURFACE AGRMT/SURETY
401372110	EXCEPTION LOC WAIVERS

401392618	OPEN HOLE LOGGING EXCEPTION
401395300	DEVIATED DRILLING PLAN
401395302	OTHER
401395402	PROPOSED SPACING UNIT
401395784	OffsetWellEvaluations Data
401397306	EXCEPTION LOC REQUEST
401397833	DIRECTIONAL DATA
401452559	OFFSET WELL EVALUATION

Total Attach: 13 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	With operators concurrence changed Right to construct to Oil & gas lease and checked "has signed a lease". Final Review Completed.	11/07/2017
Permit	With operator's concurrence corrected the to Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation. An amended form 2A (doc #401352756) has been submitted. Permitting Review Complete.	10/02/2017
Permit	Operator requested Exception to Open Hole Logging Rule 317.p. See attached. ON HOLD: Requesting correction to Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation.	09/25/2017
Permit	Passed Completeness.	09/07/2017
Permit	Returned to draft for: - the proposed measured depth listed on the Directional Data does not match the measured depth listed on the "Drilling & Waste Plans" tab, the "Casing" tab, and in the attachment "DEVIATED DRILLING PLAN"	09/07/2017
Permit	Returned to draft for: - "Well Location" tab: PDOP reading listed does not match PLAT - missing attachment "EXCEPTION LOC REQUEST" - the proposed measured depth listed on the "Drilling & Waste Plans" tab and the "Casing" tab and in the Directional Data do not match the measured depth listed in the attachment "DEVIATED DRILLING PLAN" - well name/number not listed in attachment "CORRESPONDENCE"	09/07/2017
Permit	Returned to draft for: - "Well Location" tab: bottom hole location direction of "FEL" does not match PLAT - "Cultural Setbacks" tab: the check box for "Buffer Zone" should also be checked - "Offset Wells Evaluation" tab: there is an "OffsetWellEvaluations Data" attachment, but it is not uploaded to the Offset Evaluations tab - "Operator BMP/COA" tab: missing Rule 317.p. BMP - "Exceptions" tab: since the box for "Rule 604.b.(2)" is already checked, then it is not necessary for "Rule 604.a.(1)A.", since that is covered already by the box for "Rule 604.b.(2)" - attachment "PROPOSED DRILLING PLAN" is missing the letter to the director - attachment "DEVIATED DRILLING PLAN" does not require 100+ page anti-collision report	09/01/2017
Permit	Returned to draft for: - attachment "OPEN HOLE LOGGING EXCEPTION": the well listed in the letter is usable, however, the number listed as the document number is the API number for the well, not the document number for a log. Please replace with the proper document number for the log.	08/31/2017

Total: 8 comment(s)