

State of Colorado Oil and Gas Conservation Commission

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FOR OGCC USE ONLY

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07/10/2018

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 160020 UIC Facility ID Required for Subsequent Form 31

UIC FACILITY INFORMATION

Facility Name and Number: Padroni West Unit County: LOGAN Facility Location: SESW / 6 / 9N / 52W / 6 Field Name and Number: PADRONI WEST 67000 Facility Type: [X] Enhanced Recovery [] Disposal [] Simultaneous Disposal Single or Multiple Well Facility? [] Single [X] Multiple

Proposed Injection Program (Required):

1. MI 165 jts 2 7/8" J55 WS, MIRU SU, MIRU pumps, PU power swivel2. PU 3 7/8" bit, TIH Tag CIBP @ 4,940'3. DO CIBP@ 4,940'4. Tag PBDT @ 5,046'5. Tag PBDT @ 5,046'circ bottoms up, TOH w/ bit & LD bit 6. MIRU WL TIH w/ Perf gun 4spf 90° phase angle perf "O" sand interval from 5006'-5010', TOH RDMOWL7. PU TIH w/ 2 7/8" tbg, 300' tbg, 4.5" Pkr and 4700' tbg8. Set PKR at 4700', EOT estimated at 5,000'9. MIRU acid truck, establish injection rate, release Pkr and spot 1 BBL acid across perf10. Set pkr ~4700', EOT estimated at ~5,000'11. Pump reminding 458 gal 15% NEFE HCL in to O sand.12. Release PKR TOH to 4,835'13. Spot 3 BBL acid from 4,835'-4,740' Set PKR at 4,440'14. Pump reminding 4874 gal 15% NEFE HCL in to J sand.15. Realse PKR TOH w/ PKR LD WS16. PU 2 7/8" injection tbg and 4 1/2" Inj Pkr run in hole with 152 Jts tbg.17. Set pkr at 4,682'18. RDMO SU19. Open valve to injection lines 20. Record Injection rate and pressure 0, 5, 10, 15 minute intervals21. Monitor, record and report rate and pressure to engineer for 30 days.

OPERATOR INFORMATION

OGCC Operator Number: 17180 Contact Name and Telephone: Name: Sharon Ward Address: 14077 CUTTEN RD Phone: (281) 8911556 Fax: (281) 5802168 City: HOUSTON State: TX Zip: 77269 Email: sward@cogc.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 [] Flowback Fluids

[] Other Fluids (describe):

Empty box for describing other fluids.

Commercial Disposal Facility [] Yes [X] 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): J SAND Porosity: 20 %
Formation TDS: _____ mg/L Frac Gradient: _____ psi/ft Permeability: 500 mD
Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): O SAND Porosity: 20 %
Formation TDS: _____ mg/L Frac Gradient: _____ psi/ft Permeability: 500 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 1287 to 1500 bbls/day
Surface Injection Pressure Range From 1287 to 1500 psi
FOR GAS: Daily Injection Rate Range From _____ to _____ mcf/day
Surface Injection Pressue Range From _____ to _____ psi

Estimated Initial Injection Date: 4/10/2018

AREA OF REVIEW OIL and GAS WELL EVALUATION SUMMARY

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

Area Review Date: 3/26/2018

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

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

Total within Area of Review	6
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	9
Number Requiring Casing Repair	0
Number To Be Plugged	0

Operator's Area of Review Contact Email: sward@cogc.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: Sharon Ward Signed: _____

Title: Permitting Manager Date: 7/10/2018 9:09:33 AM

COGCC Approved:  Date: 08/28/2018

Form 31 - Intent Expiration Date: 02/28/2019

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: 7-5 UIC FACILITY ID: 160020

CONDITIONS OF APPROVAL, IF ANY:

<u>COA Type</u>	<u>Description</u>
	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.
	Regulation 42 is not equivalent to an aquifer exemption. EPA requests an unit aquifer exemption for the Padroni West EOR Unit. Operator will need the EPA aquifer exemption approval before UIC subsequent approval.

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1801327	MAP OF O&G WELLS IN AREA OF REVIEW- PADRONI WEST UNIT
1801328	PADRONI WEST UNIT- WATER WELLS
1801332	DICKINSON #2 REMEDIAL STATEMENT
401584429	FORM 31-INTENT-SUBMITTED
401588163	ANALYSIS OF INJECTION ZONE WATER
401588164	UNIT AREA PLAT
401588165	SURFACE FACILITY DIAGRAM
401588166	WELLBORE DIAGRAM-CURRENT
401588167	WELLBORE DIAGRAM-PROPOSED
401589067	AREA OF REVIEW-COGCC EVALUATION

Total Attach: 10 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Engineer	Maximum Surface Injection Pressure and Maximum Injection Volume to be determined via Subsequent Form 31/33 submittals.	08/20/2018
UIC	Returned to DRAFT at operator request. Document update. 2nd time on 5/10/2018.	03/28/2018

Total: 2 comment(s)