

Last Notice  
1/8/13

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
- Engineering Bureau -  
1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A].
- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD
- Check One Only for [B] or [C]
- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR
- [D] Other: Specify \_\_\_\_\_
- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or  Does Not Apply
- [A]  Working, Royalty or Overriding Royalty Interest Owners
- [B]  Offset Operators, Leaseholders or Surface Owner
- [C]  Application is One Which Requires Published Legal Notice
- [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F]  Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate and complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

**Note:** Statement must be completed by an individual with managerial and/or supervisory capacity.

<u>BRIAN COLLINS</u> Print or Type Name	<u><i>Brian Collins</i></u> Signature	<u>SENIOR OPERATIONS ENGINEER</u> Title	<u>27 Nov 12</u> Date
		<u>bcollins@concho.com</u> e-mail Address	



RECEIVED OGD

2012 DEC -3 A 9:17

November 27, 2012

New Mexico Oil Conservation Division  
Attn: William V. Jones  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE: Application For Authorization To Inject  
Willow 17 State SWD No. 1  
Township 25 South, Range 28 East, N.M.P.M.  
Section 17: 660' FSL & 660' FEL  
Eddy County, New Mexico

Dear Mr. Jones:

COG Operating LLC respectfully requests administrative approval for authorization to inject for the Willow 17 State SWD No. 1 well as referenced above. Attached, for your review, is a copy of the C-108 application. Once we receive the newspaper publication and all certified return receipts, I will send you a copy.

Please do not hesitate to contact me at (575) 748-6940 should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Collins".

Brian Collins  
Senior Operations Engineer

BC/bg  
Enclosures

**APPLICATION FOR AUTHORIZATION TO INJECT**

I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance  X  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval?  X  Yes \_\_\_\_\_ No

II. OPERATOR:  COG OPERATING LLC

ADDRESS:  2208 W. Main Street, ARTESIA, NM 88210

CONTACT PARTY:  BRIAN COLLINS  PHONE:  575-748-6940

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes  X  No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

\*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

\*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

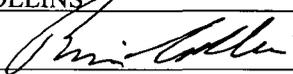
\*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME:  BRIAN COLLINS  TITLE:  Senior Operations Engineer

SIGNATURE:    DATE:  27 Nov 12

E-MAIL ADDRESS:  bcollins@concho.com

\* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

C-108 Application for Authorization to Inject  
WILLOW 17 STATE SWD #1  
Unit P, Sec 17 T25S R28E  
Eddy County, NM

COG Operating, LLC, proposes to drill the captioned well to 15300' for salt water disposal service into the Devonian from 14000' to 15300'. An APD will be submitted upon approval of this C-108.

- V. Map is attached.
- VI. No wells within the ½ mile radius area of review penetrate the proposed injection zone.
- VII.
  - 1. Proposed average daily injection rate = 7500 BWPD  
Proposed maximum daily injection rate = 25000 BWPD
  - 2. Closed system
  - 3. Proposed maximum injection pressure = 2800 psi  
(0.2 psi/ft. x 14000' ft.)
  - 4. Source of injected water will be Delaware Sand, Bone Spring Sand and Wolfcamp produced water. No compatibility problems are expected. Analyses of Delaware, Bone Spring and Wolfcamp waters from analogous source wells are attached. There are no Devonian receiving formation water analyses available in this area.
- VIII. The injection zone is the Devonian composed of limestone and dolomite from 14000' to 15300'. Any underground water sources will be shallower than 176' based on State Engineers records.
- IX. The Devonian injection interval might be acidized with approximately 40,000 gal. of 20% HCl acid.
- X. Well logs, if run, will be filed with the Division. There is only one Devonian penetration on this area, the SRO 102 SWD located in Sec. 16-26S-28E, and it was not logged in the Devonian.
- XI. There is one fresh water well within a mile of the proposed SWD well. Well could not be located on site visit. Water analysis from a stock tank about 1.75 miles to the south is attached.
- XII. After examining the available geologic and engineering data, no evidence was found of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Proof of Notice is attached.

# **III.**

## **WELL DATA**

INJECTION WELL DATA SHEET

OPERATOR: COG Operating, LLC

WELL NAME & NUMBER: Willow 17 State SWD 1

WELL LOCATION: 660 ' FSL 660 ' FEL      P      17      25 s      28e  
FOOTAGE LOCATION      UNIT LETTER      SECTION      TOWNSHIP      RANGE

WELLBORE SCHEMATIC

See Attached Schematic

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 26"      Casing Size: 20" @ 400' ±  
Cemented with: - sx.      or 1200 ft<sup>3</sup>  
Top of Cement: Surface      Method Determined: Design

Intermediate Casing

Hole Size: 17 1/2" / 12 1/4"      Casing Size: 13 3/8" @ 2300' ± / 9 5/8" @ 9500' ±  
Cemented with: - sx.      or 3200 / 3600 ft<sup>3</sup>  
Top of Cement: Surface / 1800'      Method Determined: Design / Design

Production Casing

Hole Size: 8 3/4"      Casing Size: Liner / 7" @ 9200' ± - 14000' ±  
Cemented with: - sx.      or 1100 ft<sup>3</sup>  
Top of Cement: 9200' ± Top Liner      Method Determined: Design  
Total Depth: 15300'

Injection Interval

14000' feet to 15300'

(Perforated or Open Hole; indicate which)

**INJECTION WELL DATA SHEET**

Tubing Size: 4 1/2" Lining Material: IPC or Ovaline ZO  
Type of Packer: Nickel plated double grip retrievable  
Packer Setting Depth: 13950' ±  
Other Type of Tubing/Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes        No  
If no, for what purpose was the well originally drilled? \_\_\_\_\_  
\_\_\_\_\_

2. Name of the Injection Formation: Devonian

3. Name of Field or Pool (if applicable): San Lorenzo

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No

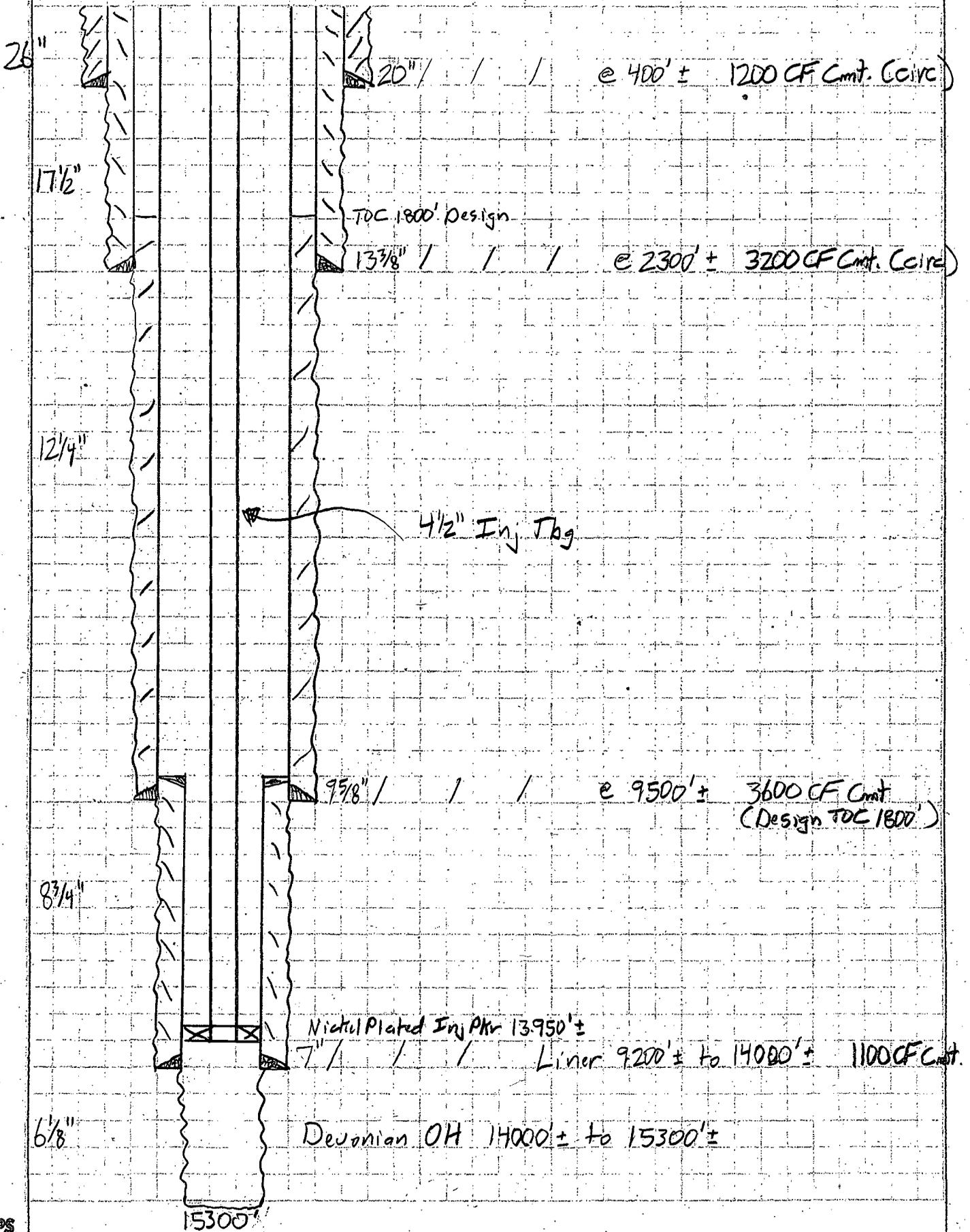
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

Underlying: None

Overlying: Morrow ±12300-12700' ± Atoka: Not Prod Strawn: ±11675'-11725' ±  
Wolfcamp ±9500-10500' ± Bone Spring ±6200-±9000'  
Penn: ±11150-11225' ±

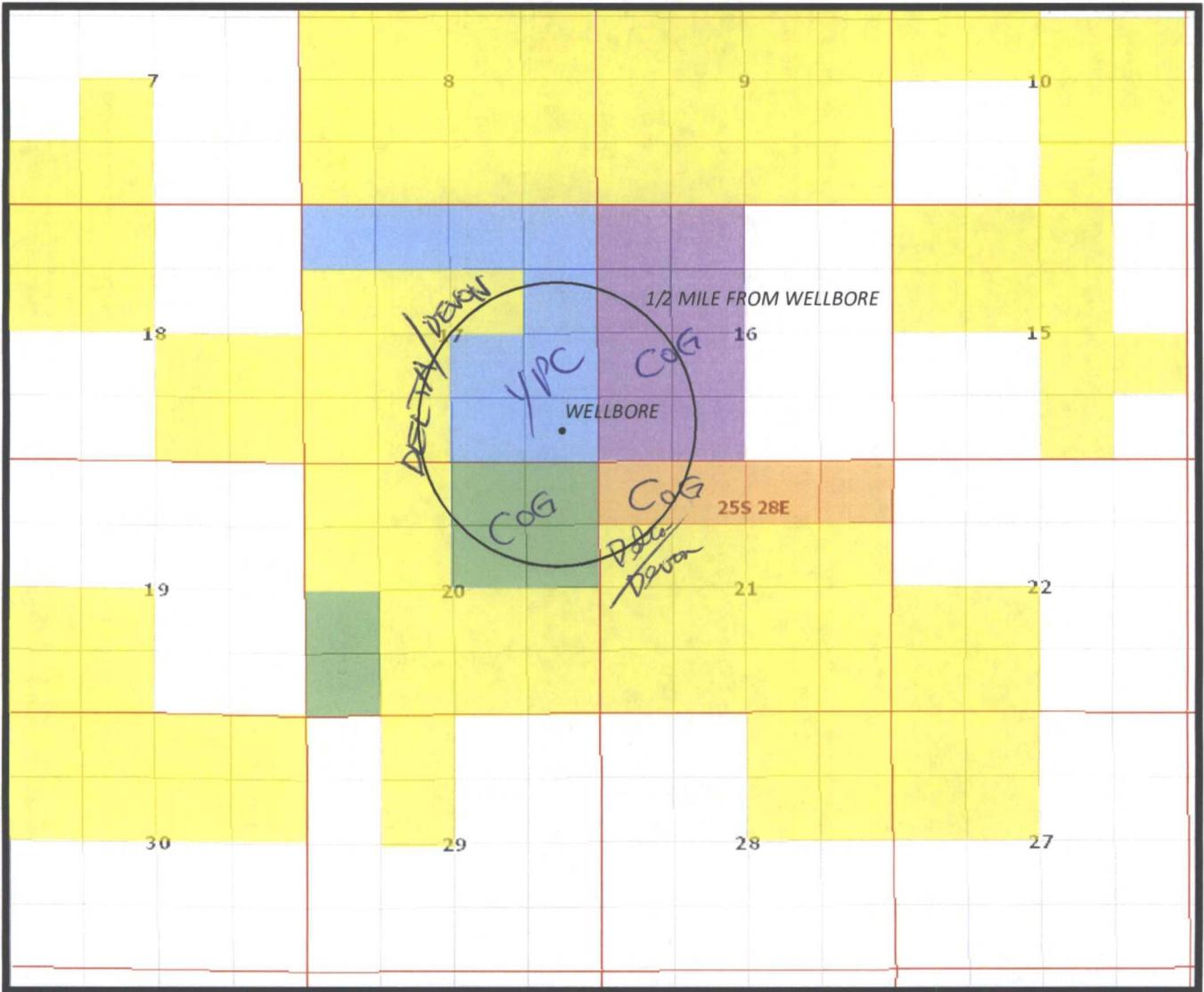
30-D15-

Willow 17 State SWD 1  
660' FSL, 660' FEL  
P - 17 - 25 s - 28 e  
Eddy, NM



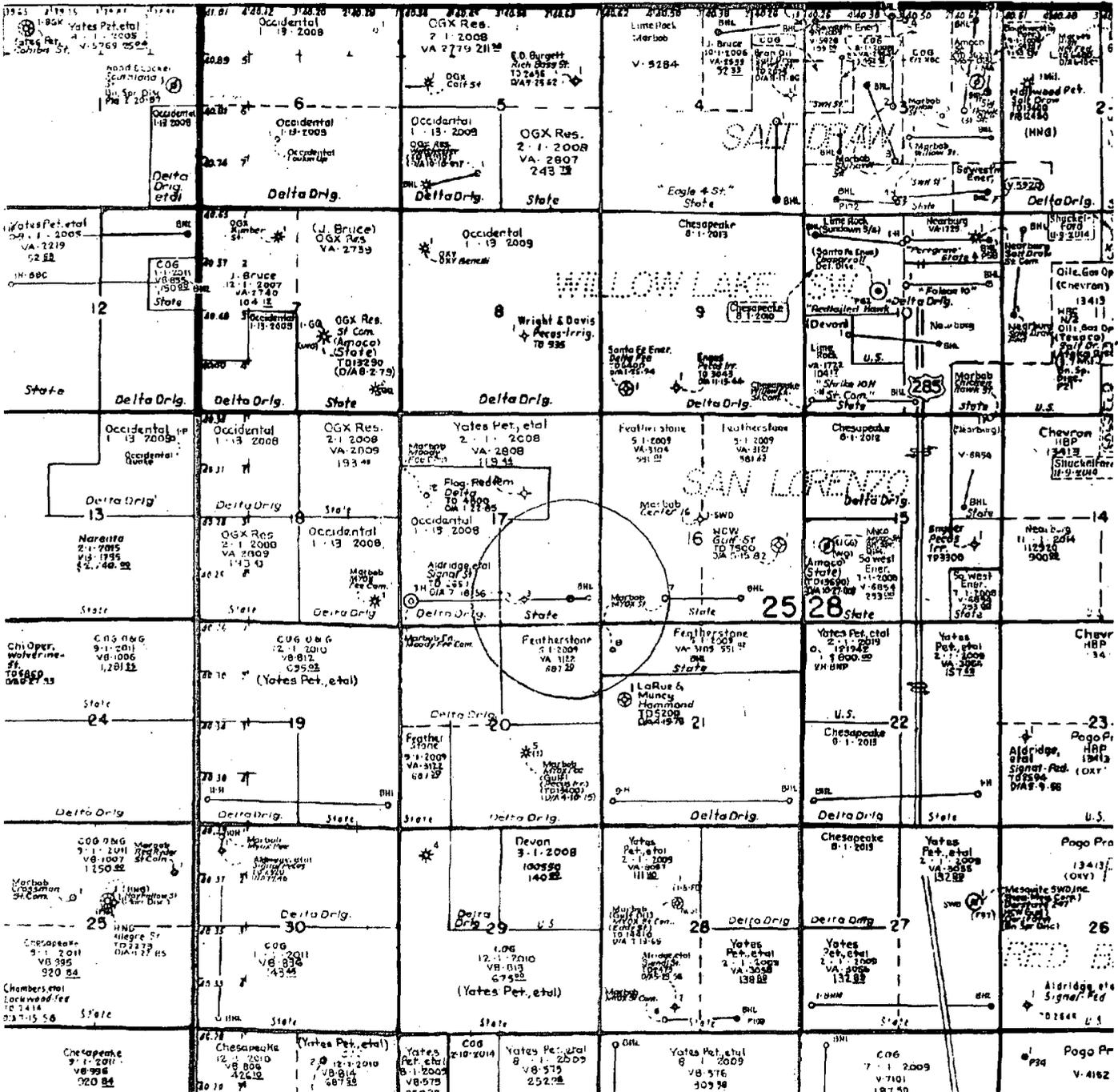
**V.**

**MAP**



- Delta Drilling/Devon Energy
- COG Operating LLC
- COG Operating LLC
- COG Operating LLC
- Yates Petroleum Corporation

**Willow 17 State SWD No.1**  
**660' FSL & 660' FEL**  
**Sec. 17; T25s - R28e**  
**Eddy County, New Mexico**



**COG Operating, LLC**  
**Willow 17 State SWD #1**  
**Unit P, Sec 17-T25S-R28E**  
**Eddy County, NM**

# **VII.**

## **Water Analysis Produced and Receiving Formation Water**

WATER SAMPLES REPRESENTATIVE OF WATER BEING INJECTED INTO THE PROPOSED SWD WELL												
<b>Delaware</b>												
Lab Test #	Lease	Location	Salesman	Date Out	Sample Date	Specific Gravity	Ionic Strength	TDS	pH	conductivity	Ca (mg/L)	Mg (mg/L)
2011128362	Sly Hawk State	1	William D Polk	9/28/2011	9/13/2011	1.17	4.06	256802.26	6.50		26180.00	4101.14
<b>Bone Spring</b>												
Lab Test #	Lease	Location	Salesman	Date Out	Sample Date	Specific Gravity	Ionic Strength	TDS	pH	conductivity	Ca (mg/L)	Mg (mg/L)
2012108003	Boyles	24 1H	William D Polk	4/16/2012	4/3/2012	1.13	3.41	206441.81	6.69		3700.86	841.87
<b>Wolfcamp</b>												
Lab Test #	Lease	Location	Salesman	Date Out	Sample Date	Specific Gravity	Ionic Strength	TDS	pH	conductivity	Ca (mg/L)	Mg (mg/L)
2012105892	Augustus 10	1H		3/15/2012	3/8/2012	1.06	1.46	89771.55	6.60		3963.30	639.83

TH (CaCO3)	Na (mg/L)	K (mg/L)	Zn (mg/L)	Fe (mg/L)	Ba (mg/L)	Sr (mg/L)	Mn (mg/L)	Resistivity	HCO3 (mg/L)	CO3 (mg/L)	OH (mg/L)	SO4 (mg/L)	Cl (mg/L)	CO2 (mg/L)	H2S (mg/L)
83379.63	62970.16	1133.12	38.78	20.06	1.64	905.03	9.33		73.00	0.00		70.00	161300.00	360.00	0.00
TH (CaCO3)	Na (mg/L)	K (mg/L)	Zn (mg/L)	Fe (mg/L)	Ba (mg/L)	Sr (mg/L)	Mn (mg/L)	Resistivity	HCO3 (mg/L)	CO3 (mg/L)	OH (mg/L)	SO4 (mg/L)	Cl (mg/L)	CO2 (mg/L)	H2S (mg/L)
13271.35	69386.15	1109.30	0.00	17.57	0.00	483.07	0.00		1403.00	0.00		700.00	128800.00	400.00	0.00
TH (CaCO3)	Na (mg/L)	K (mg/L)	Zn (mg/L)	Fe (mg/L)	Ba (mg/L)	Sr (mg/L)	Mn (mg/L)	Resistivity	HCO3 (mg/L)	CO3 (mg/L)	OH (mg/L)	SO4 (mg/L)	Cl (mg/L)	CO2 (mg/L)	H2S (mg/L)
13352.51	28320.32	350.70	0.00	17.85	1.77	707.79	0.00		220.00	0.00		950.00	54600.00	60.00	0.00

# **XI.**

## **Fresh Water Sample Analyses**



# New Mexico Office of the State Engineer

## Active & Inactive Points of Diversion

(with Ownership Information)

WR File Nbr	Sub	basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q				X	Y		
											6416	4	Sec	Tws			Rng	
<u>C 01573</u>	C	PRO	0		GULF OIL CORPORATION	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 02668</u>	C	STK	3		G A GUNN	ED	<u>C 02668</u> Outside 1 mile AOR (150')			Shallow	2	1	2	09	25S	28E	585890	3557525*
<u>C 03263</u>		STK	3		CLARAMAI R HAYHURST	ED	<u>C 03263</u> POD1 Outside 1 mile AOR (133')			Shallow	1	1	1	07	25S	28E	581628	3557501*
<u>C 03471</u>	C	PRO	0		CONCHO OIL AND GAS	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 03516</u>	C	PRO	0		OGX (GRR INC.)	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 03517</u>	C	PRO	0		OGX (GRR INC.)	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 03518</u>	C	PRO	0		OGX (GRR INC.)	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 03519</u>	C	PRO	0		OGX RESOURCES, LLC	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 03521</u>	C	PRO	0		OGX RESOURCES LLC	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361
<u>C 03524</u>	C	PRO	0		OGX RESOURCES, LLC	ED	<u>C 01573</u> POD1 ]			Shallow	3	1	4	20	25S	28E	584143	3553361

(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)  
 C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

Record Count: 10

**PLSS Search:**

Section(s): 7, 8, 9, 16, 17, 18, 19, 20, 21      Township: 25S      Range: 28E

Sorted by: File Number

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



# New Mexico Office of the State Engineer

## Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest) (NAD83 UTM in meters)

<b>POD Number</b>	<b>Q64 Q16 Q4 Sec Tws Rng</b>	<b>X</b>	<b>Y</b>
C 01573 POD1	3 1 4 20 25S 28E	584144	3553361

**Driller License:** ABBOTT BROTHERS COMPANY

**Driller Name:** MURRELL ABBOTT

**Drill Start Date:** 01/15/1975

**Drill Finish Date:** 01/20/1975

**Plug Date:**

**Log File Date:** 01/23/1975

**PCW Rcv Date:**

**Source:** Shallow

**Pump Type:**

**Pipe Discharge Size:**

**Estimated Yield:** 50

**Casing Size:** 7.00

**Depth Well:** 176 feet

**Depth Water:** 96 feet

<b>Water Bearing Stratifications:</b>	<b>Top</b>	<b>Bottom</b>	<b>Description</b>
	96	176	Sandstone/Gravel/Conglomerate

<b>Casing Perforations:</b>	<b>Top</b>	<b>Bottom</b>
	156	176

# HALLIBURTON

PERMAIN BASIN OPERATIONS LABORATORY  
 WATER ANALYSIS REPORT  
 HOBBS, NEW MEXICO

COMPANY Marbob  
Stock Water Well  
SE/4 NE/4 SE/4 Sec. 29. 25s-28e

REPORT W09-059  
 DATE July 30, 2009  
 DISTRICT Hobbs

SUBMITTED BY \_\_\_\_\_

WELL Stock Tanks DEPTH \_\_\_\_\_ FORMATION \_\_\_\_\_  
 COUNTY \_\_\_\_\_ FIELD \_\_\_\_\_ SOURCE \_\_\_\_\_

SAMPLE	5-26S-28C	C-2160 5-S	C03413	
Sample Temp.	70 °F	70 °F	70 °F	°F
RESISTIVITY	15.8	3.41	3.41	
SPECIFIC GR.	1.000	1.002	1.002	
pH	8.57	8.12	7.89	
CALCIUM	700 mpl	1,000 mpl	1,150 mpl	mpl
MAGNESIUM	390 mpl	750 mpl	750 mpl	mpl
CHLORIDE	45 mpl	1,222 mpl	316 mpl	mpl
SULFATES	Light mpl	Moderate mpl	Moderate mpl	mpl
BICARBONATES	170 mpl	366 mpl	292 mpl	mpl
SOLUBLE IRON	0 mpl	0 mpl	0 mpl	mpl
KCL	Negative	Negative	Negative	
Sodium	mpl	mpl	mpl	0 mpl
TDS	mpl	mpl	mpl	0 mpl
OIL GRAVITY	@ °F	@ °F	@ °F	@ °F

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

MPL = Milligrams per liter  
 Resitivity measured in: Ohm/m2/m

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Co.

ANALYST: JH



November 27, 2012

Artesia Daily Press  
P. O. Box 190  
Artesia, NM 88211-0190

Re: Legal Notice  
Salt Water Disposal Well  
Willow 17 State SWD No. 1

To Whom It May Concern:

Enclosed is a legal notice regarding New Mexico Oil Conservation Division C-108 Application for Authorization to Inject for a salt water disposal well.

Please run this notice and return the proof of notice to the undersigned at:

**COG Operating LLC, 2208 W. Main St., Artesia, NM 88210**

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Collins".

Brian Collins  
Senior Operations Engineer

BC/sw  
Enclosures

**ARTESIA DAILY PRESS**  
**LEGAL NOTICES**

COG Operating LLC, 2208 W. Main Street, Artesia, New Mexico, 88210, has filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Willow 17 State SWD No. 1 is located 660' FSL and 660' FEL, Sec. 17, Township 25 South, Range 28 East, Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Delaware, Bone Spring and Wolfcamp formations. The disposal water will be injected into the Devonian formation at a depth of 14000-15300' at a maximum surface pressure of 2800 psi and a maximum rate of 25,000 BWPD. This well is located approximately 10 miles south of Loving. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Street, Santa Fe, New Mexico, 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Brian Collins at COG Operating LLC, 2208 W. Main Street, Artesia, New Mexico 88210, or call 575-748-6940.

Published in the Artesia Daily Press, Artesia, New Mexico  
\_\_\_\_\_, 2012.





November 27, 2012

New Mexico State Land Office  
P O Box 1148  
Santa Fe, NM 87504-1148

Re: Application to Inject  
Willow 17 State SWD No. 1  
Township 25 South, Range 28 East, N.M.P.M.  
Section 17: 660' FSL & 660' FEL  
Eddy County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Collins".

Brian Collins  
Senior Operations Engineer

BC/sw  
Enclosures



November 27, 2012

Oil Conservation Division  
Attn: Richard Inge  
811 South 1<sup>st</sup> St.  
Artesia, NM 88210

RE: Application For Authorization To Inject  
Willow 17 State SWD No. 1  
Township 25 South, Range 28 East, N.M.P.M.  
Section 17: 660' FSL & 660' FEL  
Eddy County, New Mexico

Dear Mr. Inge:

COG Operating LLC respectfully requests administrative approval for authorization to inject for the Willow 17 State SWD No. 1 well as referenced above. Attached, for your review, is a copy of the C-108 application. Once we receive the newspaper publication and all certified return receipts, I will send you a copy.

Please do not hesitate to contact me at (575) 748-6940 should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Collins".

Brian Collins  
Senior Operations Engineer

BC/bg  
Enclosures



November 27, 2012

Yates Petroleum Corporation  
105 South Fourth Street  
Artesia, NM 88210

Re: Application to Inject  
Willow 17 State SWD No. 1  
Township 25 South, Range 28 East, N.M.P.M.  
Section 17: 660' FSL & 660' FEL  
Eddy County, New Mexico

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Brian Collins  
Senior Operations Engineer

BC/sw  
Enclosures

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**NM OIL CONSERVATION DIVISION  
1220 S ST FRANCIS DR  
SANTA FE NM 87505**

2. Article Number  
(Transfer from service label) **7011 1570 0000 7781 3400**

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  
*[Signature]*  Agent  Addressee

B. Received by (Printed Name) *Rebecca Lopez* C. Date of Delivery

D. Is delivery address different from item 1?  Yes  No  
If YES, enter delivery address below

**NOV 30 2012**

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**NM STATE LAND OFFICE  
P O BOX 1148  
SANTA FE NM 87504-1148**

2. Article Number  
(Transfer from service label) **7011 1570 0000 7781 3417**

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  
*[Signature]*  Agent  Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  No  
If YES, enter delivery address below

**DEC - 3 2012**

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

<b>SENDER: COMPLETE THIS SECTION</b>		<b>COMPLETE THIS SECTION ON DELIVERY</b>	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		A. Signature X <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to: <i>Devon Energy Delta Drlg  Attn: Mr. Kim Gray  P.O. Box 1678  Oklahoma City, OK  73101</i>		B. Received by (Printed Name) <i>[Signature]</i> C. Date of Delivery <i>2/17/04</i>	
		D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, enter delivery address below:	
		3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
2. Article Number (Transfer from service label)		7011 1570 0000 7781 3905	
PS Form 3811, February 2004		Domestic Return Receipt	
		102595-02-M-1540	

<b>SENDER: COMPLETE THIS SECTION</b>		<b>COMPLETE THIS SECTION ON DELIVERY</b>	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		A. Signature X <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to:           <b>YATES PETROLEUM CORPORATION</b> <b>105 S 4TH ST</b> <b>ARTESIA NM 88210</b>		B. Received by (Printed Name) <i>[Signature]</i> C. Date of Delivery <i>11-30-12</i>	
		D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:	
		3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
2. Article Number (Transfer from service label)		7011 1570 0000 7781 3387	
PS Form 3811, February 2004		Domestic Return Receipt	
		102595-02-M-1540	

**Jones, William V., EMNRD**

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**From:** Jones, William V., EMNRD  
**Sent:** Friday, December 28, 2012 5:19 PM  
**To:** 'Bobbie Goodloe'; Brian Collins  
**Cc:** Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Brooks, David K., EMNRD  
**Subject:** Disposal applications from COG Operating, LLC: proposed Reposado 2 State SWD #1, Apple 5 State SWD #1, and Willow 17 State SWD #1, all in Eddy County. (Devonian open holes)

Hello Bobbie and Brian,

These SWD applications look OK, and the only things I seem to be missing or would ask about:

Would you ask the Geologist to estimate the top of Devonian and base of Devonian in each of these wells?

And please send to me a copy of the latest actual newspaper notice and the certified mailer receipts (or receipt numbers) with dates of mailing to the affected parties.

For the Reposado 2 State SWD #1 it appeared that El Paso may not have been noticed?

For the Willow 17 State SWD #1 it appeared that Delta and Devon may not have been noticed?

*owns Delta, Devon will be NOTICED ~ 1/3/12*

There are no producing wells in the AOR of a proposed SWD well, so in this case there are no dedicated spacing units with "Operators of Record" at Devonian depths.

Therefore the certified notices should be going out to the Lessees of Devonian oil and gas rights or whomever controls the rights to the Devonian minerals within the AOR. If no lessees, then notices should be sent to mineral owners. Would you check with your favorite Landman to verify this is happening? If there are any gray areas, the COG Landman could call David Brooks (our Landman/Attorney) at 505-476-3450 to ensure all is well in this regard. I have found that Land people speak best to other land people and I may not understand the conversation!

I may only be here on Monday of next week – so HAPPY NEW YEAR!

....There are several SWD permits for COG and others drafted and waiting for the Director to sign when she returns from vacation (we believe on January 3<sup>rd</sup>).

Thank You!

Will Jones

**Jones, William V., EMNRD**

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**From:** Brian Collins <BCollins@concho.com>  
**Sent:** Wednesday, January 02, 2013 7:35 AM  
**To:** Jones, William V., EMNRD  
**Subject:** RE: Disposal applications from COG Operating, LLC: proposed Reposado 2 State SWD # 1, Apple 5 State SWD #1, and Willow 17 State SWD #1 all in Eddy County. (Devonian open holes)

Will:

OK

We'll get you some answers ASAP. I've got the estimated top of the Devonian from our geologists, but not the base. Due to geologic uncertainty on the tops and presence of good dolomite, I've filed for disposal intervals approx. 150' high to the estimated top of the Devonian and for gross injection interval thicknesses in the 1200' range. We'll actually set casing into the top of the Devonian (covering the Woodford shale) when we drill these wells. I'll visit with the geologists about estimated Devonian thicknesses. Thanks. --Brian

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**From:** Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]  
**Sent:** Friday, December 28, 2012 6:19 PM  
**To:** Bobbie Goodloe; Brian Collins  
**Cc:** Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Brooks, David K., EMNRD  
**Subject:** Disposal applications from COG Operating, LLC: proposed Reposado 2 State SWD #1, Apple 5 State SWD #1, and Willow 17 State SWD #1 all in Eddy County. (Devonian open holes)

Hello Bobbie and Brian,

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....There are several SWD permits for COG and others drafted and waiting for the Director to sign when she returns from vacation (we believe on January 3<sup>rd</sup>).

**Jones, William V., EMNRD**

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**From:** Brian Collins <BCollins@concho.com>  
**Sent:** Wednesday, January 02, 2013 10:31 AM  
**To:** Jones, William V., EMNRD  
**Cc:** Dean Chumbley; Bobbie Goodloe  
**Subject:** RE: Disposal applications from COG Operating, LLC: proposed Reposado 2 State SWD # 1, Apple 5 State SWD #1, and Willow 17 State SWD #1 all in Eddy County. (Devonian open holes)

Will:

Here's some answers to your notification questions:

Apple 5 State SWD 1: We've notified all the necessary lessees of record. COG operates all the wells that have been drilled within the AOR.

Willow 17 State SWD 1: We will notify Delta Drilling/Devon as lessees of record/mineral owners ASAP—our mistake. Devon owns Delta Drilling's surface and minerals in this area so the notice will be sent to Devon. COG operates all the wells that have been drilled within the AOR.

Reposado 2 State SWD 1: We didn't notify El Paso Natural Gas, but will send out notice ASAP—our mistake. Our notification list was for the lessees of record within the AOR.

If you still have notification questions, let me know and I'll have Dean Chumbley visit with you. Thanks for your patience.

Brian

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**From:** Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]  
**Sent:** Friday, December 28, 2012 6:19 PM  
**To:** Bobbie Goodloe; Brian Collins  
**Cc:** Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Brooks, David K., EMNRD  
**Subject:** Disposal applications from COG Operating, LLC: proposed Reposado 2 State SWD #1, Apple 5 State SWD #1, and Willow 17 State SWD #1 all in Eddy County. (Devonian open holes)

Hello Bobbie and Brian,

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**Jones, William V., EMNRD**

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**From:** Brian Collins <BCollins@concho.com>  
**Sent:** Tuesday, January 08, 2013 2:58 PM  
**To:** Jones, William V., EMNRD  
**Subject:** COG Devonian-Silurian-Ordovician SWD Applications--Remaining Requested Devonian Tops/Bases

Will:

Here's the rest of the Devonian tops/bases you requested. Our geologist noted that the tops are approximate and the bases are very approximate due to the lack of well control. When the wells are drilled and actually penetrate the Devonian, we'll set 7" to the top of the Devonian and drill the rest of the way as an open hole disposal interval. Thanks.

Reposado 2 State SWD 1 (2-26s-29e): Geologist pick for Devonian top = 15654' and base = 16,143'  
C108 application interval = 15,500-16,900'

Willow 17 State SWD 1 (17-25s-28e): Geologist pick for Devonian top = 14,323' and base = 14,723'  
C108 application interval = 14,000-15,300'

Apple 5 State SWD 1 (5-26s-28e): Geologist pick for Devonian top = 14,279' and base = 14,679'  
C108 application interval = 14,100-15,400'

**Brian Collins**  
Senior Operations Engineer - NM Basin  
COG OPERATING LLC  
2208 W Main St  
Artesia, New Mexico 88210-3720  
575.748.6924 W  
432-254-5870 C



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in 12/3/12 (1/8/13 LORNTIC)

Release 1/24/13

Injection Permit Checklist (11/15/2010)

W/FX \_\_\_\_\_ PMX \_\_\_\_\_ SWD 1387 Permit Date 12/12 UIC Qtr (0/1/0)

# Wells 1 Well Name(s): WILD W STATE SWD #1

API Num: 30-015-NA Spud Date: Not Yet New/Old: N (UIC primacy March 7, 1982)

Footages 660 FSL/660 FEL Unit P Sec 17 Tsp 25 S Rge 28 E County BARRETT

General Location: NW of Red Bluff Res.

Operator: COG OPERATING, LLC Contact BRIAN COLLINS

OGRID: 229137 RULE 5.9 Compliance (Wells) 9/2755 (Finan Assur) OK IS 5.9 OK? OK

Well File Reviewed N Current Status: NOT Permitted

Planned Work to Well: Drill/EQUIP/DSP.

Diagrams: Before Conversion \_\_\_\_\_ After Conversion ✓ Elogs in Imaging File: NOT Drilled

Well Details:	Sizes		Setting Depths	Stage Tool	Cement Sx or Cf	Cement Top and Determination Method
	Hole.....	Pipe				
New <input checked="" type="checkbox"/> Existing _____ Surface	<u>26</u>	<u>20</u>	<u>400</u>		<u>1200 CF</u>	<u>Surf</u>
New <input checked="" type="checkbox"/> Existing _____ Interm	<u>17 1/2</u>	<u>13 1/8</u>	<u>2300</u>		<u>3200 CF</u>	<u>Surf</u>
New <input checked="" type="checkbox"/> Existing _____ LongSt	<u>12 1/4</u>	<u>9 1/8</u>	<u>9500</u>		<u>360 CF</u>	<u>(into HIGHER ST)</u>
New <input checked="" type="checkbox"/> Existing _____ Liner	<u>8 3/4</u>	<u>7</u>	<u>9200 - 14000</u>		<u>1100 CF</u>	<u>To Liner Top</u>
New <input checked="" type="checkbox"/> Existing _____ OpenHole	<u>6 1/8</u>		<u>1400 - 15300 TD</u>			

Depths/Formations:	Depths, Ft.	Formation	Tops?
Formation(s) Above	<u>14323</u>	<u>Dev</u>	<input checked="" type="checkbox"/>
Injection TOP:	<u>14000</u>	<u>DEVONIAN</u>	Max. PSI <u>2800</u> Open Hole <input checked="" type="checkbox"/> Perfs <u>W/IN 100 FT</u>
Injection BOTTOM:	<u>15300</u>	<u>"</u>	Tubing Size <u>4 1/2"</u> Packer Depth <u>14500 FT</u>
Formation(s) Below	<u>14723</u>	<u>Base of Dev</u>	<input checked="" type="checkbox"/>

Capitan Res? ~~(Potash?)~~ Noticed? ~~(WHP?)~~ Noticed? ~~(Salado Top/Bot 2500-3000)~~ ~~(Cinn. House?)~~

Fresh Water: Depths: < 176' Formation \_\_\_\_\_ Wells? yes Analysis? yes Affirmative Statement

Disposal Fluid Analysis?  Sources: Dev./B.S./WC

Disposal Interval: Analysis? NO Production Potential/Testing: NO SURF. PROD. or TESTS

Notice: Newspaper Date 12/12/12 Surface Owner: SI (11/27/12) Mineral Owner(s) Cart

RULE 26 24A Affected Persons: Delta/Devon/IPC 1/8/13 recaps

AOR: Maps?  Well List?  Producing in Interval? NO Wellbore Diagrams? \_\_\_\_\_

.....Active Wells 0 Repairs? \_\_\_\_\_ Which Wells? \_\_\_\_\_

.....P&A Wells 0 Repairs? \_\_\_\_\_ Which Wells? \_\_\_\_\_

Issues: How TRACK in DEV? Request Sent \_\_\_\_\_ Reply: \_\_\_\_\_