

State of Colorado Oil and Gas Conservation Commission

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FOR OGCC USE ONLY Document Number: 2493726 Date Received: 11/18/2014

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 [] Intent [X] Subsequent UIC Facility ID 159962 UIC Facility ID Required for Subsequent Form 31

UIC FACILITY INFORMATION

Facility Name and Number: WILDHORSE 16-13L SWD County: WELD Facility Location: NWSW / 16 / 9N / 59W / 6 Field Name and Number: WILDCAT 99999 Facility Type: [] Enhanced Recovery [X] Disposal [] Simultaneous Disposal Single or Multiple Well Facility? [X] Single [] Multiple

Proposed Injection Program (Required):

INJECTION OF PRODUCED FLUID AND FLOWBACK WATERS INTO THE PROPOSED INJECTION WELL WILL OCCUR AT RATES AND PRESSURES BETWEEN THE MINIMUM AND MAXIMUM RATES & PRESSURES LISTED IN THE APPLICATION. THE FACILITY WILL CONSIST OF UPRIGHT WATER TANKS, A GUN BARREL, OIL TANKS, HORIZONTAL INJECTION PUMPS, FILTRATION, AUTOMATION, TRUCK BAYS AND THE NECESSARY CONTAINMENT. THE MAJORITY OF WATER WILL BE CONVEYED TO THE PROPOSED SWD SITE VIA EXISTING INTRA-FIELD PIPELINES DEDICATED TO PRODUCED WATER, AND WATER WILL ALSO BE BROUGHT TO LOCATION VIA TRUCKING AND LOADED FROM TRUCK BAYS. INJECTION ACTIVITY WILL BE MONITORED THROUGH AUTOMATION EQUIPMENT, WITH 24-HOUR SURVEILLANCE. ALL INJECTED WATER WILL BE WATER FROM WHITING OIL AND GAS OPERATED WELLS IN WELD COUNTY, CO.

OPERATOR INFORMATION

OGCC Operator Number: 96155 Name of Operator: WHITING OIL & GAS CORPORATION Address: 1700 BROADWAY STE 2300 City: DENVER State: CO Zip: 80290 Contact Name and Telephone: Name: CHARLES OHLSON Phone: (303) 3904905 Fax: (303) 3904039 Email: charles.ohlson@whiting.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 [] Drilling Fluids [] Exempt Gas Plant Waste [] Used Workover Fluids [] Flowback Fluids

[] Other Fluids (describe):

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): ENTRADA Porosity: 16 %
Formation TDS: 12310 mg/L Frac Gradient: 0.75 psi/ft Permeability: 34 mD
Proposed Stimulation Program: Acid Frac Treatment None

FORMATION (Name): LYONS Porosity: 6 %
Formation TDS: 20010 mg/L Frac Gradient: 0.75 psi/ft Permeability: 10 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 4300 to 12240 bbls/day
Surface Injection Pressure Range From 100 to 2390 psi
FOR GAS: Daily Injection Rate Range From _____ to _____ mcf/day
Surface Injection Pressue Range From _____ to _____ psi

Estimated Initial Injection Date: 10/15/2015

AREA OF REVIEW OIL and GAS WELL EVALUATION SUMMARY

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

Area Review Date: 9/24/2015

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	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	4
Number Requiring Casing Repair	0
Number To Be Plugged	0

Operator's Area of Review Contact Email: _____

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: CHARLES OHLSON

Signed: _____

Title: SR OPERATIONS ENGINEER

Date: 11/14/2014 12:00:00 AM

COGCC Approved: _____



Date: 10/01/2015

Form 31 - Intent Expiration Date: 04/01/2016

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: 159962

CONDITIONS OF APPROVAL, IF ANY:

COA Type

Description

	A water analysis to include TDS, major cations, and major anions is required 1- year after initial injection and from then on at 5-year intervals. Water analyses should be submitted via Sundry Notice and in Electronic Data Deliverable (EDD) Format.
	Operator is required to install a seismometer at a location to be determined by the operator and COGCC from which seismic activity in the vicinity of the injection well can be monitored. The operator will be responsible for maintenance of the seismometer. Data gathered by the seismometer will be made available to one or more third parties (such as the USGS, CU-Boulder, CSM, or CSU) for analysis.
	Initial maximum daily injection rate limited to 10,000 bbl/day. Operator must request increase above that. Request will be evaluated based on existing daily injection rate and seismic activity within 2.5 miles of the injection well.

Attachment Check List

Att Doc Num	Name
1772949	STEP RATE TEST INFO
1772950	PROOF OF PUBLICATION
1772951	DWR HYDROLOGIC EVALUATION
1772952	SEISMIC EVALUATION-COGCC
1772953	VOLUME CALCULATION-COGCC
1772954	AREA OF REVIEW LIST & MAP
1772955	INJECTION PROGRAM
1772956	ANALYSIS OF INJECTED WATER
1772957	SURFACE AGRMT/SURETY
1772958	REMEDIAL CORRECTION PLAN FOR WELLS WITHIN 1/4 MILE
1772959	MAP O&G/WATER WELLS 1/4-MILE
1772961	STEP RATE TEST INFO
2092681	NOTICE TO SURFACE & MINERAL OWNERS
2092682	MAP OF WELLS SURFACE AND MINERAL OWNERS
2092683	LIST OF WELLS, SURFACE AND MINERAL OWNERS
2092684	ANALYSIS OF INJECTION ZONE WATER
2092685	CONST. LAYOUT DRAWINGS
2092686	LOCATION PICTURES
2092687	WELL LOCATION PLAT
2092688	LOCATION DRAWING
2493726	FORM 31 SUBMITTED
400839263	MECHANICAL INTEGRITY TEST
400902870	OFFSET WELL EVALUATION
400905041	OFFSET WELL EVALUATION
400905045	OFFSET WELL EVALUATION

Total Attach: 25 Files

General Comments

User Group	Comment	Comment Date

Total: 0 comment(s)