

DATE IN 7.30.10	SUSPENSE	ENGINEER WJF	LOGGED IN 7.30.10	TYPE SWD	APP NO 1021055068
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ABOVE THIS LINE FOR DIVISION USE ONLY

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



RECEIVED OCD

Devon
CDU #81

ADMINISTRATIVE APPLICATION CHECKLIST

30-015-29345

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.

RONNIE SLACK

Print or Type Name

Ronnie Slack

Signature

Operations Technician

Title

7-27-10

Date

Ronnie.Slack@DVN.com
 e-mail Address



Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102-8260

405 235 3611 Phone
www.devonenergy.com

July 27, 2010

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RE: Form C-108, Application for Authorization to Inject
Cotton Draw Unit #81; API# 30-015-29345
Eddy County, NM
Section ~~25, T22S, R30E~~

Dear Sir or Madam:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject. Devon's application proposes to convert the Cotton Draw Unit #81 to salt water disposal. Produced waters will be injected into the Delaware Bell Canyon interval from 4541' to 5250' and Cherry Canyon interval from 5324' to 5734'.

A copy of this application is being filed with the OCD-Artesia office. Notification has been sent to the surface land owner and to leasehold operators.

If you have any questions, please contact Jim Cromer at (405)-228-4464 or myself at (405)-552-4615.

Sincerely,

A handwritten signature in cursive script that reads "Ronnie Slack".

Ronnie Slack
Engineering Technician

RS/rs
Enclosure

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance ☒ Disposal _____ Storage
Application qualifies for administrative approval? ☒ Yes _____ No
- II. OPERATOR: _____ Devon Energy Production Company, LP _____
ADDRESS: _____ 20 North Broadway, Suite 1500, Oklahoma City, Oklahoma 73102 _____
CONTACT PARTY: _____ Ronnie Slack _____ PHONE: _____ 405-552-4615
- 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 ☒ 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: _____ Ronnie Slack _____ TITLE: _____ Engineering Technician
- SIGNATURE: Ronnie Slack DATE: 7-27-10
- E-MAIL ADDRESS: _____ Ronnie.Slack@DVN.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: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.
- Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.
- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
- (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

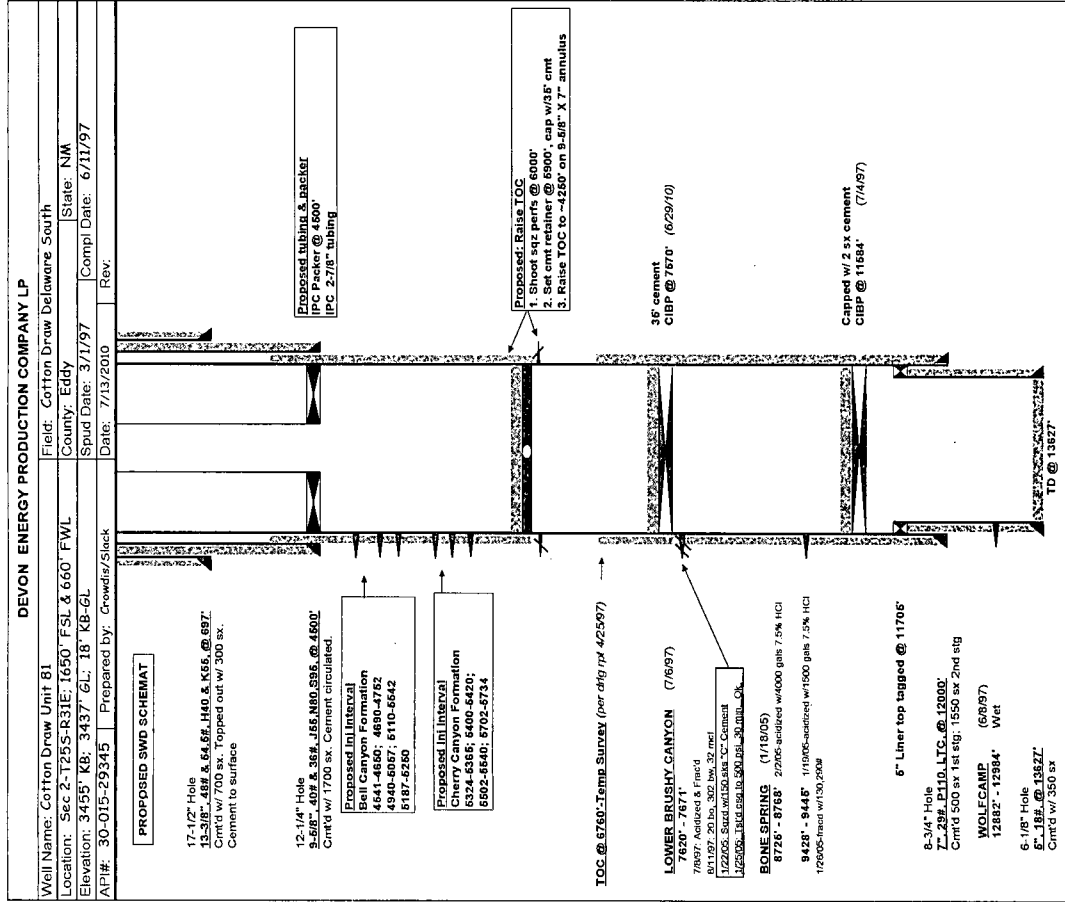
OPERATOR: Devon Energy Production Company, LP

WELL NAME & NUMBER: COTTON DRAW UNIT #81

WELL LOCATION: 1650' FSL & 660' FWL L Sec 2 T25S R31E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA
Surface Casing



Hole Size: 17-1/2" Casing Size: 13-3/8", 48/54, @ 697'
Cemented with: 1000 sx. or ft³

Top of Cement: Surface Method Determined: Circ. cement
Intermediate Casing

Hole Size: 12-1/4" Casing Size: 9-5/8, 40/36#, @ 4500'
Cemented with: 1700 sx. or ft³

Top of Cement: Surface Method Determined: Circ. cement
Production Casing

Hole Size: 8-3/4" Casing Size: 7", 29#, @ 12000'
Cemented with: 2050 sx. or ft³

Top of Cement: 6760' Method Determined: Temp Survey
Total Depth: 13627' 5" liner from 11705 to 13627'

Injection Interval (Perforated)
4541 feet to 5734'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 2-7/8" Lining Material: IPC

Type of Packer: 7" IPC

Packer Setting Depth: 4500'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? No
- If no, for what purpose was the well originally drilled? Wolfcamp completion

2. Name of the Injection Formation: Bell Canyon and Cherry Canyon formation.

3. Name of Field or Pool (if applicable): Cotton Draw Delaware South

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.

Wolfcamp: 12882-12984, CIBP @ 11584, 2 sx cmt. Bone Spring: 8725-9445,
Lower Brushy Canyon: 7620-7671, sqzd w/150 sx C., CIBP @ 7570 & 35' cmt.

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

Formation tops: Rustler 576'; Lamar 4296'; Ramsey 4317'; Blue Marker 5746'; Cherry Canyon 5323'; Brushy Canyon 6950'

DEVON ENERGY PRODUCTION COMPANY LP

Well Name: Cotton Draw Unit 81		Field: Cotton Draw Delaware South	
Location: Sec 2-T25S-R31E; 1650' FSL & 660' FWL		County: Eddy	State: NM
Elevation: 3455' KB; 3437' GL; 18' KB-GL		Spud Date: 3/1/97	Compl Date: 6/11/97
API#: 30-015-29345	Prepared by: Crowdis/Slack	Date: 7/13/2010	Rev:

PROPOSED SWD SCHEMAT

17-1/2" Hole

13-3/8", 48# & 54.5#, H40 & K55, @ 697'

Cmt'd w/ 700 sx. Topped out w/ 300 sx.
Cement to surface

12-1/4" Hole

9-5/8", 40# & 36#, J55, N80, S95, @ 4500'

Cmt'd w/ 1700 sx. Cement circulated.

Proposed Inj Interval

Bell Canyon Formation

4541-4650; 4690-4752

4940-5057; 5110-5542

5187-5250

Proposed Inj Interval

Cherry Canyon Formation

5324-5365; 5400-5420;

5502-5540; 5702-5734

Proposed tubing & packer

IPC Packer @ 4500'

IPC 2-7/8" tubing

Proposed: Raise TOC

1. Shoot sqz perms @ 6000'
2. Set cmt retainer @ 5900', cap w/35' cmt
3. Raise TOC to ~4250' on 9-5/8" X 7" annulus

TOC @ 6760'-Temp Survey (per drlg rpt 4/25/97)

LOWER BRUSHY CANYON (7/6/97)

7620' - 7671'

7/8/97: Acidized & Frac'd

8/11/97: 20 bq, 302 bw, 32 mcf

1/22/05: Sqzd w/150 sks "C" Cement

1/25/05: Tst'd csg to 500 psi, 30 min. Ok.

BONE SPRING (1/18/05)

8725' - 8768' 2/2/05-acidized w/4000 gals 7.5% HCl

9428' - 9445' 1/19/05-acidized w/1500 gals 7.5% HCl

1/26/05-frac'd w/130,290#

35' cement

CIBP @ 7570' (6/29/10)

Capped w/ 2 sx cement

CIBP @ 11584' (7/4/97)

5" Liner top tagged @ 11705'

8-3/4" Hole

7", 29#, P110, LTC, @ 12000'

Cmt'd 500 sx 1st stg; 1550 sx 2nd stg

WOLFCAMP

(6/8/97)

12882' - 12984'

Wet

6-1/8" Hole

5", 18#, @ 13627'

Cmt'd w/ 350 sx

TD @ 13627'

DEVON ENERGY PRODUCTION COMPANY LP

Well Name: Cotton Draw Unit 81		Field: Cotton Draw Delaware South	
Location: Sec 2-T25S-R31E; 1650' FSL & 660' FWL		County: Eddy	State: NM
Elevation: 3455' KB; 3437' GL; 18' KB-GL		Spud Date: 3/1/97	Compl Date: 6/11/97
API#: 30-015-29345	Prepared by: Ronnie Slack	Date: 7/13/2010	Rev:

CURRENT SCHEMAT

17-1/2" Hole

13-3/8", 48# & 54.5#, H40 & K55, @ 697'

Cmt'd w/ 700 sx. Topped out w/ 300 sx.
Cement to surface

12-1/4" Hole

9-5/8", 40# & 36#, J55,N80,S95, @ 4500'

Cmt'd w/ 1700 sx. Cement circulated.

237 Jts of 2-7/8" tubing w/SN in hole (6/30/10)

TOC @ 6760'-Temp Survey (per drlg rpt 4/25/97) →

LOWER BRUSHY CANYON (7/6/97)

7620' - 7671'

7/8/97: Acidized & Frac'd

8/11/97: 20 bo, 302 bw, 32 mcf

1/22/05: Sqzd w/150 sks "C" Cement

1/25/05: Tst'd csq to 500 psi, 30 min. Ok.

35' cement
CIBP @ 7570' (6/29/10)

BONE SPRING (1/18/05)

8725' - 8768' 2/2/05-acidized w/4000 gals 7.5% HCl

9428' - 9445' 1/19/05-acidized w/1500 gals 7.5% HCl

1/26/05-fracd w/130,290#

Capped w/ 2 sx cement
CIBP @ 11584' (7/4/97)

5" Liner top tagged @ 11705'

8-3/4" Hole

7", 29#, P110, LTC, @ 12000'

Cmt'd 500 sx 1st stage

Cmt'd w/ 1550 sx 2nd stage

WOLFCAMP (6/8/97)

12882' - 12984' Wet

6-1/8" Hole

5", 18#, @ 13627'

Cmt'd w/ 350 sx

TD @ 13627'

Proposed Injection Well: Cotton Draw Unit #81

API: NA

APPLICATION FOR INJECTION

Form C-108 Section III

III. Well Data--On Injection Well

A. Injection Well Information

- (1) Lease Cotton Draw Unit
Well No #81
Location 1650' FSL & 660' FWL
Sec,Twn,Rnge Sec 2-T25S-R31E
Cnty, State Eddy County, NM
- (2) Casing 13-3/8", 48# & 54.5#, H40 & K55, @ 697'
Cmt'd w/700 sx, topped out w/300 sx to surface

9-5/8", 40# & 36#, J55 & N80 & S95, @ 4500'
Cmt'd w/ 1700 sx to surface

7", 29#, P110, LTC, @ 12000'
Cmt'd w/2050 sx. TOC @ 6760' rpt'd by temp survey

5" liner from 11705' to 13627'
Cmt'd w/350 sx
- (3) Injection Tubing 2-7/8", 6.5#, IPC Injection tubing
- (4) Packer 7" IPC Packer @ 4500'

B. Other Well Information

- (1) Injection Formation: Bell Canyon and Cherry Canyon formations
Field Name: Cotton Draw Delaware South
- (2) Injection Interval: Bell Canyon: 4541-4650; 4690-4752; 4940-5057; 5110-5542; 5187-5250
Cherry Canyon: 5324-5365; 5400-5420; 5502-5540; 5702-5734

- (3) Original Purpose of Wellbore:

Oil & Gas producer

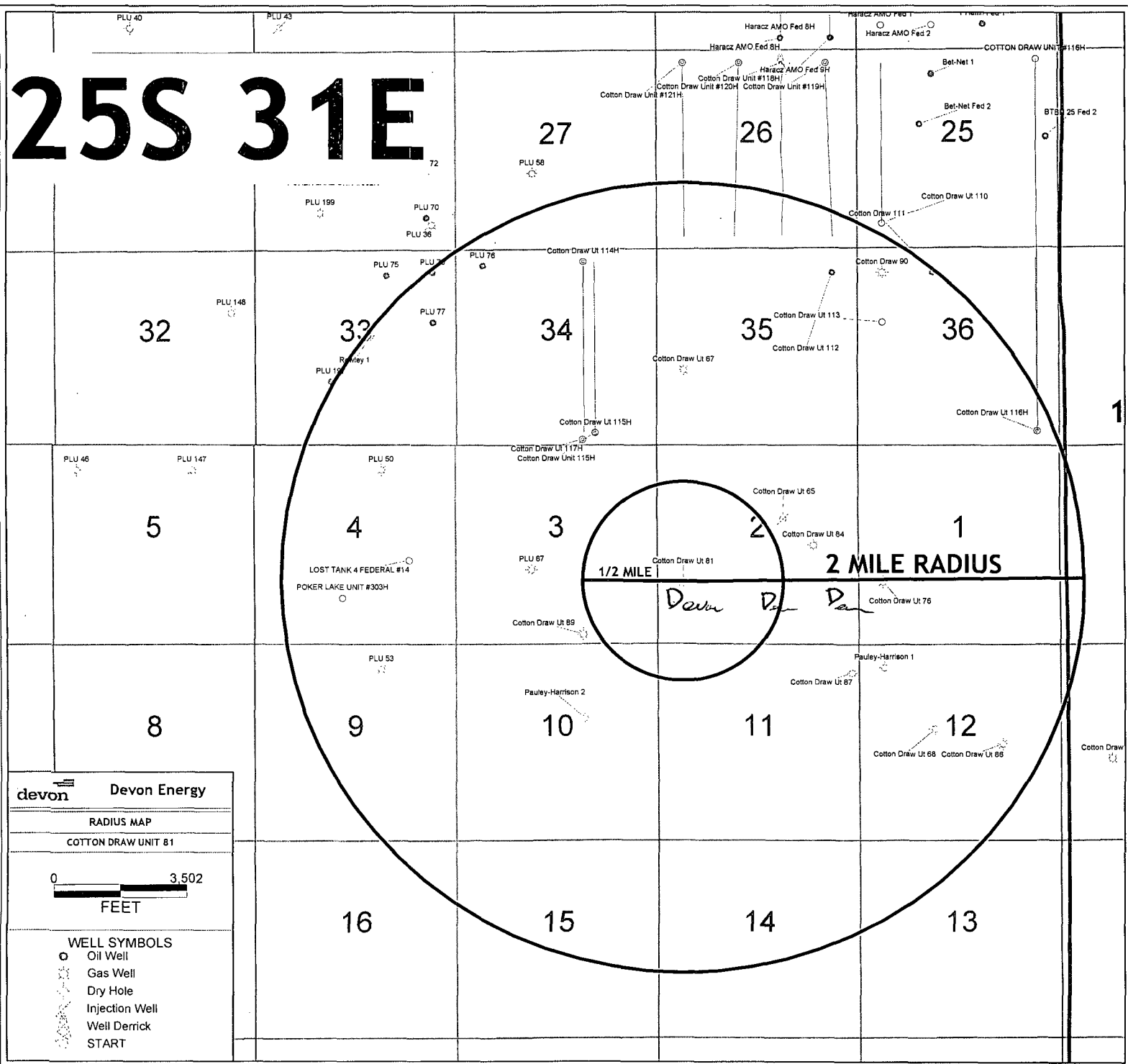
- (4) Other perforated intervals:

Wolfcamp: 12882-12984, CIBP @ 11584, 2 sx cmt. Bone Spring: 8725-9445,
Lower Brushy Canyon: 7620-7671, sqzd w/150 sx C., CIBP @ 7570 & 35' cmt.

- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well if any.

Formation tops: Rustler 576'; Lamar 4296'; Ramsey 4317'; Blue Marker 5746'; Cherry Canyon 5323'; Brushy Canyon 6950'

25S 31E



C108 ITEM VI--Well Tabulation in 1/2 Mile Review Area																		
Devon Energy Production Company, LP																		
Proposed Disposal Well: Cotton Draw Unit #81																		
Operator	Well Name	API NO	County	Surf Location	Sec	Twn	Rnge	Type	Status	Spud Date	Comp Date	TD	PBTD	Comp Zone	Comp Interval-Ft	Casing Program	Cement / TOC	Comment
	Cotton Draw Unit 81 (proposed well for swd)	30-015-29345	Eddy	1650' FSL 660' FWL	2	25S	31E	Oil	TA	3/1/97	6/11/97	13627	7535	Brushy Canyon Bone Spring Wolfcamp (wet)	7620-7671 (below cfbp) 8725-9445 (below cfbp) 12882-12984 (below cfbp)	13-3/8" , 48/54.5#, @ 697' 9-5/8", 40/36#, @ 4500' 7", 29# , @ 12000' 5", 18# liner, 11705'-13627'	700 sx / surface 1700 sx / surface 2050 sx / 6760' -temp survey liner top	Proposing to shoot sqz holes @ 6000' and raise TOC to 4250' on 7" casing.
Devon Energy Prod Co LP																		

Proposed Injection Well: Cotton Draw Unit #81
APPLICATION FOR INJECTION
Form C-108 Section VII to XII

VII Attach data on the proposed operation, including:

- (1) Proposed average injection rate: 3000 BWPD
Proposed maximum injection rate: 5000 BWPD
- (2) The system will be a closed system.
- (3) Proposed average injection pressure: 750 psi
Proposed max injection pressure: 1050 psi
- (4) The injection fluid will be produced water from the Bone Spring and Delaware formation that will be injected into the Delaware Bell Canyon and Cherry Canyon formations.
- (5) A representative water analysis is attached for sourced water from the Bone Spring and Delaware formations.

VIII Geologic Injection Zone Data

The injection zone is the Bell Canyon from 4541' to 5250' and Cherry Canyon from 5324' to 5734'. The gross injection interval is 1119' thick. The Bell Canyon and Cherry Canyon formations are Permian aged sandstones. The average depth to fresh water is 300' in this area.

IX Proposed Stimulation

Based on injectivity results this interval could be stimulated with ~3000 gals 15% HCl and 160,000# of sand.

X Log Data

Logs for the Cotton Draw Unit #81 (30-015-29345) have been submitted and are available on the OCD website. We have not been able to locate the Temperature Survey log run per drilling report dated 7/6/97, that had indicated TOC @ 6760'. Devon is planning to raise TOC from ~6000' to ~4250' on the 7" casing annulus and a CBL will be run to verify cement placement. See attached proposed wellbore schemat.

XI Fresh Water Analysis

No fresh water wells were indicated within the vicinity of the proposed disposal well per New Mexico office of the State Engineer web site. The area search is included with this submittal.

XII Geologic / Engineering Statement

An examination of this area has determined there are no open faults or other hydrologic connection between the disposal zone and any underground drinking water.

XIII Proof of Notice

Proof of notice to surface owner, and public legal notification are attached.



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

No records found.

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 1, 2, 3, 4, 9, 10, **Township:** 25S **Range:** 31E
11, 12

Usage Filter:

Use: DOL (72-12-1 DOMESTIC AND LIVESTOCK WATERING)
DOM (72-12-1 DOMESTIC ONE HOUSEHOLD)
STK (72-12-1 LIVESTOCK WATERING)
MUN (MUNICIPAL - CITY OR COUNTY SUPPLIED WATER)



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

No records found.

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 33, 34, 35, 36 **Township:** 24S **Range:** 31E

Usage Filter:

Use: DOL (72-12-1 DOMESTIC AND LIVESTOCK WATERING)
DOM (72-12-1 DOMESTIC ONE HOUSEHOLD)
STK (72-12-1 LIVESTOCK WATERING)
MUN (MUNICIPAL - CITY OR COUNTY SUPPLIED WATER)

WATER ANALYSIS
Bone Spring Formation
Chimayo 16 ST #1

North Permian Basin Region

P.O. Box 740

Sundown, TX 79372-0740

(806) 229-8121

Lab Team Leader - Sheila Hernandez

(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	492168
Lease/Platform:	CHIMAYO UNIT	Analysis ID #:	100662
Entity (or well #):	16-1	Analysis Cost:	\$90.00
Formation:	Bone Spring		
Sample Point:	HEATER DUMP		

Summary		Analysis of Sample 492168 @ 75 °F							
Sampling Date:	05/12/10	Anions		mg/l	meq/l	Cations		mg/l	meq/l
Analysis Date:	05/18/10	Chloride:	142827.0		4028.63	Sodium:	76546.4		3329.58
Analyst:	STACEY SMITH	Bicarbonate:	73.0		1.2	Magnesium:	1589.0		130.72
TDS (mg/l or g/m3):	235300.4	Carbonate:	0.0		0.	Calcium:	10332.0		515.57
Density (g/cm3, tonne/m3):	1.157	Sulfate:	1021.0		21.26	Strontium:	1192.0		27.21
Anion/Cation Ratio:	1	Phosphate:				Barium:	2.5		0.04
		Borate:				Iron:	379.0		13.7
		Silicate:				Potassium:	1334.0		34.12
Carbon Dioxide:	1400 PPM	Hydrogen Sulfide:			17 PPM	Aluminum:			
Oxygen:		pH at time of sampling:			6.5	Chromium:			
Comments:		pH at time of analysis:				Copper:			
		pH used in Calculation:			6.5	Lead:			
						Manganese:	4.500		0.16
						Nickel:			

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.18	1.40	-0.08	0.00	-0.03	0.00	0.58	321.11	1.00	1.12	0.14
100	0	0.24	1.95	-0.16	0.00	-0.05	0.00	0.55	310.50	0.80	1.12	0.18
120	0	0.30	2.51	-0.23	0.00	-0.04	0.00	0.54	304.91	0.62	1.12	0.21
140	0	0.35	3.35	-0.29	0.00	-0.01	0.00	0.53	303.52	0.47	0.84	0.25

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

WATER ANALYSIS
Delaware Formation
Apache 25 Fed 6

3821

P. 03

P. 3

L
M
S

Laboratory Services, Inc.
4016 Fiesta Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

Water Analysis

COMPANY Devon Energy

SAMPLE Apache 25-6

SAMPLED BY

DATE TAKEN

REMARKS

Barium as Ba	0
Carbonate alkalinity PPM	0
Bicarbonate alkalinity PPM	80
pH at Lab	6.05
Specific Gravity @ 60°F	1.195
Magnesium as Mg	59,566
Total Hardness as CaCO ₃	102,700
Chlorides as Cl	192,032
Sulfate as SO ₄	200
Iron as Fe	33
Potassium	85
Hydrogen Sulfide	0
Rw	0.046 @ 23° C
Total Dissolved Solids	295,500
Calcium as Ca	43,134
Nitrate	35

Results reported as Parts per Million unless stated

Langelier Saturation Index 0.65

Analysis by: Vickie Biggs
Date: 3/5/04

Section XIV--Proof of Notice to Surface Land Owner
Devon Energy Prod Co LP
C108 Application For Injection
Proposed Well: Cotton Draw Unit #81

Proof of Notice to Surface Land Owner of well location site.

Bureau of Land Management
Carlsbad Field Office
620 East Greene Street
Carlsbad Field, NM 88220

Certified receipt No.
7009 3410 0000 3533 4983

A copy of this application has been mailed to the above surface land owner by certified mail, pertaining to Devon Energy's application for salt water disposal in the Cotton Draw Unit #81.

Date Mailed: 7-27-10

Signature: Ronnie Slack

Date: 7-27-10

Ronnie Slack, Operations Technician
Devon Energy Production Co., L.P.
20 N. Broadway, Suite 1500
Oklahoma City, OK 73102

Section XIV--Proof of Notice to Leasehold Operators
Devon Energy Prod Co LP
C108 Application For Injection
Proposed Well: Cotton Draw Unit #81

Proof of Notice to Leasehold Operators within 1/2 mile of Cotton Draw Unit #1

XTO Energy, Inc.
810 Houston Street
Fort Worth, Texas 76102-6298

Certified receipt No.
7009 3410 0000 3533 4990

A copy of this application has been mailed to the above leasehold operator by certified mail, pertaining to Devon Energy's application for salt water disposal in the Cotton Draw Unit #81

Date Mailed: 7-27-10

Signature: Ronni Slack

Date: 7-27-10

Ronnie Slack, Operations Technician
Devon Energy Production Co., L.P.
20 N. Broadway, Suite 1500
Oklahoma City, OK 73102

Affidavit of Publication

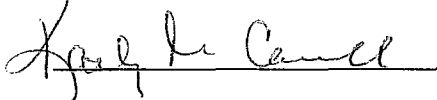
State of New Mexico,
County of Eddy, ss.

Kathy McCarroll, being first duly sworn,
on oath says:

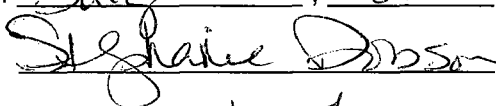
That she is the Classified Supervisor of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

July 2 2010

That the cost of publication is **\$56.74** and that payment thereof has been made and will be assessed as court costs.



Subscribed and sworn to before me this

9th day of July, 2010


My commission Expires on 1/25/2014

Notary Public

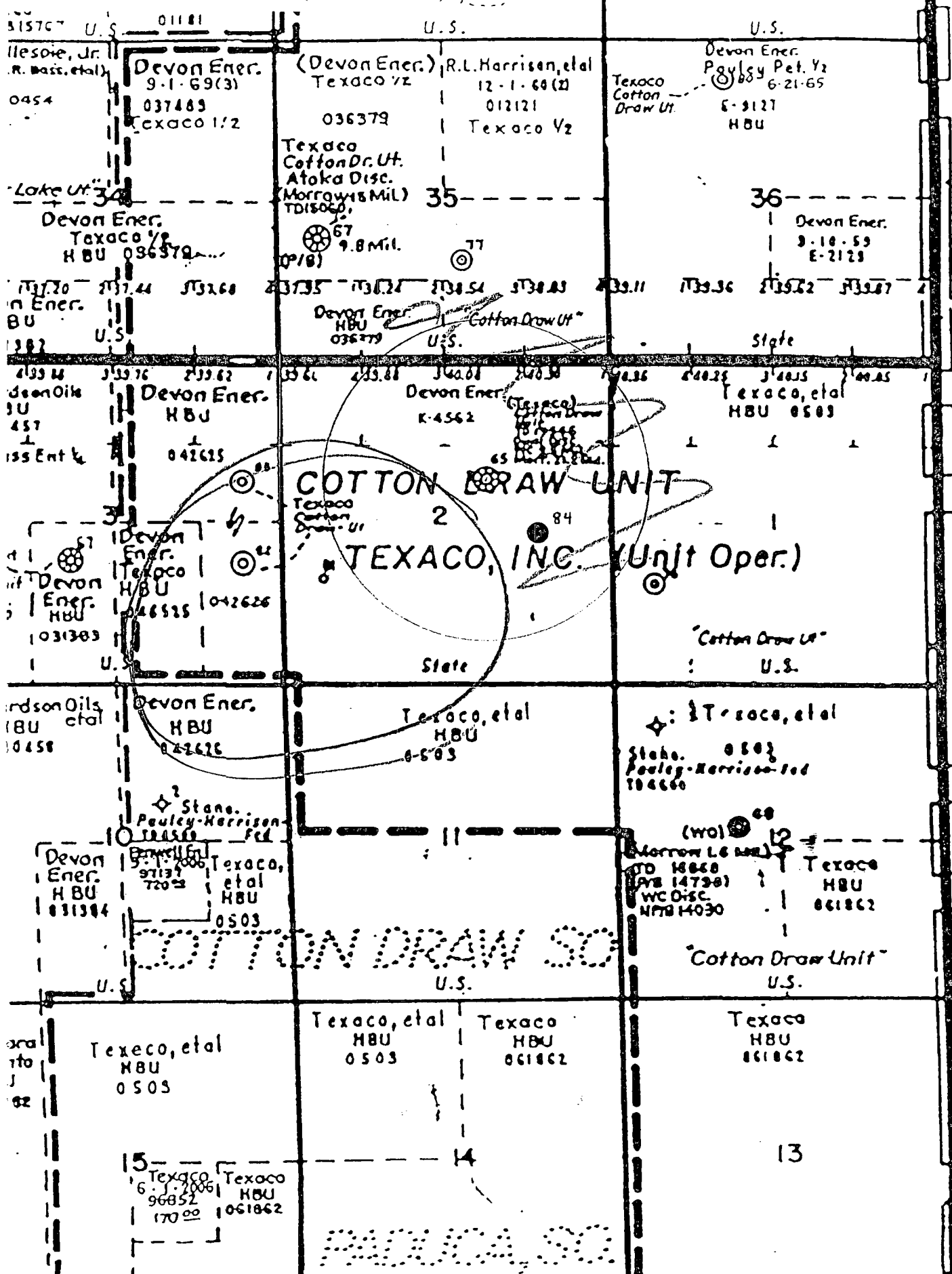


July 2, 2010

Legal Notice

Devon Energy Production Company, L.P., 20 North Broadway, Oklahoma City, OK 73102-8260 has filed form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well, the Cotton Draw Unit #81, is located 1650' FSL & 660' FWL, Section 2, Township 25 South, Range 31 East, in Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Bone Spring formation and Delaware formation. The disposal water will be injected into the Bell Canyon formation at a depth from 4541' to 5250' and the Cherry Canyon formation at a depth from 5324' to 5734', at a maximum surface pressure of 1050 psi and a maximum rate of 5000 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within (15) days of this notice. Any interested party with questions or comments may contact Jim Cromer at Devon Energy Corporation, 20 North Broadway, Oklahoma City, OK 73102-8260, or call (405) 228-4464.

Letter from
H.



Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Thursday, September 30, 2010 9:32 AM
To: 'Slack, Ronnie'
Cc: 'Wesley_Ingram@blm.gov'
Subject: Disposal application from Devon: CDU #81 30-015-29345 Bell Canyon and Cherry Canyon

Hello Ronnie:

Would you please send a notice to the nearest Potash lessee or send notice and obtain a waiver? The R-111-P Potash area is within the ½ mile AOR of this well.

I saw in another nearby SWD application that there are some Fresh Water Supply wells in this area? If these are really nearby and are from the fresh water sands – please obtain a sample and send in a water analysis (I won't hold this SWD permit up waiting on the analysis).

Otherwise all looks OK from my end.

Regards,

William V Jones, P.E.
Engineering, Oil Conservation Division
1220 South St. Francis Drive, Santa Fe, NM 87505
Tel 505.476.3448 ~ Fax 505.476.3462





Jones, William V., EMNRD

From: McCurdy, Sam [Sam.McCurdy@dvn.com]
Sent: Monday, October 11, 2010 8:51 AM
To: Jones, William V., EMNRD
Cc: Slack, Ronnie
Subject: Disposal application from Devon: CDU #81 30-015-29345 Bell Canyon and Cherry Canyon

Mr. Jones,

With reference to an e-mail sent by you to Ronnie Slack on Thursday, September 30, 2010, it was requested that Devon send notice to and obtain a waiver from the nearest Potash lessee within the R-111-P boundary which was within a ½ mile AOR of the captioned SWD. Records reflect that there is no Potash lessee within the ½ mile AOR of this well and the minerals which are in question are owned by the state of New Mexico.

Attached hereto please find three (3) letters which have been mailed to the following serving as proper notice: 1.) the state of New Mexico, the owner of the minerals, 2.) the Bureau of Land Management, the surface owner at the SWD location and 3.) XTO Energy, Inc. the leasehold interest owner within the ½ mile radius. Included with these cover letters was a copy of the NMOCD's Application for Authorization to Inject for the captioned well.

[Cotton Draw Unit 81_notification to NM State Land Office.pdf](#) [Coverletters_CDU81_SWD applications.pdf](#)

If you have any questions or if any additional information is required please feel free to contact me via e-mail or by phone at (405) 228-2406.

Sincerely,

Sam McCurdy
Landman
Permian Basin New Mexico

Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102
405 228 2406 Office
405 627 6015 Cell
Sam.McCurdy@dvn.com

Confidentiality Warning: This message and any attachments are intended only for the use of the intended recipient(s), are confidential, and may be privileged. If you are not the intended recipient, you are hereby notified that any review, retransmission, conversion to hard copy, copying, circulation or other use of all or any portion of this message and any attachments is strictly prohibited. If you are not the intended recipient, please notify the sender immediately by return e-mail, and delete this message and any attachments from your system.



Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102-8260

405 235 3611 Phone
www.devonenergy.com

October 7, 2010

New Mexico State Land Office
Attn: Jeff Albers
P.O. Box 1148
Santa Fe, New Mexico 87504

RE: Form C-108, Application for Authorization to Inject
Cotton Draw Unit #81; API# 30-015-29345
Eddy County, NM
Section 2, T25S, R31E

Dear Jeff:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject. Devon's application proposes to convert the Cotton Draw Unit #81 to salt water disposal. Produced waters will be injected into the Delaware Bell Canyon interval from 4541' to 5250' and Cherry Canyon interval from 5324' to 5734'.

We are notifying you because you have been identified as a subsurface mineral owner. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Jim Cromer at (405)-228-4464 or myself at (405)-552-4615.

Sincerely,

Ronnie Slack
Engineering Technician

RS/rs

Enclosure

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:

New Mexico State Land Office
Attn: Jeff Albers
P.O. Box 1148
Santa Fe, New Mexico 87504

2. Article Number
(Transfer from service label)

7008 1830 0003 1984 5171

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X☐ Agent
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes



Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102-8260

405 235 3611 Phone
www.devonenergy.com

July 27, 2010

Bureau of Land Management
Carlsbad Field Office
620 East Greene Street
Carlsbad Field, NM 88220

RE: Form C-108, Application for Authorization to Inject
Cotton Draw Unit #81; API# 30-015-29345
Eddy County, NM
Section 25, T22S, R30E

Dear Sir or Madam:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject.

Devon's application proposes to convert the Cotton Draw Unit #81 to salt water disposal. Produced waters will be injected into the Delaware Bell Canyon interval from 4541' to 5250' and Cherry Canyon interval from 5324' to 5734'.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the well site surface land owner. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Jim Cromer at (405)-228-4464 or myself at (405)-552-4615

Sincerely,

A handwritten signature in cursive script that reads "Ronnie Slack".

Ronnie Slack
Operations Technician

RS/rs
Enclosure



Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102-8260

405 235 3611 Phone
www.devonenergy.com

July 27, 2010

XTO Energy, Inc
810 Houston Street
Fort Worth, Texas 76102-6298

RE: Form C-108, Application for Authorization to Inject
Cotton Draw Unit #81; API# 30-015-29345
Eddy County, NM
Section 25, T22S, R30E

Dear Sir or Madam:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject.

Devon's application proposes to convert the Cotton Draw Unit #81 to salt water disposal. Produced waters will be injected into the Delaware Bell Canyon interval from 4541' to 5250' and Cherry Canyon interval from 5324' to 5734'.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as a leasehold operator. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Jim Cromer at (405)-228-4464 or myself at (405)-552-4615.

Sincerely,

A handwritten signature in cursive script that reads "Ronnie Slack".

Ronnie Slack
Operations Technician

RS/rs
Enclosure

- XI.** Freshwater Wells within the Area of Review
- Paduca Delaware Waterflood #2 WSW - Producing, See Water Analysis
 - Paduca Delaware Waterflood #5 WSW - Shut In
 - Paduca Delaware Waterflood #6 WSW - Shut In
 - Paduca Delaware Waterflood #8 WSW - Shut In
 - Paduca Delaware Waterflood #9 WSW - Producing, See Water Analysis
- XII.** After examining available geologic and engineering data, Texaco finds no evidence of open faults, or other hydrologic connection, between the disposal zone and any underground source of drinking water.
- XIII.** "Proof of Notice"
- XIV.** Certification

Injection Permit Checklist (08/27/2010)

WFX

PMX

SWD 1248

Permit Date

UIC Qtr

Wells

Well Name(s):

Cotton Dew UNIT #81

API Num:

30-015-29345

Spud Date:

3/1/97

New/Old:

N

(UIC primacy March 7, 1982)

Footages

1650 FSL/660 FWL

Unit

L

Sec

23

Tsp

235

Rge

31E

County

EDDY

General Location:

MIDDLE of Dal Basin

Operator:

Pason Energy Production Company, LP

Contact

Ronnin SLATK

OGRID:

637

RULE 5.9 Compliance (Wells)

2/1798

(Finan Assur)

OK

IS 5.9 OK?

OK

Well File Reviewed

Current Status:

TDA

Planned Work to Well:

Raise CMT TOP, inject

Diagrams: Before Conversion

After Conversion

Elogs in Imaging File:

Well Details:

SIZES

Hole.....Pipe

Setting

Depths

Stage

Tool

Cement

Sx or Cf

Determination

Method

New Existing Surface

17 1/2 13 1/8

697

-

1000 SX

CIRC

New Existing Interm

12 1/4 9 5/8

4,500

-

1700 SX

CIRC

New Existing LongSt

8 3/4 7

12,000

-

2050 SX

6760 TS

New Existing Liner

5"

11705-13627

-

-

-

New Existing OpenHole

Depths/Formations:

Depths, Ft.

Formation

Tops?

Formation(s) Above

4317

Ramsay

✓

Injection TOP:

4541-5250

Bell C.

Max. PSI

908

OpenHole

Perfs

✓

Injection BOTTOM:

5324-5734

Chary C.

Tubing Size

27/8

Packer Depth

4500'

Formation(s) Below

6950

Bunaly C.

✓

Capitan Reef?

(Potash?)

Noticed?

WIPP?

Noticed?

Salado Top/Bot

Cliff House?

Fresh Water:

Depths:

0-300'

Formation

Wells?

NO

Analysis?

Affirmative Statement

✓

Disposal Fluid Analysis?

Sources:

B.S./Del.

Disposal Interval: Analysis?

Production Potential/Testing:

Evaluated already + another SWD to NE

Notice: Newspaper Date

7/2/10

Surface Owner

BLM

Mineral Owner(s)

RULE 26.7(A) Affected Persons:

X TO

Chary C.

AOR: Maps?

Well List?

Producing in Interval?

NO

Wellbore Diagrams?

-

.....Active Wells

0

Repairs?

Which Wells?

-

.....P&A Wells

0

Repairs?

Which Wells?

-

Questions:

Request Sent

Reply: