

26
 DATE IN 3/19/12 SUSPENSE 4/4/12 ENGINEER WVT LOGGED IN 3.19.12 TYPE SWD APP NO. 120794/1989
 PTCW

ABOVE THIS LINE FOR DIVISION USE ONLY

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



COG 249137

South Craig 10 SWD#1

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.

Jeff Gasch
 Print or Type Name

Jeff Gasch
 Signature

Operations Engineer
 Title

2/23/12
 Date

jgasch@concho.com
 e-mail Address

A-70-265-26E

355-5783
 7/10 PST

Lost Notice



March 15, 2012

New Mexico Oil Conservation Division
Attn: Nick Jaramillo
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Application For Authorization To Inject
South Craig 10 SWD #1
Township 26 South, Range 26 East, N.M.P.M.
Section 10: 660' FNL & 660' FEL
Eddy County, New Mexico

RECEIVED OOD
MAR 16 P 1:55

Dear Mr. Jaramillo:

COG Operating LLC respectfully requests administrative approval for authorization to inject the South Craig 10 SWD #1 well as referenced above. Enclosed, for your review, please find one fully executed original and two copies of the application.

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

Sincerely,

A handwritten signature in dark ink, appearing to read "W. Miller", with a long horizontal flourish extending to the right.

William Miller
Landman

WM/sw
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: 550 West Texas Avenue, Suite 100, Midland, TX 79701
CONTACT PARTY: Jeff Gasch, Operations Engineer PHONE: 432-818-2335
- 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: Jeff Gasch TITLE: Operations Engineer
SIGNATURE: [Signature] DATE: 2/23/12
E-MAIL ADDRESS: jgasch@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 Authority to Inject
South Craig 10 SWD #1
660' FNL & 660' FEL
A-10-26S-26E, Eddy County

COG Operating LLC proposes to re-enter the captioned well, clean out to 5400', squeeze cement the Delaware Sand 1926-1950' and convert it to salt water disposal service into the Delaware Sand from 3551-5383'.

- V. Map is attached.
- VI. No wells penetrate the proposed injection zone within the ½ mile radius area of review.
- VII.
 - 1. Proposed average daily injection rate = 4000 BWPD
Proposed maximum daily injection rate = 7000 BWPD
 - 2. Closed system.
 - 3. Proposed maximum injection pressure = 710 psi
(0.2 psi/ft x 3551 ft)
 - 4. Source of injected water will be Delaware, Bone Spring and Wolfcamp produced water. No compatibility problems are expected. Analyses of Delaware, Bone Spring and Wolfcamp waters from analogous wells are attached. We have numerous Delaware SWD's in the area and we have not encountered any compatibility issues with our Delaware, Bone Spring and Wolfcamp injected waters.
- VIII. The injection zone is the Delaware Sandstone, a fine-grained sandstone from 3551' to 5383'. Any underground water sources will be shallower than 630'.
- IX. The Delaware sand injection interval will be acidized with approximately 24 gals/ft of 7-1/2% HCl acid. If necessary, the injection interval may be fraced with up to 300,000 lbs. of 20/40 mesh sand.
- X. Well logs have benn filed with the Division. A section of the sonic log showing the injection intervals is attached.
- XI. There are no fresh water wells within a mile of the proposed SWD well.
- 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: South Craig 10 SWD #1 (formerly Shewell Federal No. 1)

WELL LOCATION: 660' FNL + 660' FEL A 10 26S 26E
 FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

See attached "Before" and "After"
Wellbore schematics.

WELL CONSTRUCTION DATASurface Casing

Hole Size: 17 1/2" Casing Size: 13 3/8" @ 630'
 Cemented with: 700 sx. or - ft³
 Top of Cement: surface Method Determined: circulated

Intermediate Casing

Hole Size: 11" Casing Size: 8 5/8" @ 1726
 Cemented with: 800 sx. or - ft³
 Top of Cement: surface Method Determined: circulated

Production Casing

Hole Size: 7 7/8" Casing Size: 5 1/2" @ 5500'
 Cemented with: 1075 sx. or - ft³
 Top of Cement: orig: 726' Method Determined: orig: Temp survey
P+A: surface P+A: perf 690' +
 Total Depth: 5500' circulate to surface

Injection Interval

3551' feet to 5383'

(Perforated) or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 2 7/8" Lining Material: IPC or Duoline 20
Type of Packer: 10K nickel plated double grip retrievable
Packer Setting Depth: ± 3500'
Other Type of Tubing/Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? Yes X No

If no, for what purpose was the well originally drilled? Dil and gas.

2. Name of the Injection Formation: Delaware Sand

3. Name of Field or Pool (if applicable): Cottonwood Draw

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. Yes.

See attached wellbore schematics.

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

Overlying: None in immediate area. Delaware 4758-4973' produces 1.6 miles NE.
Underlying: Bone Spring 5650 - 6200' ±

30-015-24469

(Formerly Shewell Fed. 1)

660' FNL, 660' FEL

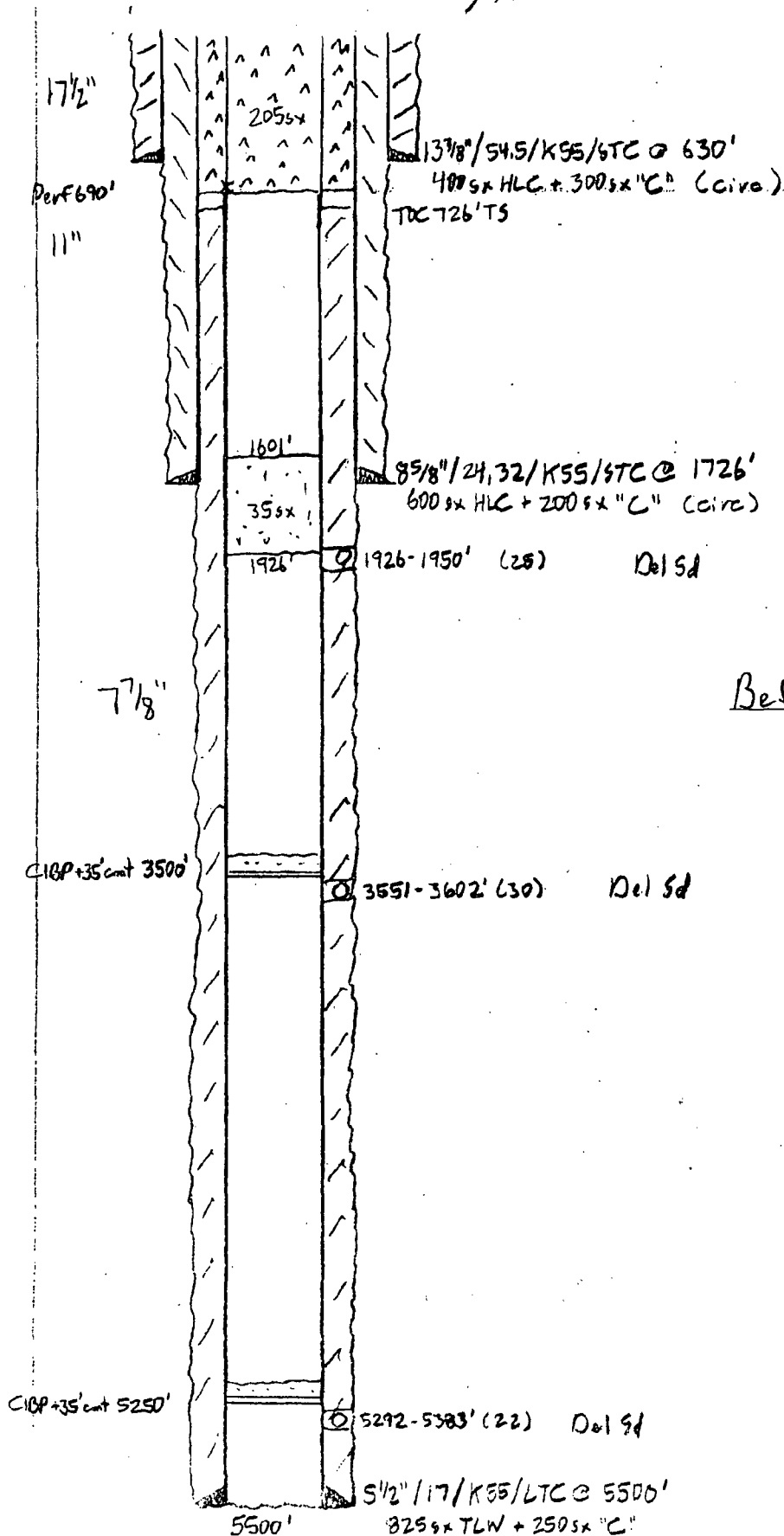
A-10-265-26e

Eddy, Nm

Zero:

KB:

GL: 3345'



Before SWD Conversion

30-015-24469

South Craig 10 SWD No.1

(Formerly Shewell Fed. 1)

660' FNL, 660' FEL

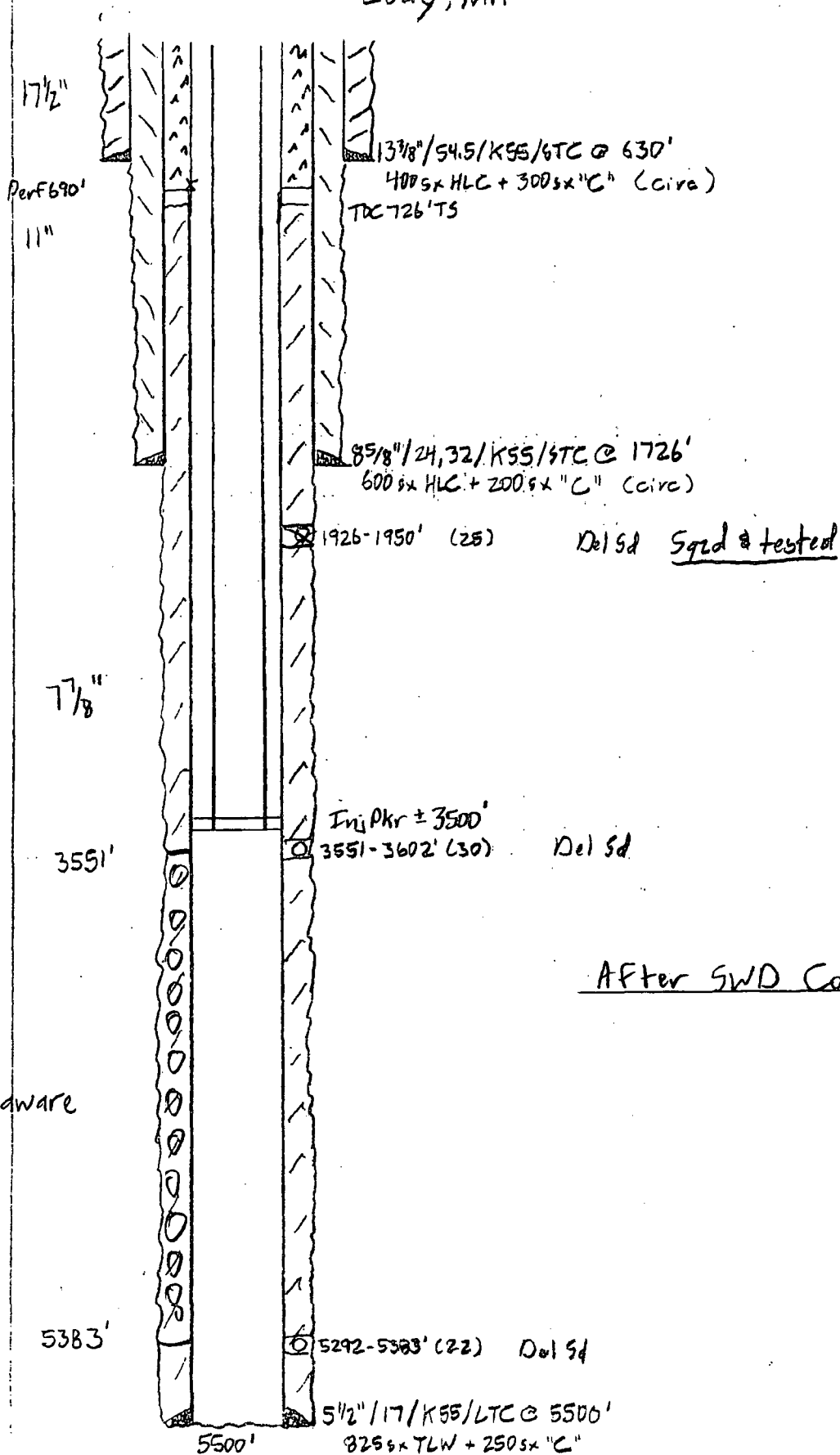
A-10-26s-26e

Eddy, NM

Zero:

KB'

GL: 3345'



V.


MAP

VII.

Water Analysis Produced and Receiving Formation Water

Water Analysis Produced Water

Forwarded by Bill Polk/BJCSERVICES on 02/11/2010 07:56 AM

Analytical Laboratory Report for:	
MARBOB ENERGY CORPORATION	BJ Chemical Services Account Representative: William D Polk

Bone Spring Production Water Analysis

Listed below please find water analysis report from: Sro, State Unit Com Well #2

Lab Test No:	2010106750	Sample Date:	02/01/2010
Specific Gravity:	1.135		
TDS:	207535		
pH:	6.25		
Resistivity:	.095@73F	ohms/M	

Cations:	mg/L	as:
Calcium	3281	(Ca ⁺⁺)
Magnesium	1376	(Mg ⁺⁺)
Sodium	75076	(Na ⁺)
Iron	22.44	(Fe ⁺⁺)
Potassium	1592.0	(K ⁺)
Barium	3.51	(Ba ⁺⁺)
Strontium	975.00	(Sr ⁺⁺)
Manganese	1.21	(Mn ⁺⁺)
Anions:	mg/L	as:
Bicarbonate	708	(HCO ₃ ⁻)
Sulfate	500	(SO ₄ ⁼)
Chloride	124000	(Cl ⁻)
Gases:		
Carbon Dioxide	410	(CO ₂)
Hydrogen Sulfide	0	(H ₂ S)

MARBOB Lab Test
ENERGY No:
CORPORATION 2010106750

DownHole SATTM
Scale Prediction
@ 100 deg. F

2/11/2010

Analytical Laboratory Report for:
COG OPERATING LLC



Account Representative:
William D Polk

Wolfcamp

Production Water Analysis

Listed below please find water analysis report from: Rabbit Hunter 10 State, 2H

Lab Test Number	Sample Date
2011129667	09/28/2011

Specific Gravity:	1.098	
TDS:	149922	
pH:	7.24	
Resistivity:	.08@70F	ohms/M

Cations	mg/L
Calcium as Ca ⁺⁺	1909
Magnesium as Mg ⁺⁺	266
Sodium as Na ⁺	22962
Iron as Fe ⁺⁺	11.00
Potassium as K ⁺	286.0
Barium as Ba ⁺⁺	2.03
Strontium as Sr ⁺⁺	570.00
Manganese as Mn ⁺⁺	0.41

Anions	mg/L
Bicarbonate as HCO ₃ ⁻	366
Sulfate as SO ₄ ⁼	750
Chloride as Cl ⁻	122800

Gases	mg/L
Carbon Dioxide as CO ₂	90
Hydrogen Sulfide as H ₂ S	0.0

Water Analysis Receiving Formation

Analytical Laboratory Report for:

MARBOB ENERGY CORPORATION**Chemical Services**

Account Representative:

Polk, Bill

Delaware Partial Water Analysis

Listed below please find water analysis report from: WILLOW STATE, 2

Lab Test No: 2008125125

Sample Date:

06/24/2008

Cations:	mg/L	as:
Calcium	30900.00	(Ca ⁺⁺)
Magnesium	4910.00	(Mg ⁺⁺)
Sodium	60300	(Na ⁺)
Iron	23.00	(Fe ⁺⁺)
Potassium	1260.0	(K ⁺)
Barium	1.76	(Ba ⁺⁺)
Strontium	981.00	(Sr ⁺⁺)
Manganese	10.50	(Mn ⁺⁺)
Anions:	mg/L	as:
Sulfate	0	(SO ₄ ⁻)
Chloride	229000	(Cl ⁻)
Gases:		
Carbon Dioxide		(CO ₂)
Hydrogen Sulfide		(H ₂ S)



New Mexico Office of the State Engineer

Point of Diversion by Location

(with Owner Information)

(acre ft per annum)					(quarters are 1=NW 2=NE 3=SW 4=SE)					(quarters are smallest to largest) (NAD83 UTM in meters)				
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Grant	Source	q q q	6416 4	Sec	Tws	Rng	X Y
<u>C 01887</u>		STK		3 TRY-Y RANCH	ED	<u>C 01887</u>		Shallow	4 4 2	15	26S	26E		568614 3545497*
<u>C 01888</u>		STK		3 TRY-Y RANCH	ED	<u>C 01888</u>			3 2 3	15	26S	26E		567613 3545063*
<u>C 02439</u>		STK		3 DORIS & OWEN CARLETON	ED	<u>C 02439</u>			2 4 2	15	26S	26E		568614 3545697*

Record Count: 3

PLSS Search:

Section(s): 2, 3, 4, 9, 10, Township: 26S Range: 26E
11, 14, 15, 16

Sorted by: File Number

All greater than 1 mile away...

*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.

4/13/10 12:51 PM

Page 1 of 1

POINT OF DIVERSION BY LOCATION

X.

**Sonic Log Across
Proposed Delaware
Sand Injection Interval**

COUNTY <u>EDDY, N.M.</u> FIELD <u>WILDCAT</u> LOCATION <u>SHEWELL FEDERAL #1</u> WELL <u>SHEWELL FEDERAL #1</u> COMPANY <u>EXXON CO. U.S.A.</u>	COMPANY <u>EXXON COMPANY U.S.A.</u> WELL <u>SHEWELL FEDERAL #1</u> FIELD <u>WILDCAT</u> COUNTY <u>EDDY</u> STATE <u>NEW MEXICO</u> LOCATION <u>660' FNL & 660' FEL,</u> API SERIAL NO. <u>10</u> SEC. <u>9</u> RANGE <u>26-E</u> Other Services: <u>CNL/LDT NGT, EPT CNL/LDT/EPT DLL/MSFL</u> Permanent Datum: <u>G.L.</u> Elev.: <u>3345</u> Log Measured From <u>K.B.</u> 9 Ft. Above Perm. Datum Drilling Measured From <u>K.B.</u> Elev.: <u>3354</u> <u>D.F. 3353</u> <u>G.L. 3345</u>
---	--

Date	5-11-83
Run No.	ONE
Depth-Driller	5500
Depth-Logger (Schl.)	5502
Btm. Log Interval	5490
Top Log Interval	1700
Casing-Driller	8 5/8@ 1726 @
Casing-Logger	1727
Bit Size	7 7/8
Type Fluid in Hole	CUT BRINE WATER
Dens.	9.0
Visc.	32
pH	11
Fluid Loss	ml
Source of Sample	FLOWLINE
Rm @ Meas. Temp.	.072 @ 73 °F @ °F @ °F
Rmf @ Meas. Temp.	.072 @ 73 °F @ °F @ °F
Rmc @ Meas. Temp.	@ °F @ °F @ °F
Source: Rmf Rmc	M
Rm @ BHT	.057 @ 106 °F @ °F @ °F
Circulation Stopped	1900 5-10
Logger on Bottom	0000 5-11
Max. Rec. Temp.	106 °F °F °F
Equip.	8215 RSWL
Location	
Recorded By	SEACH
Witnessed By	SCHEPEL/TAYLOR

The well name, location and borehole reference data were furnished by the customer.

SCALE CHANGES		LOGGING DATA		REMARKS
Type Log	Depth	Scale Up Hole	Scale	

EQUIPMENT DATA		CALIBRATION DATA	
Run No.	ONE	Service Order No.	399317
Fluid Level			
Sonic Panel No.	1557		
Sonic Cart No.	1616		
Sonic Sonde No.	1700		
Mem. Panel No.	CSU		
G.R. Cart. No.	3445		
G.R. Panel No.	679		
Caliper No.	3410		
TTR No.			
Centralizers: No.	2		
Type	CMEZ		
Standoffs: No.			
Type			
Time Const.-Sec.			
Speed - F.P.M.			

Schlumberger

BOREHOLE COMPENSATED
SONIC LOG

COUNTY	EDDY, N.M.
FIELD	WILDCAT
WELL	SHEWELL FEDERAL #1
COMPANY	EXXON CO. U.S.A.
LOCATION	660' FNL & 660' FEL,
API SERIAL NO.	10
SEC.	26-E
RANGE	26-E
Other Services:	CNL/LDT NGT, EPT CNL/LDT/EPT DLL/MSFL

Permanent Datum:	G.L.	3345
Log Measured From	K.B.	9
Drilling Measured From	K.B.	
Elev.: K.B.	3354	
D.F.	3353	
G.L.	3345	

Date	5-11-83
Run No.	ONE
Depth-Driller	5500
Depth-Logger (Schl.)	5502
Btm. Log Interval	5490
Top Log Interval	1700
Casing-Driller	8 5/8@ 1726
Casing-Logger	1727
Bit Size	7 7/8
Type Fluid in Hole	CUT BRINE WATER
Dens. Visc.	9.0 32
pH	11
Fluid Loss	ml
Source of Sample	FLOWLINE
Rm @ Meas. Temp.	.072 @ 73°F
Rmf @ Meas. Temp.	.072 @ 73°F
Rmc @ Meas. Temp.	@ °F
Source: Rmf Rmc	M
Rm @ BHT	.057 @ 106°F
Circulation Stopped	1900 5-10
Logger on Bottom	0000 5-11
Max. Rec. Temp.	106 °F
Equip. Location	8215 RSWL
Recorded by	SEACH
Witnessed by	SCHEPEL/TAYLOR

Confidential

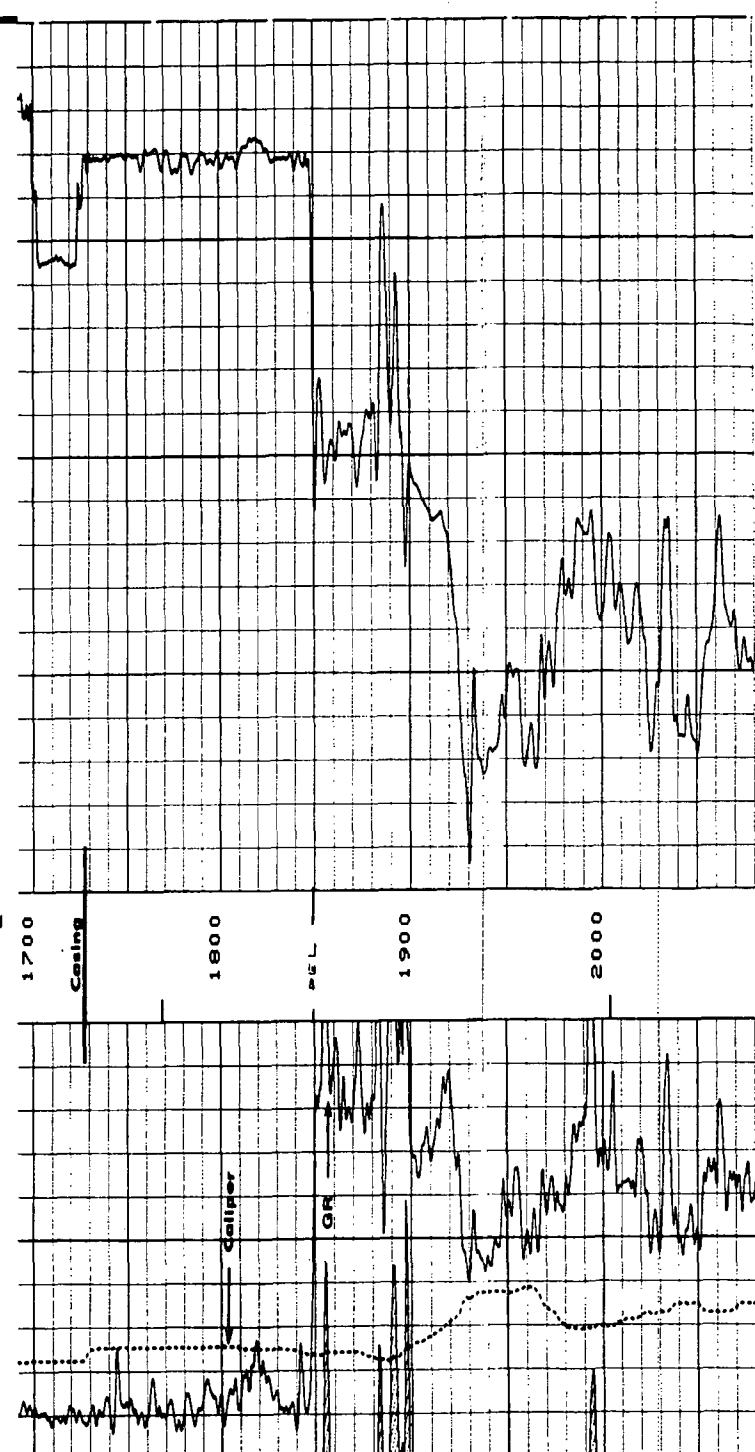
The well name, location and borehole reference data were furnished by the customer.

Run No.	ONE	Scale Up Hole	Scale Down Hole
Service Order No.	399317	Type Log	Depth
Fluid Level		Depth	Scale
EQUIPMENT DATA		LOGGING DATA	
Sonic Panel No.	1557	Parolity Selectors	Depth
Sonic Card No.	1616	Δm	Δf
Sonic Sende No.	1700	Cp	Scale
Mem. Panel No.	CSU	From	To
G.R. Card No.	3445		
G.R. Panel No.	679		
Caliper No.	3410		
TRR No.	2		
Centralizers No.	CMEZ		
Standoffs No.			
Type			
Time Const. Sec.			
Speed - F.P.M.			
CALIBRATION DATA			
GR	SEE CAL		
BKG. CPS	FILM		
Source CPS			
Tc Sec			
Velocity (ft/sec)	Interval Transit Time (microseconds per foot)		
	1,000,000		

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretation, and we therefore, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by our customers. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

GR	100.00	GR <GAPI>	200.00
CALIBRATION	6.0000	CALIBRATION	16.0000
GR	0.0	GR <GAPI>	100.00
DT	160.00	DT <US/F>	100.00
DT	100.00	DT <US/F>	40.000

FILE 2



RECEIVED BY
Form 9-331
Dec. 1973

APR 25 1985

O. C. D.
ARTESIA, OFFICE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Form Approved.
Budget Bureau No. 42-R1424

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other DRY

2. NAME OF OPERATOR
Exxon Corporation

3. ADDRESS OF OPERATOR
P.O. Box 1600, Midland, Texas 79702

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 660' FNL and 660' FEL of Sec. 10
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:

TEST WATER SHUT-OFF ☐
FRACTURE TREAT ☐
SHOOT OR ACIDIZE ☐
REPAIR WELL ☐
PULL OR ALTER CASING ☐
MULTIPLE COMPLETE ☐
CHANGE ZONES ☐
ABANDON* ☐
(other) ☐

SUBSEQUENT REPORT OF:

☐
☐
☐
☐
☐
☐
☐
☒

5. LEASE
NM-18215

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Shewell Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Wildcat (Delaware)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 10-26S-26E

12. COUNTY OR PARISH
Eddy

13. STATE
New Mexico

14. API NO.

30-015-24469

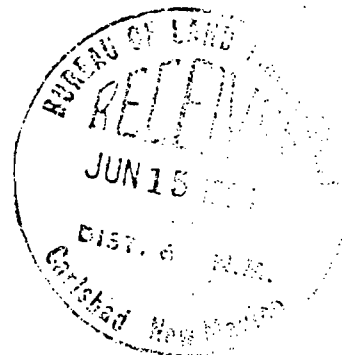
15. ELEVATIONS (SHOW DF, KDB, AND WD)
3345' GR

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The above well was plugged as follows on May 30, 1984:

Circulate hole w/9.5# brine
Spot plug @ 1601-1926' w/35 sx C1C
Perf. 690' w/2 shots
Spot 220 sx C1C cement down 5 1/2" casing until
cement surfaces out of 8 5/8" annulus.
Install dry hole marker



Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Mark Knippling TITLE Unit Head DATE June 13, 1984

(This space for Federal or State office use)

APPROVED BY Mark Knippling TITLE _____ DATE 4-24-85

CONDITIONS OF APPROVAL IF ANY: 09

3100

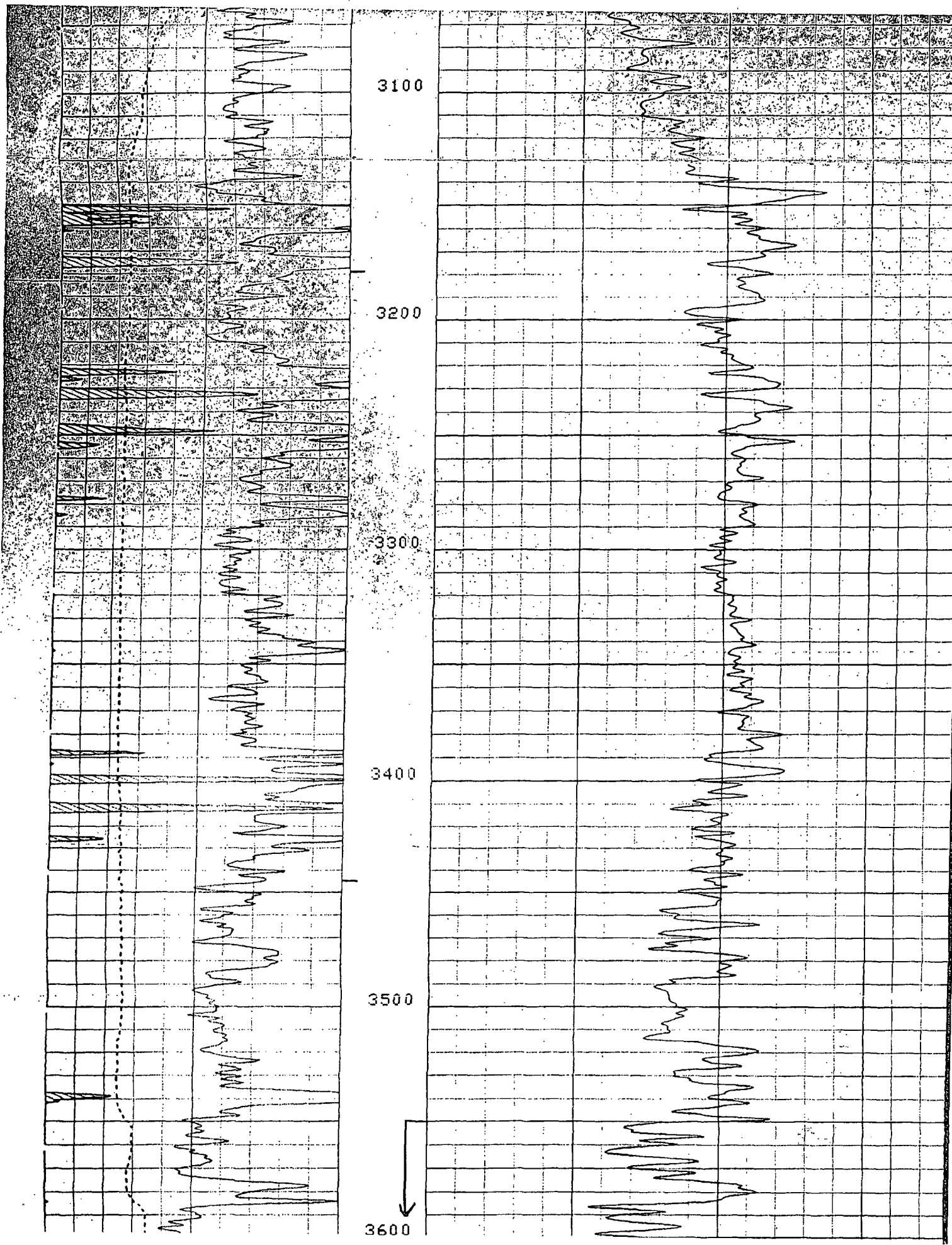
3200

3300

3400

3500

3600



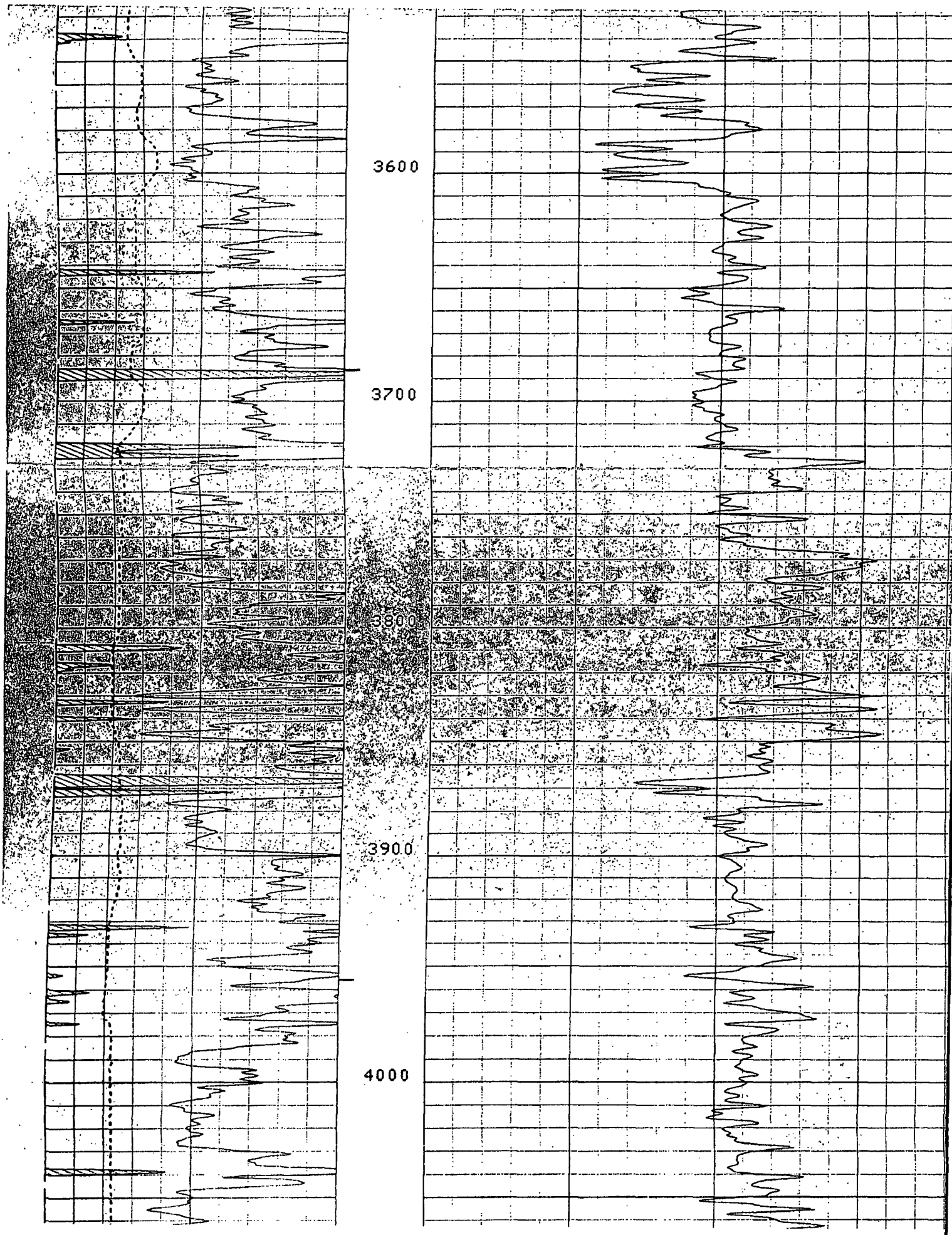
3600

3700

3800

3900

4000



4000

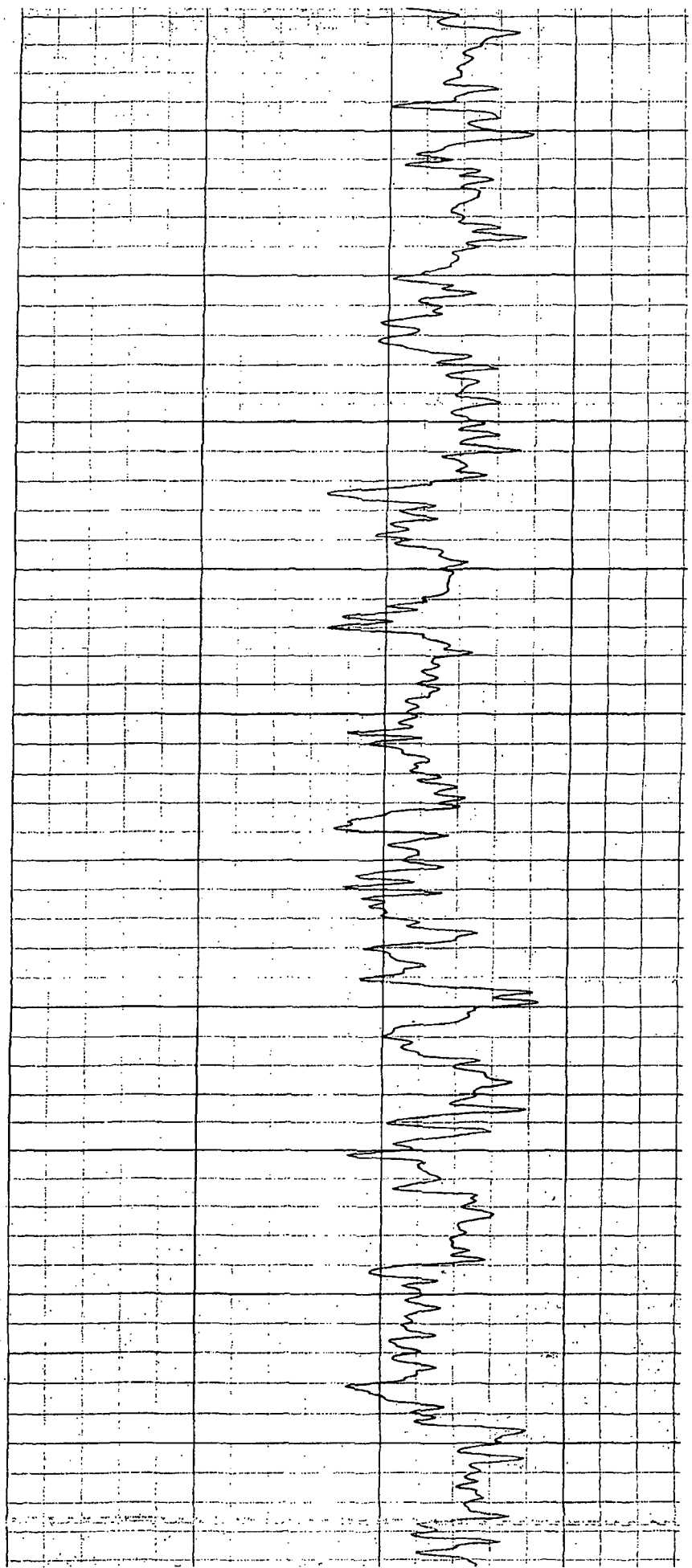
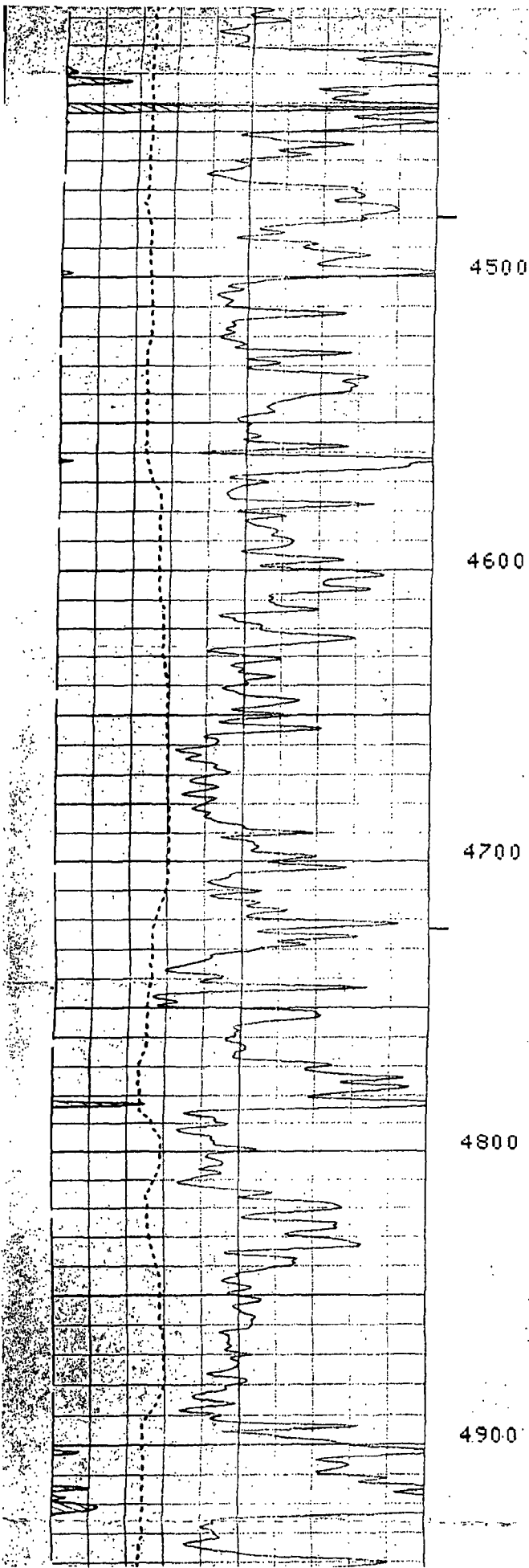
4100

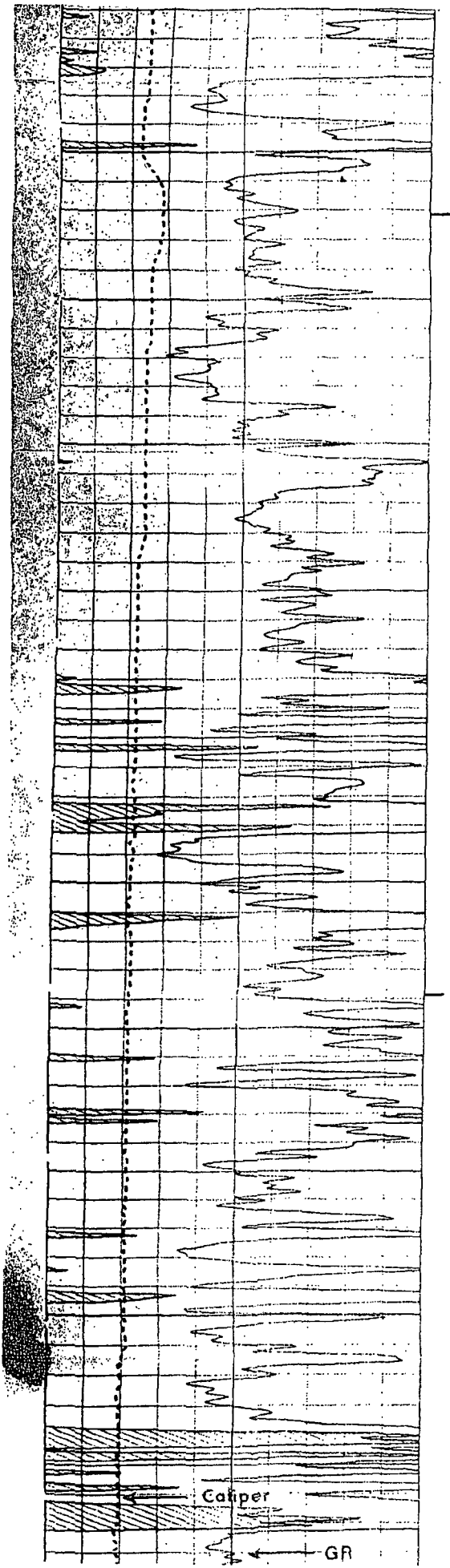
4200

4300

4400

Gross Delaware
SWD Interval
3551-5383'





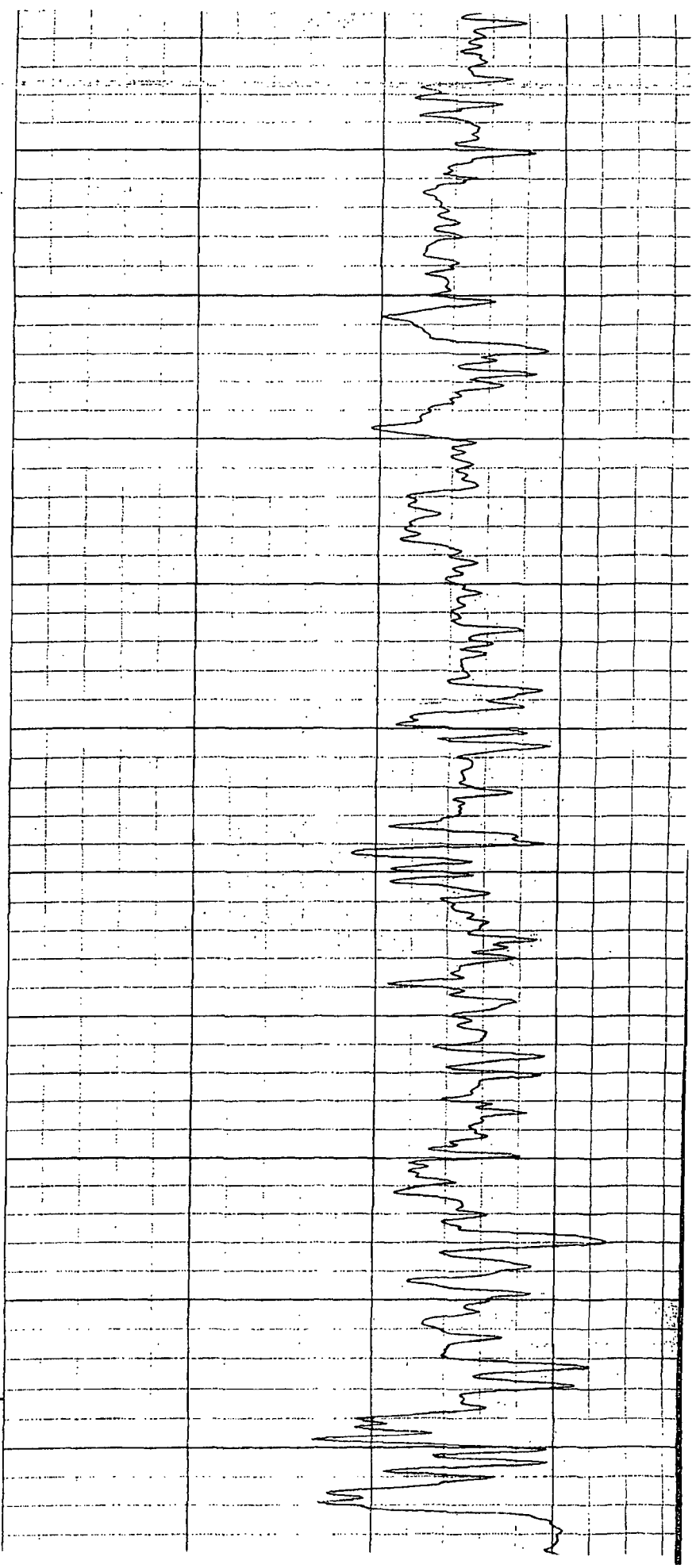
5000

5100

5200

5300

5400





March 7, 2012

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

**Re: Legal Notice
Salt Water Disposal Well**

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 "W. Miller".

William Miller
Landman

WM/sw
Enclosures

ARTESIA DAILY PRESS
LEGAL NOTICES

COG Operating LLC, 550 West Texas Avenue, Suite 100, Midland, TX 79701 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 South Craig 10 SWD No. 1 is located 660' FNL & 660' FEL, Section 10, Township 26 South, Range 26 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 Delaware Sandstone formation at a depth of 3551' to 5383' at a maximum surface pressure of 710 psi and a maximum rate of 7000 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Jeff Gasch at COG Operating LLC, 550 West Texas Avenue, Suite 100, Midland, TX 79701 or call 432-818-2335.

Published in the Artesia Daily Press, Artesia, New Mexico
_____, 2012.

Affidavit of Publication

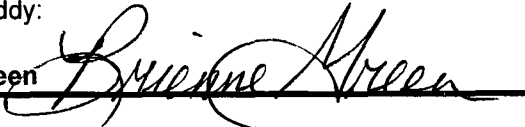
NO.

22061

STATE OF NEW MEXICO

County of Eddy:

Brienne Green



being duly sworn, says that he is the

Editor

of the Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/days on the same

day as follows:

First Publication

March 11, 2102

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Subscribed and sworn to before me this

12th day of

March

2012



OFFICIAL SEAL

Latisha Romine

NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires:

5/12/2015



10th

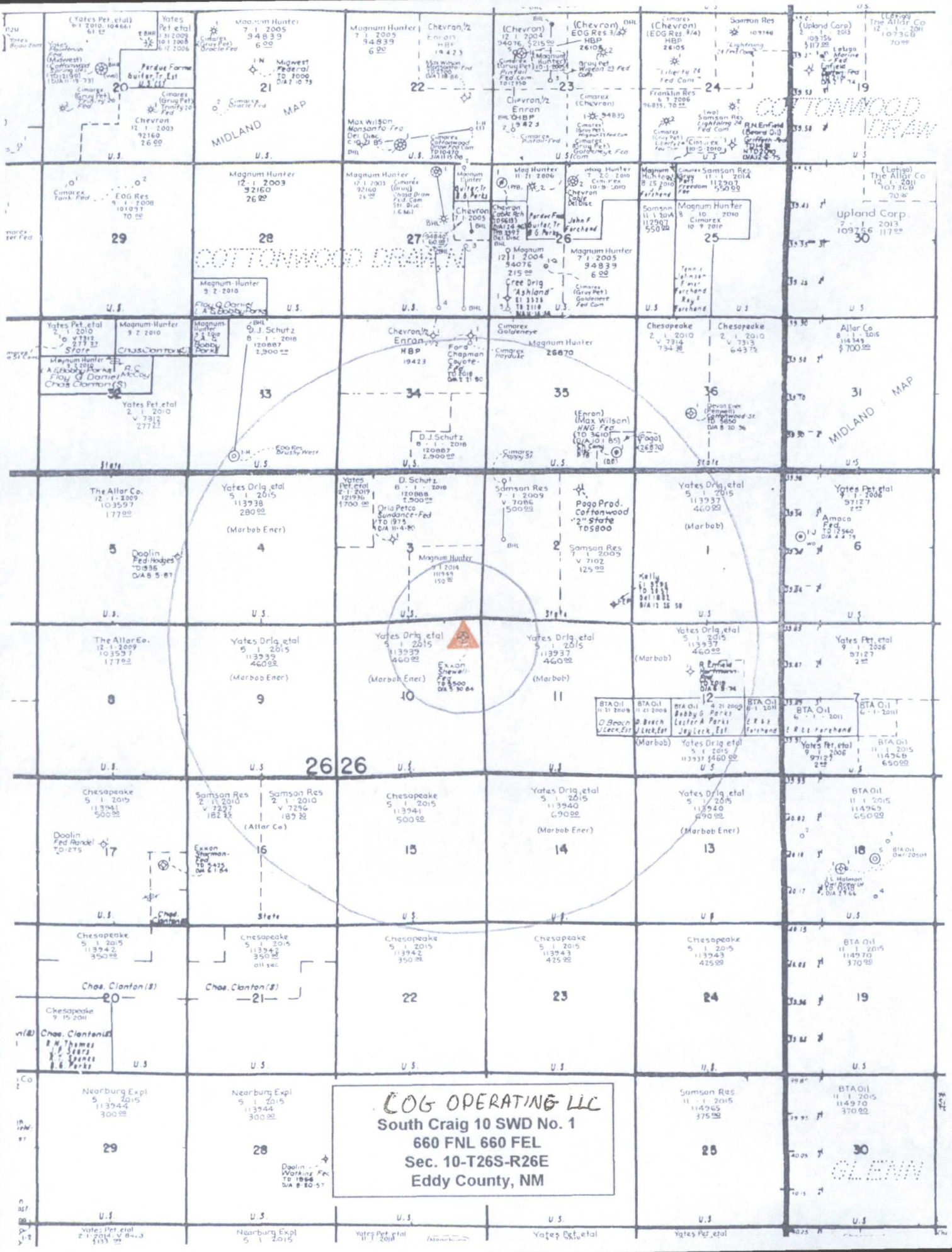
Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

LEGAL NOTICE

COG Operating LLC, 550 West Texas Avenue, Suite 100, Midland, TX 79701 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 South Craig 10 SWD No. 1 is located 660' FNL & 660' FEL Section 10, Township 26 South, Range 26 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 Delaware Sandstone formation at a depth of 3551' to 5383' at a maximum surface pressure of 710 psi and a maximum rate of 7000-BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Jeff Gasch at COG Operating LLC, 550 West Texas Avenue, Suite 100, Midland, TX 79701 or call 432-818-2335. Published in the Artesia Daily Press, Artesia, N.M., March 11, 2012. Legal No 22061



COG OPERATING LLC
South Craig 10 SWD No. 1
660 FNL 660 FEL
Sec. 10-T26S-R26E
Eddy County, NM



March 7, 2012

Yates Petroleum Corporation
105 South 4th Street
Artesia, NM 88210

Re: Application to Inject
South Craig 10 SWD #1
Township 26 South, Range 26 East, N.M.P.M.
Section 10: 660' FNL & 660' FEL
Eddy County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's application to convert the referenced well to salt water disposal. 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 "W. Miller".

William Miller
Landman

WM/sw
Enclosures



March 7, 2012

Cimarex Energy Company
600 N. Marienfeld, Ste. 600
Midland, TX 79701

Re: Application to Inject
South Craig 10 SWD #1
Township 26 South, Range 26 East, N.M.P.M.
Section 10: 660' FNL & 660' FEL
Eddy County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's application to convert the referenced well to salt water disposal. 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 "W. Miller", with a stylized flourish at the end.

William Miller
Landman

WM/sw
Enclosures

7011 1570 0003 6389 6001

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:

Yates Petroleum Corporation
105 South 4th Street
Artesia, NM 88210
South Craig 10 SWD #1

2. Article Number
(Transfer from service label)

7011 1570 0003 6389 6001

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

J. Delgado

☒ Agent☐ Addressee

B. Received by (Printed Name)

J. Delgado

C. Date of Delivery

3-9-11

D. Is delivery address different from item 1? ☐ YesIf 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

Sent to:

105 South 4th Street
Artesia, NM 88210
City, State, ZIP+4
South Craig 10 SWD #1

Total Postage & Fees \$
Yates Petroleum CorporationReturn Receipt Fee
(Endorsement Required)Restricted Delivery Fee
(Endorsement Required)

Certified Fee

Postage \$

Postmark
Here**OFFICIAL USE**

For delivery information visit our website at www.usps.com

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7011 1570 0003 6389 6018

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:

Cimarex Energy Company
600 N. Marienfeld, Ste. 600
Midland, TX 79701
South Craig 10 SWD #1

2. Article Number
(Transfer from service label)

7011 1570 0003 6389 6018

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

Janet Garnett

☒ Agent☐ Addressee

B. Received by (Printed Name)

JANET GARNETT

C. Date of Delivery

3-9-11

D. Is delivery address different from item 1? ☐ YesIf 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

Sent to:

600 N. Marienfeld, Ste. 600
Midland, TX 79701
City, State, ZIP+4
South Craig 10 SWD #1

Total Postage & Fees \$
Cimarex Energy CompanyReturn Receipt Fee
(Endorsement Required)Restricted Delivery Fee
(Endorsement Required)

Certified Fee

Postage \$

Postmark
Here**OFFICIAL USE**

For delivery information visit our website at www.usps.com

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Jones, William V., EMNRD

From: Savannah Wilkinson [shaller@concho.com]
Sent: Monday, April 16, 2012 1:36 PM
To: Jones, William V., EMNRD
Cc: Dean Chumbley; Jeff Gasch; William Miller
Subject: RE: South Craig 10 SWD #1
Attachments: BLM - Return Receipt.pdf

Mr. Jones,

I received the return receipt on the notice to the BLM and the delivery date was 04/11/2012. Please see attachment. If you need any additional information, please let me know. Thank you!

*Savannah Wilkinson
Land Assistant
COG OPERATING LLC
2208 W. Main St.
Artesia, New Mexico 88210
575-748.6942*



From: William Miller
Sent: Tuesday, April 10, 2012 3:29 PM
To: william.v.jones@state.nm.us
Cc: Savannah Wilkinson
Subject: South Craig 10 SWD #1

Mr. Jones,

Sec. 11 & Sec. 10 & Sec. 2 T26S R26E is operated by Yates Petroleum.

The S/2 of Sec. 3 T26S R26E is operated by Cimarex Energy.

Savannah sent notice to the BLM for the surface ownership and we will provide you the date they receive it. Thank you.

William Miller

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:

Bureau of Land Management
620 East Greene Street
Carlsbad, NM 88220-6292
South Craig 10 SWD #1

2. Article Number
(Transfer from service label)

7011 1570 0000-7781 1628

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☒ Agent☐ Addressee

B. Received by (Printed Name)

H. Casarez

C. Date of Delivery

*4/11/12*D. Is delivery address different from item 1? ☐ YesIf 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

Jones, William V., EMNRD

From: Ingram, Wesley W [wingram@blm.gov]
Sent: Thursday, April 12, 2012 4:05 PM
To: Jones, William V., EMNRD
Subject: COG proposal for South Craig 10 SWD 1

Will,

COG has submitted a proposal to convert the Shewell Federal 1 to an SWD and rename as the South Craig 10 SWD 1. The operator stated that they have several Delaware SWD wells in the area. I don't find one within greater than a 2 mile radius.

The operator will have to file an APD to re-enter the well and we will cover the other items at that time. The BLM will not approve a frac treatment.

The BLM will not object to this proposal.

Sincerely,
Wesley W. Ingram
Supervisory Petroleum Engineer
Bureau of Land Management
Carlsbad Field Office
620 E. Greene Street
Phone: 575-234-5982
Fax: 575-234-5927

Jones, William V., EMNRD

From: Jeff Gasch [jgasch@concho.com]
Sent: Monday, April 02, 2012 3:26 PM
To: Jones, William V., EMNRD
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Wesley_Ingram@blm.gov
Subject: RE: Disposal application from COG Operating, LLC: South Craig 10 SWD #1 30-015-24469 Delaware from 3551 to 5383 feet

Thanks Will. You are correct that the permit was originally submitted by Marbob but that approval has expired because the work was not done.

I'm headed to Artesia so I'll get the answers to your questions tomorrow. I'll also check our well files in Artesia and see if we have any additional logs.

Thanks,

Jeff Gasch
Operations Engineer
COG Operating LLC
432-818-2335 (office)
432-638-7433 (cell)

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Monday, April 02, 2012 4:05 PM
To: Jeff Gasch
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Wesley_Ingram@blm.gov
Subject: Disposal application from COG Operating, LLC: South Craig 10 SWD #1 30-015-24469 Delaware from 3551 to 5383 feet

Hello Jeff,

Just reviewed this application. Actually very well done, thank you.

Looks like this was approved a year or two ago by Marbob but never re-entered and used for disposal, so likely it expired?

I normally ask for the formation tops above and below the disposal interval – but found the Delaware and Bone Spring tops in the Well File, so we are OK. If there are members of the Delaware in this area, let us know what the tops are, (Bell Canyon, Cherry Canyon, Brushy Canyon).

The only log we have on file is that Sonic Log, the well file says three or four other logs were run. Please look in your internal file as received from Marbob and if you find more than the Sonic Log, send copies of the other logs to our Hobbs office for scanning into the imaging system. Be sure and put the API number on the cover sheet of each log.

Who is the surface owner? And were they notified by certified mail? (even if the BLM is the owner, they must be notified with a complete copy of the application).

Yates and Cimarex were notified but you didn't say which lands inside the ½ mile AOR are owned by each of these. Our attorney requests that the tracts of land be identified and the owners of each tract.

If you address these requests, we can release this on 4/4/12 as 15 days from the date received here in Santa Fe, unless there are more certified notices to be sent out; if so, we must wait 15 days from the date of last notice.

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



CONFIDENTIALITY NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Thank you.

Jones, William V., EMNRD

From: Jeff Gasch [jgasch@concho.com]
Sent: Tuesday, April 10, 2012 1:45 PM
To: Jones, William V., EMNRD
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Wesley_Ingram@blm.gov
Subject: RE: Disposal application from COG Operating, LLC: South Craig 10 SWD #1 30-015-24469 Delaware from 3551 to 5383 feet

Will,

Sorry, It's taken a little longer than expected to get you a response. Our land group in Artesia is mailing the notification to the surface owner today (it is BLM). We'll forward copies of the certified mail receipt when available. They are also working on the AOR map with owners identified and will send that ASAP.

We did find image files for the OH logs and I will have a copy printed and sent to the OCD office in Hobbs. The tops within the Delaware are as follows:

Lamar 1849'
Bell Canyon 1899'
Cherry Canyon 2752'
Brushy Canyon 3898'

Thanks for your help and let me know if you need anything else.

Thanks,

Jeff Gasch
Operations Engineer
COG Operating LLC
432-818-2335 (office)
432-638-7433 (cell)

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Monday, April 02, 2012 4:05 PM
To: Jeff Gasch
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Wesley_Ingram@blm.gov
Subject: Disposal application from COG Operating, LLC: South Craig 10 SWD #1 30-015-24469 Delaware from 3551 to 5383 feet

Hello Jeff,
Just reviewed this application. Actually very well done, thank you.

Looks like this was approved a year or two ago by Marbob but never re-entered and used for disposal, so likely it expired?

I normally ask for the formation tops above and below the disposal interval – but found the Delaware and Bone Spring tops in the Well File, so we are OK. If there are members of the Delaware in this area, let us know what the tops are, (Bell Canyon, Cherry Canyon, Brushy Canyon).

The only log we have on file is that Sonic Log, the well file says three or four other logs were run. Please look in your internal file as received from Marbob and if you find more than the Sonic Log, send copies of the other logs to our Hobbs office for scanning into the imaging system. Be sure and put the API number on the cover sheet of each log.

Who is the surface owner? And were they notified by certified mail? (even if the BLM is the owner, they must be notified with a complete copy of the application).

Yates and Cimarex were notified but you didn't say which lands inside the ½ mile AOR are owned by each of these. Our attorney requests that the tracts of land be identified and the owners of each tract.

If you address these requests, we can release this on 4/4/12 as 15 days from the date received here in Santa Fe, unless there are more certified notices to be sent out; if so, we must wait 15 days from the date of last notice.

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



CONFIDENTIALITY NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Thank you.

Jones, William V., EMNRD

From: William Miller [wmiller@concho.com]
Sent: Tuesday, April 10, 2012 3:29 PM
To: Jones, William V., EMNRD
Cc: Savannah Wilkinson
Subject: South Craig 10 SWD #1

Mr. Jones,

Sec. 11 & Sec. 10 & Sec. 2 T26S R26E is operated by Yates Petroleum.

The S/2 of Sec. 3 T26S R26E is operated by Cimarex Energy.

Savannah sent notice to the BLM for the surface ownership and we will provide you the date they receive it. Thank you.

William Miller
Landman
COG OPERATING LLC
2208 W Main St
Artesia, New Mexico 88210-3720
575.748.6940



CONFIDENTIALITY NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Thank you.

CONFIDENTIALITY NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Thank you.

Injection Permit Checklist (11/15/2010)

WFX PMX SWD 1239-A (4/11/12) UIC Qtr A (M/J)

Wells 1 Well Name(s): SOUTH CRAIG 10 SWD #1 (was SHEWELL Falt #1)

API Num: 30-0 15-24469 Spud Date: 4/26/83 New/Old: N (UIC primacy March 7, 1982)

Footages 660FSL/660FEL Unit A Sec 10 Tsp 26S Rge 26E County EDDY

General Location: 5 mi N of TX, 20 mi W. of Red Bluff

Operator: COG OPERATING LLC Contact Jeff Gersch

OGRID: 229137 RULE 5.9 Compliance (Wells) 8/3223 (Finan Assur) OK IS 5.9 OK? OK

Well File Reviewed ✓ Current Status: PEAEO

Planned Work to Well: Re-enter to 5400' SQZ Del

Diagrams: Before Conversion ✓ After Conversion ✓ Elogs in Imaging File: only SONIC / many logs were Run!

Well Details:		Sizes Hole.....Pipe	Setting Depths	Stage Tool	Cement Sx or Cf	Determination Method
New <u>✓</u> Existing	Surface	17 1/2 13 3/8	630'		700 SX	CIRC
New <u>✓</u> Existing	Interm	11 8 5/8	1726'		800 SX	CIRC
New <u>✓</u> Existing	LongSt	7 7/8 5 1/2	5500' TD		1075 SX	726' TS / PEA to Surf.
New <u>✓</u> Existing	Liner					
New <u>✓</u> Existing	OpenHole					

Depths/Formations:	Depths, Ft.	Formation	Tops?
Formation(s) Above	1850	Del	✓
Injection TOP:	3551	Del	Max. PSI <u>710</u> OpenHole <u>✓</u> Perfs <u>✓</u>
Injection BOTTOM:	5383	Del	Tubing Size <u>2 7/8</u> Packer Depth <u>3500'</u>
Formation(s) Below	5422	BS	

Capitan Reef? (Potash? Noticed?) [WIPP? Noticed?] Salado Top/Bot Case on Surface Cliff House?

Fresh Water: Depths: <630' Formation Del Wells? NONE Analysis? ✓ Affirmative Statement ✓

Disposal Fluid Analysis? Sources: Del / B.S. / W.C.

Disposal Interval: Analysis? ✓ Production Potential/Testing: BLM

Notice: Newspaper Date 3/11/12 Surface Owner BLM Mineral Owner(s) YPC / Cimrex (3/9/11)

RULE 26.7(A) Affected Persons: YPC / Cimrex (3/9/11)

AOR: Maps? ✓ Well List? ✓ Producing in Interval? ✓ Wellbore Diagrams? ✓

.....Active Wells 0 Repairs? ✓ Which Wells? ✓

.....P&A Wells 0 Repairs? ✓ Which Wells? ✓

Issues: Request Sent Reply: