FORM 31
Rev 04/15

State of Colorado
Oil and Gas Conservation Commission

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

FOR OGCC USE ONLY
Document Number: 401624692
Date Received: 05/07/2018

UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

Per Rule 325, this form shall be submitted with all required attachments.
A Form 31 – Intent shall be submitted and approved prior to completing an injection zone.
A Form 31 – Subsequent shall be submitted following collection of water samples and injectivity test (if performed) and must be approved prior to injection in any new injection facility.
NOTE: Per Rule 324B, an aquifer exemption is required for any injection formation with water quality less than 10,000 mg/L total dissolved solids (TDS). Contact the Commission for further requirements if the TDS as determined by water analysis for the injection zone is less than 10,000 mg/L.

Form 31 Type: [X] Intent [ ] Subsequent UIC Facility ID: 160016 UIC Facility ID Required for Subsequent Form 31

UIC FACILITY INFORMATION

Facility Name and Number: Cascade Creek 604-12-13 SWD County: GARFIELD
Facility Location: Lot 16 / 4 / 6S / 97W / 6 Field Name and Number: GRAND VALLEY 31290
Facility Type: [ ] Enhanced Recovery [X] Disposal [ ] Simultaneous Disposal
Single or Multiple Well Facility? [X] Single [ ] Multiple

Proposed Injection Program (Required):

PROCEDURE:Abandon Williams Fork and Cameo Perforations1. Set BP @ 7100. 2. Place 50 linear feet Class G cement on CIBP.3. Pressure test and chart 5-1/2" casing to 1500 psi for 15 minutes to verify well integrity.Cement Squeeze to Isolate Ohio Creek from Fort Union4. Perforate 4 x 1/2" holes @ 6180. 5. Set drillable cement retainer @ 6150 +/-.6. Squeeze 1.0 or more bbls class G cement through perforations.7. Drill out retainer and cement.8. Run CBL to verify cement.Prepare Well for Ohio Creek and Upper Williams Fork Injection Testing9. Perforate the following intervals:a. 6700-6702 – Williams Forkb. 6548-6550 – Ohio Creekc. 6494-6496 – Ohio Creekd. 6408-6410 – Ohio Creeke. 6344-6346 – Ohio Creekf. 6288-6290 – Ohio Creek10. Set packer @ 6250 +/- with memory pressure gauge in tubing tail.11. Pressure test and chart 5-1/2" casing to 1500 psi for 15 minutes to verify well integrity.Collect Proposed Injection Zone Water Samples for Analysis12. Swab well to collect 3 x 1 gallon samples of Ohio Creek formation water. (Recover 2 x the volume to the top perforation before collecting samples. Volume to top perforation = 25 bbls, so recover 50 bbls.)13. Send water samples to lab for analysis.Pump Step Rate Test14. Install memory pressure gauges on tubing and casing.15. Pump Step Rate Test as follows:Step Number Step Time Duration (minutes) Step Time Duration (hours) Time Cumulative (minutes) Time Cumulative (hours) Pump Rate (BPM) Step Volume (BBLS) Volume Cumulative (BBLS)1 60 1 60 1 0.00 0 02 60 1 120 2 0.40 24 243 60 1 180 3 0.70 42 664 60 1 240 4 1.00 60 1265 60 1 300 5 1.33 80 2066 60 1 360 6 1.67 100 3067 60 1 420 7 2.00 120 4268 60 1 480 8 2.50 150 5769 60 1 540 9 3.00 180 75610 60 1 600 10 4.00 240 99611 60 1 660 11 5.00 300 129612 60 1 720 12 6.00 360 165613 60 1 780 13 7.00 420 207614 1440 24 2220 37 0.00 0 2076TOTAL 2220 37 2220 37 2076After pumping, shut in well upstream of the tubing pressure gauge. Continue collecting data for at least 1 full day even if surface tubing gauge indicates no pressure.16. Recover all pressure gauges and send to Engineering.

OPERATOR INFORMATION

OGCC Operator Number: 10433
Name of Operator: LARAMIE ENERGY LLC
Address: 1401 SEVENTEENTH STREET #1400
City: DENVER State: CO Zip: 80202

Contact Name and Telephone:
Name: Dan Fouts
Phone: (970) 263-3625 Fax: ( )
Email: dfouts@laramie-energy.com

INJECTED FLUID TYPE

All injected fluids must be Exempt E&P waste per RCRA Subpart C.

(Check all that apply.)

[X] Produced Water [ ] Natural Gas [ ] CO2 [X] Drilling Fluids
[ ] Exempt Gas Plant Waste [X] Used Workover Fluids [X] Flowback Fluids
[ ] Other Fluids (describe):

Commercial Disposal Facility ☐ Yes ☒ No Commercial UIC Bond Surety ID:

Commercial Facility Description: Describe the physical region of the facility, the details of the operations, and the type of fluids to be injected.

PROPOSED INJECTION FORMATIONS

FORMATION (Name): OHIO CREEK Porosity: 12 %

Formation TDS: 17605 mg/L Frac Gradient: 0.65 psi/ft Permeability: 100 mD

Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

FORMATION (Name): WILLIAMS FORK Porosity: 11 %

Formation TDS: 17605 mg/L Frac Gradient: 0.65 psi/ft Permeability: 100 mD

Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

ANTICIPATED FACILITY OPERATIONS CONDITIONS

Under normal operating conditions, estimated TOTAL fluid injection rates and pressures for this facility:

FOR WATER:	Daily Injection Rate Range From	0	to	14400	bbls/day
	Surface Injection Pressure Range From	0	to	2500	psi
FOR GAS:	Daily Injection Rate Range From	0	to	0	mcf/day
	Surface Injection Pressue Range From	0	to	0	psi

Estimated Initial Injection Date: 8/1/2018

AREA OF REVIEW OIL and GAS WELL EVALUATION SUMMARY

Review all existing wells within 1/2 mile for injection formation isolation.

Area Review Date: 5/1/2018

Total number of Oil & Gas Wells within Area of Review: 32

ABANDONED WELLS (All wells that have been plugged: PA and DA status))

Total within Area of Review	0
Number To Be Re-Plugged	0

ACTIVE WELLS (All wells that have not been plugged: AC, DG, DM, IJ, PR, SU, SI, TA, WO, XX, UN status)

Total within Area of Review	32
Number Requiring Casing Repair	0
Number To Be Plugged	0

Operator's Area of Review Contact Email: jproulx@laramie-energy.com

☐ No Wells within 2,640'

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

Print Name: Joan Proulx Signed:

Title: Regulatory Analyst Date: 5/7/2018 10:29:28 AM

COGCC Approved: Date: 07/02/2018

Form 31 - Intent Expiration Date: 01/02/2019

Per Rule 325.o, a 90 day extension of the Expiration Date may be requested via a Sundry Notice, Form 4 submitted prior to Form 31- Intent expiration

Order Number: **UIC FACILITY ID:** 160016

CONDITIONS OF APPROVAL, IF ANY:

COA Type	Description
	Signed and dated receipt letter of the sundry notice to BLM notifying them of the conversion of the Cascade Creek 604 -12-13 to an injector to be provided via Subsequent Form 31 submittals.
	1.Injection is not authorized until approval of Subsequent Forms 31 and 33. 2.If retrieving water sample(s) from injection zone(s) for analysis do so before stimulating formation. Samples must be analyzed for Total Dissolved Solids at a minimum. 3.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. 4.PRIOR TO PERFORMING OPERATIONS: Approval of Form 4 is required for acid and fracturing jobs. (New as of 4/13/2016). 5.Operator must provide all tops of formations encountered from surface to TD on the Form 5 when submitted for new wells or Form 4 Sundry Notice for existing well conversions. 6.An MIT with tubing set in final configuration for injection is required for approval of SUBSEQUENT Forms 31 and 33.

Attachment Check List

Att Doc Num	Name
1801263	SURFACE USE AGREEMENT STATEMENT
1801264	REMEDIAL ACTION STATEMENT
1801265	MAP OF O&G IN AREA OF REVIEW 2
401624692	FORM 31-INTENT-SUBMITTED
401625511	WELLBORE DIAGRAM-CURRENT
401625512	WELLBORE DIAGRAM-PROPOSED
401625514	LIST OF MINERAL OWNERS ¼-MILE
401625519	MAP OF MINERAL OWNERS ¼-MILE
401625520	MAP OF SURFACE OWNERS ¼-MILE
401625521	LIST OF WATER WELLS ¼-MILE
401625525	MAP OF WATER WELLS ¼-MILE
401625528	MAP OF O&G WELLS IN AREA OF REVIEW
401625537	OTHER
401625548	OTHER
401628685	OIL & GAS WELL PLAT
401628686	SURFACE FACILITY DIAGRAM
401631463	OFFSET WELL EVALUATION

Total Attach: 17 Files

General Comments

User Group	Comment	Comment Date
Engineer	Maximum Surface Injection Pressure and Maximum Injection Volume to be determined via Subsequent Form 31/33 submittals.	06/28/2018

Total: 1 comment(s)