

FORM
2

Rev
08/16

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:

401096518

APPLICATION FOR PERMIT TO:

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

TYPE OF WELL OIL ☐ GAS ☐ COALBED ☐ OTHER Class II Injector

Refilling ☐

ZONE TYPE SINGLE ZONE ☐ MULTIPLE ZONES ☒ COMMINGLE ZONES ☒

Sidetrack ☐

Date Received:

09/20/2016

Well Name: EWS

Well Number: 3A

Name of Operator: EXPEDITION WATER SOLUTIONS COLORADO LLC

COGCC Operator Number: 10580

Address: 1023 39TH AVENUE SUITE E

City: GREELEY

State: CO

Zip: 80634

Contact Name: Jeremiah Demuth

Phone: (303)290-9414

Fax: ()

Email: jdemuth@petrotek.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20150089

WELL LOCATION INFORMATION

QtrQtr: SWNW Sec: 23 Twp: 4N Rng: 66W Meridian: 6

Latitude: 40.297710

Longitude: -104.750230

Footage at Surface: 2528 Feet FNL/FSL FNL 1045 Feet FEL/FWL FWL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 4726

County: WELD

GPS Data:

Date of Measurement: 08/25/2016 PDOP Reading: 1.3 Instrument Operator's Name: Dane Courville

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

Footage at Top of Prod Zone: FNL/FSL FNL/FWL Bottom Hole: FNL/FSL FNL/FWL
1540 FNL 1228 FEL 2556 FNL 512 FEL
Sec: 26 Twp: 4N Rng: 66W Sec: 26 Twp: 4N Rng: 66W

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: No

The right to construct the Oil and Gas Location is granted by: applicant is owner

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.)

No minerals will be produced from this well.

Total Acres in Described Lease: _____ 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: _____ Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 251 Feet

Building Unit: 724 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 810 Feet

Above Ground Utility: 1021 Feet

Railroad: 1659 Feet

Property Line: 157 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: 09/19/2016

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: 5280 Feet

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

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

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.)
ADMIRE	ADMI			
AMAZON	AMZN			
COUNCIL GROVE	COUGR			
DENVER BASIN COMBINED DISPOSAL ZONE	DJINJ			
FOUNTAIN	FNTN			
LOWER SATANKA	LSTKA			
LYONS	LYNS			
MISSOURI	MSSR			
VIRGIL	VRGL			
WOLFCAMP	WFCMP			

DRILLING PROGRAM

Proposed Total Measured Depth: 12786 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: 401 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? 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 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:

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
SURF	12+1/4	9+5/8	36	0	1000	477	1000	0
1ST	8+3/4	7	26	0	11024	573	11024	6829
1ST LINER	6+1/4	4+1/2	11.6	10975	12786			
		7	Stage Tool		6829	911	6829	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

The nearest wellbore completed in the same formation is the EWS 3 (05-123-37120). The 5,280 foot distance from the completed zone of the EWS 3 well to the top of the completed zone in the EWS 3A well was calculated using GPS coordinates based on the azimuth and total horizontal departure found in the directional drilling plan.

The nearest well not owned by Expedition Water Solutions is the HSR-Schmidt 2-26 (05-123-17913) operated by Noble Energy. This well was calculated to have a horizontal distance of 107 feet from the wellbore, but, as calculated in the directional drilling plan, the EWS 3A wellbore will be 401 feet deeper than the HSR-Schmidt 2-26 at the closest point.

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

Location ID: 436533

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: Jeremiah Demuth

Title: Engineering Technician Date: 9/20/2016 Email: jdemuth@petrotek.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:  _____ Director of COGCC Date: 11/23/2016

Expiration Date: 11/22/2018

API NUMBER

05 123 43880 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>
	Bradenhead tests shall be performed and reported according to the following schedule and Form 17 submitted within 10 days of each test: 1) Within 60 days of rig release and prior to stimulation or 2) If a delayed completion, 6-7 months after rig release and prior to stimulation. 3) Within 30 days after first production, as reported on Form 5A.
	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (Spud Notice), for the first well/activity on the pad and provide 48 hour spud notice for all subsequent wells drilled on the pad. 2) Comply with Rule 317.j and provide cement coverage from the end of production casing to a minimum of 200' above Niobrara. Verify coverage with cement bond log.
	1. Injection is not authorized until approval of Subsequent Forms 31 and 33. 2. Prior to performing operations, Operator is required to contact COGCC to discuss Step Rate Test or Injectivity Test criteria for Maximum Surface Injection Pressure determination. Prior approval of Form 4 is required for step rate and injectivity tests. 3. Prior to performing operations approval of Form 4 is required for acid and fracturing jobs. (New as of 4/13/2016). 4. Retrieve water sample(s) from injection zone(s) before stimulating formation. Samples must be analyzed for Total Dissolved Solids at a minimum. 5. For ALL NEW DRILL UNDERGROUND INJECTION WELLS a suite of open-hole Resistivity/Gamma Ray and Density/Neutron logs IS REQUIRED from Surface Casing shoe to TD. A PDF, TIFF, or PDS visual image and a LAS or DILS file version of each log is required. 6. For all new and converted Underground Injection Control wells a Cement Bond Log (CBL) is required on the cased portions of the hole from the bottom of the casing to the top of the next shallower casing string for all casing strings other than the Surface Casing. Only a PDF, TIFF, or PDS visual image is required. 7. Operator must provide all tops of formations encountered from surface to TD on the Form 5 when submitted. 8. Top of primary cement on 7" casing must be 200' above Niobrara and stage cement must be at least 50' above surface casing shoe. Verify with CBL. 9. Also submit cement job summary on all casing strings. 10. Provide 48 hour notice prior to spud via electronic Form 42.

Best Management Practices

No	BMP/COA Type	Description
1	Planning	The EWS 3A well is located on the EWS 3 location in a manner which allows for drilling while maximizing its distance from nearby building units and maintaining COGCC mandated setbacks from property lines.
2	Traffic control	Traffic will be handled through the already existing access to the EWS 3 facility.
3	General Housekeeping	Removal of surface trash. All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as is applicable.
4	Material Handling and Spill Prevention	Load-lines. All load-lines shall be bull-plugged or capped.
5	Dust control	In order to minimize nuisance dust traffic will be confined, to the extent possible, to already existing roads on the EWS 3 location during the drilling of the EWS 3A well.
6	Noise mitigation	It is not anticipated that noise mitigation will be necessary for the drilling and completion of EWS 3A. During drilling and completion operations periodic noise monitoring will be conducted and documented using in-house equipment to ensure compliance with COGCC Series 802 rules. Light pollution will be mitigated by requiring all lights associated with the drilling and completion of the EWS 3A well to face inward to the greatest extent possible. At the discretion of Expedition Water Solutions other noise and light mitigation measures may be enacted.
7	Noise mitigation	The EWS 3A drilling and completion operations will be subject to the permissible noise levels for Light Industrial Zones pursuant to Rule 604.c.(2)A.
8	Drilling/Completion Operations	Green Completions - The EWS 3A is an injection well that will penetrate several production zones, but will place them behind cement. No production of hydrocarbons is planned or anticipated for this well.
9	Drilling/Completion Operations	Blowout preventer equipment ("BOPE"). A double ram and annular preventer will be used during drilling. At least the drilling company shall have a valid well blowout prevention certifications.
10	Drilling/Completion Operations	BOPE for well servicing operations. Adequate BOP equipment shall be used. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.
11	Drilling/Completion Operations	Drill stem tests. Not applicable; no Drill Stem tests are planned.
12	Drilling/Completion Operations	Rule 317.p Open Hole Logging Requirement: Open-hole Resistivity Log with Gamma Ray Log will be run from TD into the surface casing. A Cement Bond Log with Gamma Ray will be run on production casing, or on intermediate casing if a production liner is run. The Form 5, Completion Report, will list all logs run and have those logs attached.
13	Drilling/Completion Operations	Control of fire hazards. All materials which are considered fire hazards shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API RP 500 and will comply with the current national electrical code. An emergency response plan will be generated for this site.
14	Drilling/Completion Operations	Guy line anchors. All guy line anchors shall be brightly marked pursuant to Rule 604.c (2)Q.
15	Final Reclamation	Well site cleared. Within 90-day subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site.
16	Final Reclamation	Identification of plugged and abandoned wells. P&A'd wells shall be identified pursuant to 319.a.(5).

Total: 16 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

Att Doc Num	Name
1696736	DEVIATED DRILLING PLAN
401096518	FORM 2 SUBMITTED
401102739	DIRECTIONAL DATA
401104650	WELL LOCATION PLAT
401106963	WELLBORE DIAGRAM
401115353	WAIVERS
401115483	EXCEPTION LOC REQUEST
401151248	DIRECTIONAL DATA

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed. Rule 502.b variance request box was checked for Rule 604.a.(1)B - the attached exception request letter refers to waivers and is not a variance request. Rule 305 notification and Rule 306 meeting requirements can be waived by Building Unit owners in the Buffer Zone and variance is not necessary. Unchecked the Rule 502.b variance request box.	11/21/2016
Permit	Operator provided an updated Deviated Drilling plan and Directional Data. uploaded 11/16/16.	11/16/2016
Permit	Permitting Review Complete.	11/03/2016
Engineer	Revised Casing tab to agree with WBD, sent operator email with revisions, operator emailed with agreement of the revisions.	10/06/2016
Engineer	Offset Wells Evaluated	10/06/2016
UIC	Added Form 31 and 33 document numbers to Related Forms tab.	10/04/2016
Permit	Passed completeness.	09/30/2016
Permit	With Operator consent: -- rounded ground elevation to nearest whole number -- revised Rule 317.p open-hole logging BMP -- added Form 2A doc number to Related Forms tab	09/30/2016
Permit	Returned to draft per operator request.	09/21/2016

Total: 9 comment(s)