

**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

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Date Received:

10/10/2014

UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

1. Submit original and one copy of this form.
2. If data on this form is estimated, indicate as such.
3. Attachments - see checklist and explanation of attachments.
4. Aquifer exemption is required for all injection formations with water quality < 10,000 TDS (Rule 322B). Immediately contact the Commission for further requirements if the total dissolved solids (TDS) as determined by water analysis for the injection zone is less than 10,000 ppm.
5. Attach a copy of the certified receipt to each notice to surface and mineral owner(s) or submit a sample copy of the notice and an affidavit of mailing or delivery with names and addresses of those notified. Each person notified shall be specified as either a surface or mineral owner as defined by C.R.S. 34-60-103(7).

OPERATOR INFO

OGCC Operator Number: 10373	Contact Name and Telephone:
Name of Operator: NGL WATER SOLUTIONS DJ LLC	Name: PAUL GOTTLÖB
Address: 3773 CHERRY CRK NORTH DR, SUITE 1000	Phone: (720) 4205747 Fax: ()
City: DENVER State: CO Zip: 80209	Email: PAUL.GOTTLÖB@IPTENERGYSERVICES.COM

Facility Name: NGL C5	Facility Location: SWSW / 29 / 2N / 64W / 6
Facility Type: <input type="checkbox"/> Enhanced Recovery <input checked="" type="checkbox"/> Disposal <input type="checkbox"/> Simultaneous Disposal	
Single or Multiple Well Facility? <input checked="" type="checkbox"/> Single <input type="checkbox"/> Multiple	
County: WELD	Field Name and Number: WATTENBERG 90750

Injection Fluid Type: <input checked="" type="checkbox"/> Produced Water <input type="checkbox"/> Natural Gas <input type="checkbox"/> CO2 <input type="checkbox"/> Drilling Fluids
<input type="checkbox"/> Exempt Gas Plant Waste <input type="checkbox"/> Used Workover Fluids <input type="checkbox"/> Other Fluids (describe):
Commercial Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

If Yes, describe area of operation and types of fluids to be injected at this facility:

The NGL C5 well will take produced water from nearby oil & gas wells in the Wattenberg & other nearby fields. Water will be trucked to the adjacent Surface Facility where residual hydrocarbons and sediments will be removed before injection. Under normal operating conditions, estimated fluid injection rates for produced water will be a minimum of 10,000 bbls per day @ 2200 psi to a maximum of 34,560 bbls per day @ 2240 psi. A Step Rate Test was used to determine maximum injection pressure. The above volumes are estimated for the single new well to be added to the new injection facility at the NGL Facility C5 Location #440092.

PROPOSED INJECTION FORMATIONS

FORMATION (Name): WOLFCAMP	Porosity: 5	
Formation TDS: 15000	Frac Gradient: 0.69 psi/ft	Permeability: 52
Proposed Stimulation Program: <input type="checkbox"/> Acid <input type="checkbox"/> Frac Treatment <input checked="" type="checkbox"/> None		

PROPOSED INJECTION FORMATIONS

FORMATION (Name): VIRGIL	Porosity: 15	
Formation TDS: 14000	Frac Gradient: 0.69 psi/ft	Permeability: 52
Proposed Stimulation Program: <input type="checkbox"/> Acid <input type="checkbox"/> Frac Treatment <input checked="" type="checkbox"/> None		

PROPOSED INJECTION FORMATIONS

FORMATION (Name): MISSOURI Porosity: 3
Formation TDS: 14000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): LYONS Porosity: 5
Formation TDS: 11000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): LOWER SATANKA Porosity: 0
Formation TDS: 11000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): FOUNTAIN Porosity: 0
Formation TDS: 14000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): DES MOINES Porosity: 4
Formation TDS: Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): COUNCIL GROVE Porosity: 7
Formation TDS: 15000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): ATOKA Porosity: 4
Formation TDS: Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): AMAZON Porosity: 8
Formation TDS: 15000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

PROPOSED INJECTION FORMATIONS

FORMATION (Name): ADMIRE Porosity: 0
Formation TDS: 15000 Frac Gradient: 0.69 psi/ft Permeability: 52
Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

Anticipated Project Operating Conditions

Under normal operating conditions, estimated fluid injection rates and pressures:

FOR WATER: A minimum of 10000 bbls/day @ 0 psi to A maximum of 30000 bbls/day @ 1800 psi

FOR GAS: A minimum of _____ mcf/day @ _____ psi to A maximum of _____ mcf/day @ _____ psi

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

Print Name: PAUL GOTTLOB Signed: _____

Title: REG & ENG TECH Date: 10/10/2014 12:00:00 AM

OGCC Approved:  Title: _____ Date: 05/20/2015

Order No: _____

UIC FACILITY NO: 159959

CONDITIONS OF APPROVAL, IF ANY:

<u>COA Type</u>	<u>Description</u>
	Initial daily injection rate restricted to 10,000 bbl/day. If operator wishes to increase daily rate above 10,000 bbl/day, they must request increase from COGCC via Sundry Notice.
	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 NGL #C5 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.
	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.
	NGL shall submit a Form 4 Sundry Notice notifying the COGCC of the date of initial injection within thirty (30) days of initial injection.

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1772801	WELLBORE DIAGRAM-CURRENT
1772802	MAXIMUM SURFACE INJECTION PRESSURE DETERMINATION
1772803	VOLUME CALCULATION
1772804	HYDROLOGY INFO REQUEST
1772805	PUBLIC NOTICE-GENERAL
1772806	ANALY. OF INJ. ZONE
2092149	FORM 31 SUBMITTED
2092150	NOTICE TO SURFACE & MINERAL OWNERS-ORIGINAL
2092151	REMEDIAL CORRECTION STATEMENT
2092152	MAP O&G/WATER WELLS 1/4-MILE
2092153	LIST OF O&G/WATER WELLS 1/2-MILE
2092154	LIST OF SURFACE OWNERS 1/4-MILE
2092155	MAP OF SURF. OWNERS 1/4 MILE
2092156	LIST OF MIN. OWNERS 1/4 MILE
2092157	MAP OF MIN. OWNERS 1/4 MILE
2092158	LOCATION DRAWING
2092159	WELLBORE DIAGRAM-PROPOSED
2618517	FORM 31 CONDITIONS OF APPROVAL
400842276	OFFSET WELL EVALUATION
400842528	OFFSET WELL EVALUATION

Total Attach: 20 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
UIC	COGCC performed Area of Review analysis. Area of Review Tab not working. Will update UIC Scoutcard manually. 24 wells within 1/2-mile, no remediation necessary. See data table.	5/19/2015 12:40:26 PM
UIC	Under Formations: No TDS listed for Des Moines and Atoka Formations because no water was recovered from operator's swabbing attempts.	5/14/2015 8:48:41 AM
Total: 2 comment(s)		