

DATE 2/08/2017	SUSPENSE	ENGINEER MAM	LOGGED IN 2/08/2017	TYPE SWD	APP NO. PMAM1704056665
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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



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.

Michael HANAGAN See Application Manager February 1, 2017
 Print or Type Name Signature Title Date
 Mike@MANZANOCnergy.com
 e-mail Address

Manzano, LLC

P O Box 1737
Roswell, NM 88202
575-623-1996

RECEIVED CCC
2017 FEB -8 P 2 15

February 1, 2017

New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

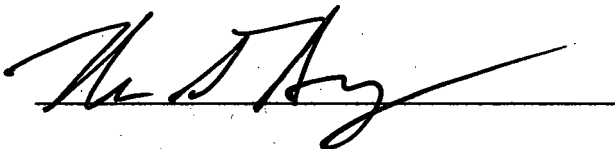
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

RE: Salt water Disposal Agreement
Manzano, LLC Alondra SWD #1

Manzano, LLC hereby submits an application to convert the plugged and abandoned Alondra Fee #1 #1 to a salt water disposal well to be renamed the Manzano, LLC Alondra SWD #1. Accordingly please find enclosed an original and one copy of our application Form C-108 with attachments. A third copy has been sent to the Division Office in Hobbs. A Legal Notice of our application has been filed with the Eastern new Mexico News.

Should you have questions regarding our application, I can be reached at 575-623-1996 or 575-420-8821 cell. Thank you for your assistance in handling our application.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mike Hanagan', is written over a horizontal line.

Mike Hanagan
On Behalf of Manzano, LLC

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? Yes No
- II. OPERATOR: Manzano, LLC
ADDRESS: P O Box 1737, Roswell, NM 88202
CONTACT PARTY: Mike Hanagan PHONE: 575-623-1996, cell 575-420-8821
- 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. ATTACHED
- 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. ATTACHED
- 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.). ATTACHED
- *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. ATTACHED
- IX. Describe the proposed stimulation program, if any. ATTACHED
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
FILED WITH THE DIVISION
- *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. ATTACHED
- 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. ATTACHED
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. ATTACHED
- 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: Michael G. Hanagan TITLE: Manager
SIGNATURE: [Signature] DATE: February 1, 2017
E-MAIL ADDRESS: mike@manzano energy.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: _____

Form C-108 Responses

Application For Authorization to Inject

- I. The purpose for this application is for salt water disposal. This application should qualify for administrative approval.
- II. Operator: Manzano, LLC, P O Box 2107 Roswell, New Mexico 88202, Contact Mike Hanagan, 575-623-1996; cell 575-420-8821.
- III. The Injection Well Data Sheet is Attached.
- IV. This is not an expansion of an existing project.
- V. The Well Radius Map is attached.
- VI. Other than the proposed injection well, there are no plugged or producing wells within the area of review that were drilled to the injection interval. All of the wells within the area of review are less than 5000 feet. The proposed injection interval is 8880 to 9503 feet in the Devonian. Data enclosed shows the plugging information on the proposed injection well.
- VII. Data on the proposed operation is as follows.
 - a. Manzano plans to inject a maximum of 20000 BWPD, an average of 4000 BWPD, and expect to ultimately inject 5 million barrels of salt water.
 - b. The system is closed.
 - c. The average injection pressure is anticipated to be 500 psi. The maximum injection pressure will be 1776 psi.
 - d. San Andres Injection Fluid: The fluids to be injected will come from further development of the Chaveroo San Andres field. Attached is a field study of the Chaveroo field which shows the produced water is a brine with 165,000 ppm chlorides.
 - e. Devonian Disposal Zone: The zone to be injected does not produce within two miles of the proposed well. The Devonian was drill stem tested in this well. A copy is attached. The DST of the top of the Devonian at 8915 to 8981 feet recovered 5785 ft of formation water and 800 ft of drilling fluid. The sample chamber showed the formation water had 80,000 ppm chlorides with a resistivity of .0794 ohm-m at 82 degrees Fahrenheit. So the injection fluid and the injection zone formation water are both brines.
- VIII. The injection zone will be from 8880 to ~~9200~~ feet in this existing wellbore. The zone is the Devonian formation which is a dolomite. There are no known water aquifers below the proposed injection zone. The New Mexico State Engineers office do not show any water wells in the review area or in T7S-R34E.
- IX. Manzano plans to acidize the injection zone with 10,000 gals of 15% HCl.
- X. The previous operator filed a compensated neutron density and a dual induction log from surface to 9360 feet with the NMOCD. These are available on the Go Tech website. Production casing was not run and the well was never produced. However, a DST was run on this well. Data enclosed shows the plugging information on the proposed injection well, and shows the result of this DST.
- XI. The New Mexico State Engineers office indicates there are no water wells (PODs) in the review area.
- XII. We have examined all available geologic and engineering evidence and do not see any faulting or other evidence of a hydrologic connection between the injection zone and underground sources of drinking water.
- XIII. Proof of notice has been provided to the surface owner, George Hay, LLC of 1728 Avenue Q, Portales, NM 88130. A memorandum of a salt water disposal agreement between Manzano, LLC and George Hay, LLC is attached. A Lease Map is attached. Proof of notice has also been

provided to the operator of the San Andres wells, EOR Operating, whose address is One Riverway Suite 610 Houston, Texas 77056, and Strata Production Company, the operator of record owning deep rights, , whose address is P O Box 700 Roswell, NM 88202. Copies of the Form C-108 with all attachments has been sent to the State of New Mexico, Commissioner of Public Lands, P O Box 1148, Santa Fe, New Mexico.

Legal Notice has been submitted for publication in Eastern New Mexico News in Roosevelt County. A copy is attached. A certified copy will be forwarded as soon as it is received in this office.

Thank you for your review if this proposal.

Sincerely,


Mike Hanagan,
Manzano, LLC

Date: February 1, 2017

Attachments:

1. Injection Well Data Sheet Slides one and two.
2. Well Radius Map showing 1/4 mile and 2 mile radius of the review area.
3. Plug and abandonment data on the Alondra Fee #1.
4. Drill stem test information for the Alondra #1.
5. Injection water analysis from the Chaveroo field study published by the Roswell Geological Society.
6. Lease Map
7. Copy of Legal Notice published in the Eastern New Mexico News of Portales and Clovis, NM
8. Copies of notices to George Hay, Strata Production Company and EOR Operating Company
9. Memorandum of Salt Water Disposal Agreement with George Hay, LLC.

INJECTION WELL DATA SHEET

Tubing Size: 3 1/2

Lining Material: None

Type of Packer: 5 1/2" Nickel Plated Injection Packer

Packer Setting Depth: 8870

Other Type of Tubing/Casing Seal (if applicable): None

Additional Data

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

If no, for what purpose was the well originally drilled? The well was originally drilled as an exploratory test in 1995. It was plugged and abandoned as a dry hole, and no production casing was run.

2. Name of the Injection Formation: Devonian

3. Name of Field or Pool (if applicable): None (the Devonian does not produce here)

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. The well was drilled as a dry and abandoned test. A copy of the plugging information is attached.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: The San Andres produces from 4174 to 4264 feet in the Archer #1 in Section 17.

Side 1

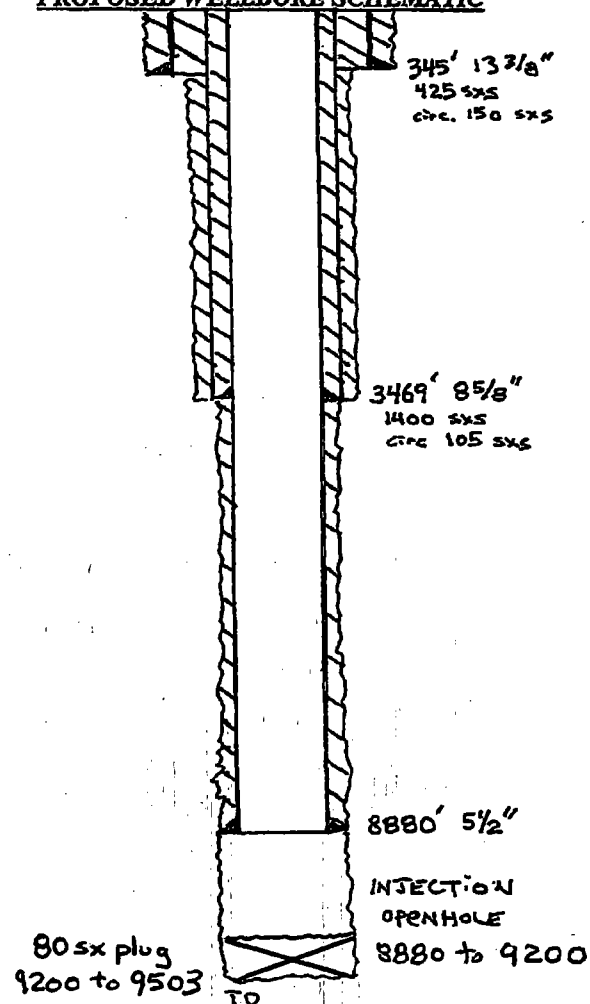
INJECTION WELL DATA SHEET

OPERATOR: Manzano, LLC (previously Strata Production Company)

WELL NAME & NUMBER: Alondra Fee #1

WELL LOCATION: 1650 Fsl, 730 Fwl L 17 T7S R34E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

PROPOSED WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

345'

Hole Size: 17 1/2"

Casing Size: 13 3/8" 48#

Cemented with: 425 sxs

or _____ ft³

Top of Cement: Surface

Method Determined: Circ. 150 sxs

Intermediate Casing

3469'

Hole Size: 12 1/4"

Casing Size: 8 5/8"

Cemented with: 1400 sxs

or _____ ft³

Top of Cement: Surface

Method Determined: Circ. 105 sxs

Production Casing

8880'

Hole Size: 7 7/8"

Casing Size: 5 1/2"

Cemented with: 1550 sxs

or 1950 ft³

Top of Cement: Surface

Method Determined: Will circulate

Total Depth: 9503

Injection Interval

8880 To 9200 feet (openhole)

(Perforated or Open Hole; indicate which)

WELLBORE Diagram (Proposed Injection Wellbore)

ALONDRA FEE #1

API #30-041-20877
1650' FSL & 730' FWL
SEC 17-T7S-R34E
ROOSEVELT, NEW MEXICO
GL Elevation: 4318'
KB Elevation: 4333' (15')

Tubulars			
	Size	Grade - Wt	Depth Set (RKB)
Surf.	13 3/8"	H-40 - 48#/ft	345'
Interm.	8 5/8"	J-55 - 32#/ft	1200'
Interm.	8 5/8"	J-55 - 24#/ft	3469'
Prod.	5 1/2"	N80 & P-110 - #17.0/ft	8880'
Tbg	3 1/2"	N80 FJ	8870'

Rustler @ 1950'

13 3/8" 48#/ft H-40 @ 345'
Cemented w/425sx - Circ 150sx

San Andres @ 3360'

8 5/8" 24 & 32#/ft J55 @ 3469'
Cement w/1600sx - Circ 105sx

Abo @ 6892'

Wolfcamp @ 7715'

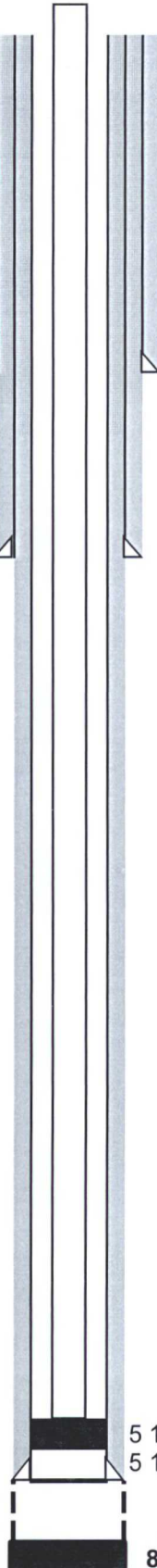
Cisco @ 8480'

Mississippian @ 8544'

Woodford @ 8790'

Siluro-Devonian @ 8878'

Granite Wash @ 9420-9440



3 1/2" FJ lined tubing @ 8870'
5 1/2" Injection Packer @ 8870'
5 1/2" 17# N80 & P110' @ 8880'
Cement w/1300sx - Circulate to Surface
Injection Interval 8880 to 9200 feet
80 sx plug 9200-9503

Manzano, LLC

ALONDRA FEE #1 SWD APPLICATION

AREA OF REVIEW MAP

Total Depth shown by well

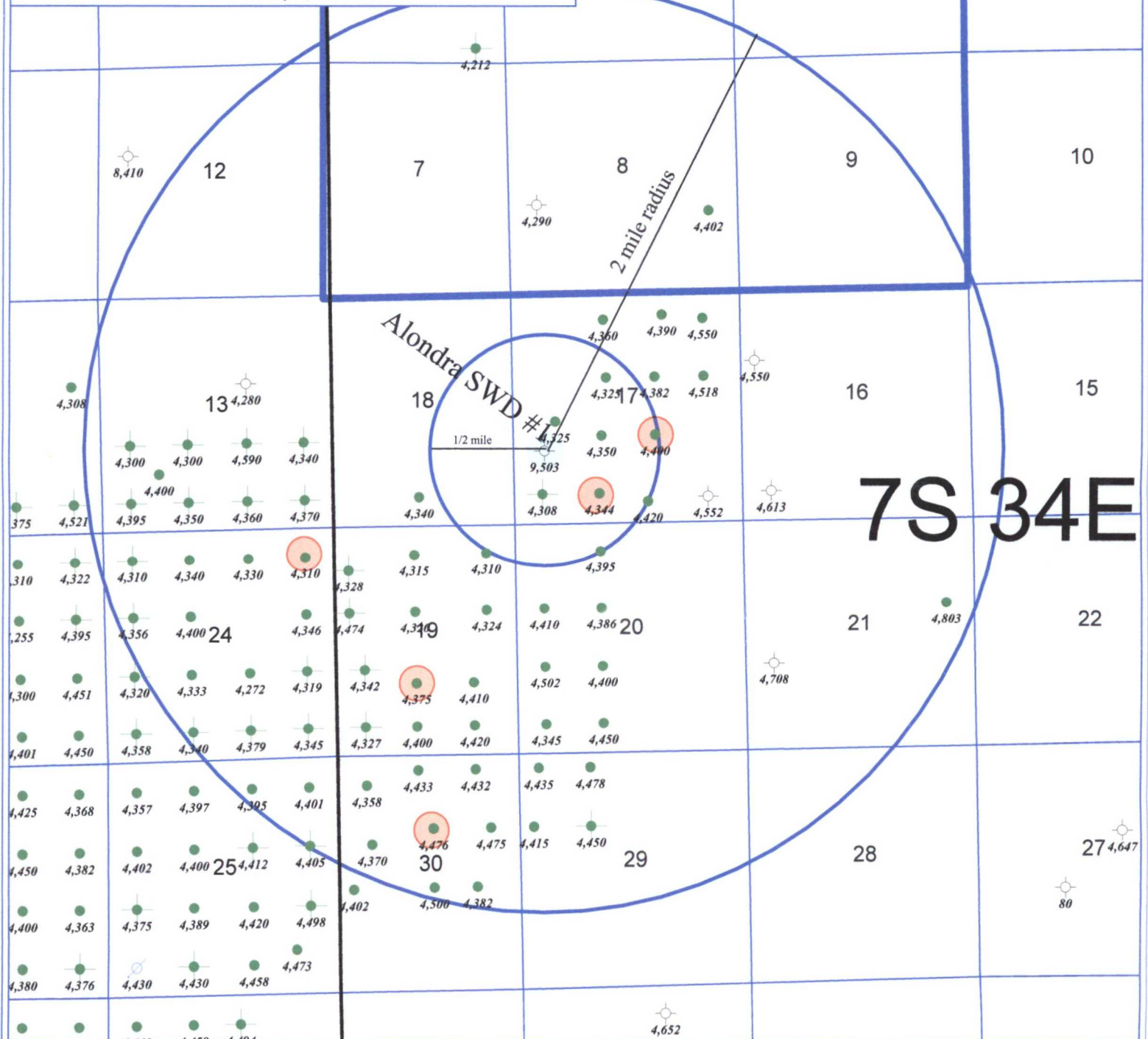
REMARKS

The Alondra is the only well >5000 ft deep within the 2 mile or 1/2 mile review area.

Active San Andres wells are shown with a red circle.
They are operated by EOR Operating Company.

By: John Worrall

January 31, 2017



Submit 3 Copies
to Appropriate
District Office

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 S. First Street, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Mine and Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, New Mexico 87505

Form C-103
Revised 1-1-69

WELL API NO.

30-041-20877

5. Indicate Type of Lease

STATE ☐

FEE ☒

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

Alondra Fee

8. Well No.

#1

9. Pool Name or Wildcat

Wildcat Siluro Devonian

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 "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well

OIL

GAS

WELL ☐

WELL ☐

OTHER

Plugged and Abandoned

2. Name of Operator

STRATA PRODUCTION COMPANY

3. Address of Operator

P. O. BOX 1030, ROSWELL, NEW MEXICO 88202-1030

4. Well Location

Unit Letter

L

: 1650

Feet From The

South

Line and

730

Feet From The

West

Line

Section

17

Township

7 South

Range

34 East

NMPM

Roosevelt

County

10. Elevation (Show whether DP, RKB, RT, GR, etc.)

4318'

11.

Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐

PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐

CHANGE PLANS ☐

PULL OR ALTER CASING ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐

ALTERING CASING ☐

COMMENCE DRILLING OP'NS. ☐

PLUG AND ABANDONMENT ☒

CASING TEST AND CEMENT JOB ☐

OTHER: ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)

SEE RULE 1103

08/28/95: Drilled to 9503' TD. Set plugs as follows:

Set 50 sack Class 'C' plug at 8935' - 8835'

Set 50 sack Class 'C' plug at 8485' - 8385'

Set 50 sack Class 'C' plug at 6954' - 6854'

Set 50 sack Class 'C' plug at 4450' - 4350'

Set 50 sack Class 'C' plug at 3519' - 3419'

Set 50 sack Class 'C' plug at 2000' - 1900'

Set 10 sack Class 'C' plug at Surface

Cut off wellhead. Installed Dry Hole Marker. Released rig at 11:00 AM on 8/29/95.

Well Plugged and Abandoned.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

Carol J. Garcia

TITLE

PRODUCTION RECORDS MANAGER

DATE

9/22/95

TYPE OR PRINT NAME

CAROL J. GARCIA

TELEPHONE NO.

505-622-1127

(This space for State Use)

APPROVED BY

Jack Griffin

TITLE

OIL & GAS INSPECTOR

DATE

MAY 14 1996

CONDITIONS OF APPROVAL, IF ANY:

JC

5 dp

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-105
Revised 1-1-89

WELL API NO.

30-041-20877

5. Indicate Type of Lease

STATE ☐

FEE ☒

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

Alondra Fee

8. Well No.

#1

9. Pool name or Wildcat

Wildcat-Siluro Devonian

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well:

OIL WELL ☐ GAS WELL ☐ DRY ☒ OTHER ☐

b. Type of Completion:

NEW WELL ☐ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☒ OTHER ☐ P & A

2. Name of Operator

Strata Production Company

3. Address of Operator

P.O. Box 1030, Roswell, New Mexico 88202-1030

4. Well Location

Unit Letter L: 1650 Feet From The South Line and 730 Feet From The West Line

Section 17 Township 7 South Range 34 East NM/M Roosevelt County

10. Date Spudded

7/29/95

11. Date T.D. Reached

8/28/95

12. Date Compl. (Ready to Prod.)

N/A

13. Elevations (DF & RKB, RT, GR, etc.)

4318' GR

14. Elev. Casinghead

15. Total Depth

9503'

16. Plug Back T.D.

17. If Multiple Compl. How Many Zones?

18. Intervals Drilled By

Rotary Tools

Cable Tools

0-9503'

19. Producing Interval(s), of this completion - Top, Bottom, Name

None

20. Was Directional Survey Made

Yes

21. Type Electric and Other Logs Run

CNL/LDT, DLL/MSFL, MSD, SL/BC

22. Was Well Cored

Sidewall

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB/FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	48#	345'	17 1/2"	425 sacks	150 sacks
8 5/8"	82# 1200'/24# 2286	3469'	12 1/4"	1600 sacks	105 sacks

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)

None

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)					Well Status (Prod. or Shut-in)	
						Dry Hole	
Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

30. List Attachments

CNL/LDT, DLL/MSFL, Deviation Survey

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature

Carol J. Garcia

Printed

Name Carol J. Garcia

Title

Production Records Manager

Date 11/2/95

REPORT NO.
139610

PAGE NO. 1

TEST DATE:
21-AUG-1995

STAR

Schlumberger Testing Data Report

Pressure Data Report

Schlumberger

COMPANY: STRATA PRODUCTION CO.

WELL: ALONDRA FEE #1

TEST IDENTIFICATION

Test Type OPEN HOLE DST
Test No. ONE
Formation SIL-DEVONIAN
Test Interval (ft) 8915 to 8981
Depth Reference KB

WELL LOCATION

Field WILDCAT
County ROOSEVELT
State NEW MEXICO
Sec/Twn/Rng S17 T7SR34E
Elevation (ft) 4335

HOLE CONDITIONS

Total Depth (MD/TVD) (ft) 8981/8981
Hole Size (in) 7.875
Casing/Liner I.D. (in) 8.625
Perf'd Interval/Net Pay (ft) .. / 8
Shot Density/Diameter (in) ...

MUD PROPERTIES

Mud Type SALT GEL/ STARC
Mud Weight (lb/gal) 9.6
Mud Resistivity (ohm.m) 0.053 @ 78F
Filtrate Resistivity (ohm.m)..
Filtrate Chlorides (ppm) 148000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) 4777.95
Gas Cushion Type
Surface Pressure (psi)
Liquid Cushion Type
Cushion Length (ft)

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 8127 / 3.82
Collar Length (ft)/I.D. (in) .. 775 / 2.50
Packer Depths (ft) 8909,8915,
Bottomhole Choke Size (in)94
Gauge Depth (ft)/Type 8894/SB-20394

NET PIPE RECOVERY

Volume	Fluid Type	Properties
6585 ft	TOTAL FLUID	
800 ft	DRLG. FLUID	Rw 0.353 @ 85F 150000ppm
	FORMATION	
5785 ft	WATER	Rw 0.167 @ 83F 35000ppm

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
0 cuft	Gas	
0 cc	Oil	API 00F
2500 cc	Water	Rw 0.156 @ 89F 35000ppm
0 cc	Mud	
Pressure: 150		GOR: 0 GLR: 0

INTERPRETATION RESULTS

Model of Behavior
Fluid Type Used for Analysis..
Reservoir Pressure (psi)
Transmissibility (md.ft/cp) ..
Effective Permeability (md) ..
Skin Factor/Damage Ratio
Storativity Ratio, Omega
Interporos.Flow Coef..Lambda..
Distance to an Anomaly (ft) ..
Radius of Investigation (ft)..
Potentiometric Surface (ft) ..

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API)
Basic Solids (%)
Gas Gravity
GOR (scf/STB)
Water Cut (%)
Viscosity (cp)
Total Compressibility (1/psi).
Porosity (%) 10
Reservoir Temperature (F) 162
Form.Vol.Factor (bbl/STB)

PRODUCTION RATE DURING TEST: Data Report

COMMENTS:

THIS ON BOTTOM CONVENTIONAL DST OF THE SILURO DEVONIAN FORMATION (8915-8981) PRODUCED A TOTAL OF 6585'. 800' DRLG. FLUID $R_w = 0.353 @ 85 \text{ DegF}$, $C_1 = 150,000 \text{ PPM}$ 5785' FORMATION WATER (SULFUR WATER) $R_w = 0.167 @ 83 \text{ DegF}$, $C_1 = 35,000 \text{ PPM}$. NO CUSHION WAS RAN. THE TOOL WENT TO BOTTOM WITH NO PROBLEMS. FOR ANY QUESTIONS REGARDING THIS REPORT CALL SCHLUMBERGER IN HOBBS, NEW MEXICO AT 505/393-4107. THANK YOU FOR USING SCHLUMBERGER.

Correction: $R_m = .048 @ 85^\circ$

$R_w = .167 @ 83^\circ = 35,000 \text{ ppm}$

Schlumb logging truck
measured $.0794 @ 82^\circ \text{F}$
from Sampler fluid.

$.0794 @ 82^\circ \text{F} = .048 @ 145^\circ \text{F}$
static Temp.
 $= 80,000 \text{ ppm}$

ROSWELL GEOLOGICAL SOCIETY SYMPOSIUM

Author: George L. Scott, Jr.
Affiliation: Consulting Geologist
Date: November 1966

Field Name: Chaveroo
Location: T-7,8-S, R-33, 34-E
County & State: Chaves & Roosevelt Counties,
New Mexico

Discovery Well: Champlin Pet. Co. & Warren American Oil Co. #1 Hondo State, SE/4 NE/4
Section 32, T-7-S, R-33-E. Completed 3/20/65
IPP 148 BOPD + 2 BWP, GOR 810.

Exploration Method Leading to Discovery: 80% subsurface 20% seismic

Pay Zone: Top of field pay is at 4184 (+255)
Formation Name: San Andres Depth & Datum Discovery Well: Top perf in disc. well 4299.
Lithology Description: Tan to brown, fine to medium crystalline dolomite with scattered anhydrite inclusions, and vugular, inter-crystalline and fracture porosity. Most wells complete from 1st to 2nd porosities; scattered wells also perf 3rd porosity. The net porosity is based on a cut-off of 4% and covers only 1st and 2nd porosities. (Cont. under Type Trap)
Approximate average pay: 210 gross 40 net Productive Area 11,000 acres (on Nov. 1, 1966)

Type Trap: Stratigraphic. Porosity and permeability fails up dip along the north and west margin of the field to provide the trap.

Pay Zone (cont. from above). Net porosity map is not a strict net pay map as there are wells where extensive fracturing has lowered the porosity cut-off to 2 1/2%. It also includes porosity in the 2nd porosity interval at the south and southeast field margin that is

Reservoir Data: below the irregular oil-water contact.

6% Porosity, 7 Md Permeability, 25% Sw, 16% So

Oil: 26° API, black, sour

Gas: GOR 400 to 1000

Water: 66,600 Na+K, 27,680 Ca, 4860 Mg, 165,600 Cl, 200 SO₄, 240 HCO₃, Fe

Specific Gravity 1.174 Resistivity .035 ohms @ 110 °F

Initial Field Pressure: 1340 psi @ +140 datum Reservoir Temp. 110°F

Type of Drive: Solution gas

FM
WATER

Normal Completion Practices: Set casing through pay and selectively perforate with one shot per interval. Acidize with 2000 gallons of acid, and sand fracture with 30,000 gallons of oil and 30,000 pounds of sand.

Type completion: Both flowing and pumping Normal Well Spacing 40 Acres

Deepest Horizon Penetrated & Depth: Bough "C" at 9100' in the discovery well. At the south end of the field several abandoned Bough "C" wells have been plugged back to the San Andres

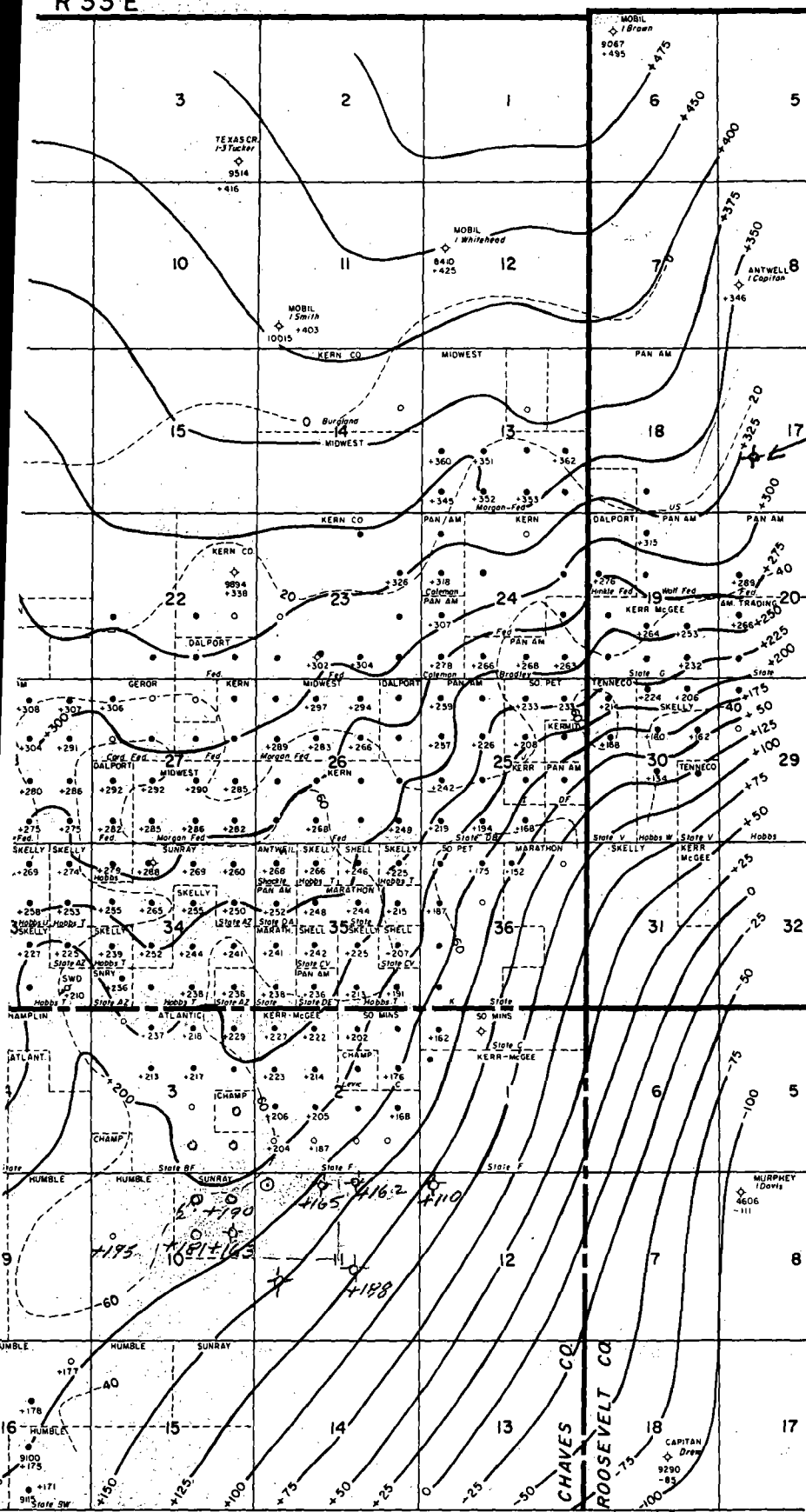
Other Producing Formations in Field: None within the area of San Andres production, however, Bough "C" production in the Tobac field adjoins the Chaveroo San Andres field on the south.

Production Data:

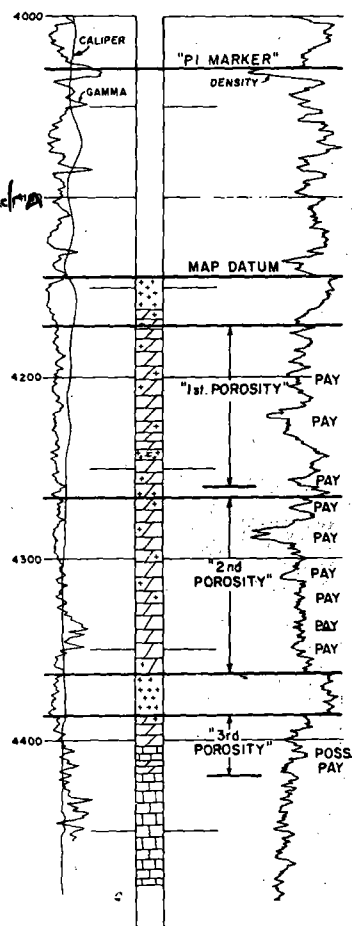
YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF		YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF	
		Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE			Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE
1965	OIL	45		166,896	166,896		OIL				
	GAS			179,400	179,400		GAS				
1966*	OIL	241		1,474,705	1,641,601		OIL				
	GAS			1,084,527	1,263,927		GAS				
	OIL						OIL				
	GAS						GAS				
	OIL						OIL				
	GAS						GAS				

* 1966 production to September 30, 1966.

R 33 E



TYPE LOG



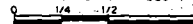
LEGEND

- SAN ANDRES WELLS
● BOUGH "C" WELLS
- ISOPACH OF NET POROSITY GREATER THAN
4 PERCENT IN THE 1ST AND 2ND
POROSITY INTERVALS (SEE PAY ZONE
DISCUSSION)

CHAVEROO FIELD

ROOSEVELT & CHAVES CO'S. N. MEXICO
STRUCTURAL CONTOURS ON TOP OF
ANHYDRITE BED NEAR FIELD PAY
CONTOUR INTERVAL 25'

SCALE IN MILES

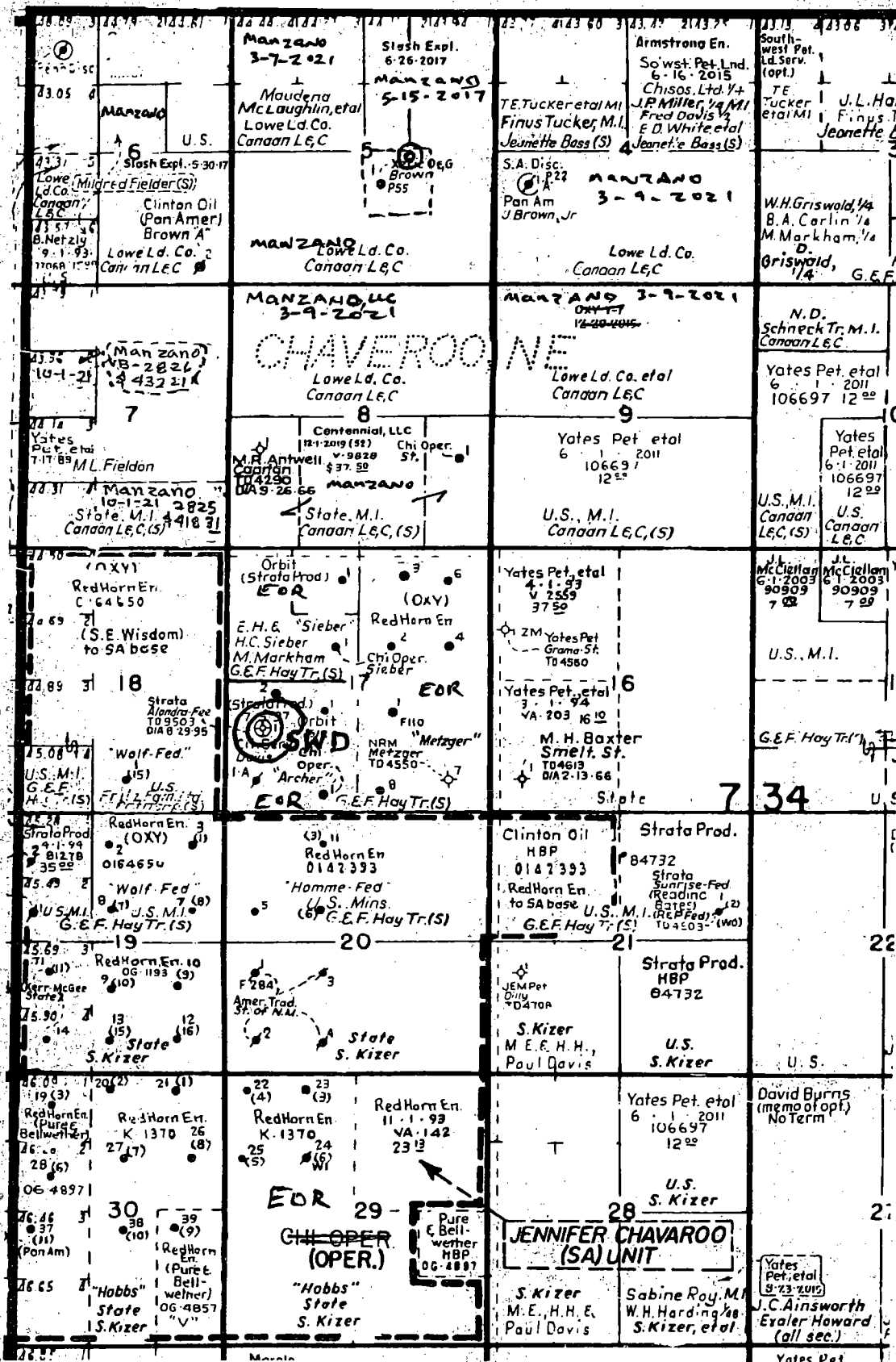


GEORGE L. SCOTT

NOV 1966

LEASE MAP

The proposed Salt water disposal well is the Manzano, LLC Alondra SWD #1, Section 17-T7S-R34E, 1650 from south line, 730 from west line.



NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON YOU MAY REMOVE OR STRIKE ANY OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVERS LICENSE NUMBER.

MEMORANDUM OF SALT WATER DISPOSAL AGREEMENT

THE STATE OF NEW MEXICO }
 }
COUNTY OF ROOSEVELT } **KNOW ALL MEN BY THESE PRESENTS:**

That the undersigned, **GEORGE HAY, LLC**, a New Mexico limited liability company, (hereinafter referred to as "Grantor"), whose address is 1728 Avenue Q, Portales, NM 88130 has executed and delivered to **MANZANO, LLC**, a New Mexico limited liability company, (hereinafter referred to as "Grantee"), whose address is P.O. Box 1737, Roswell, NM 88202, a **SALT WATER DISPOSAL AGREEMENT** (the "Agreement") dated January 25, 2017 upon the lands described as:

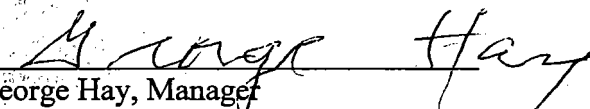
Section 17, Township 7 South, Range 34 East, N.M.P.M., Roosevelt County, New Mexico

Now Therefore, for the consideration set forth in said Agreement, Grantor does hereby grant, lease and let unto Grantee all of the rights as specified therein, to the above described lands.

This Memorandum of Salt Water Disposal Agreement shall be binding on all parties, their heirs, successors and assigns.


GRANTOR:

GEORGE HAY, LLC,
a New Mexico limited liability company

By: 
George Hay, Manager

GRANTEE:

MANZANO, LLC,
a New Mexico limited liability company

By: 
Michael G. Hanagan, Manager

ACKNOWLEDGMENTS

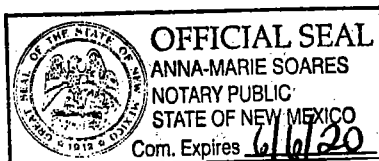
STATE OF NEW MEXICO }
 }
COUNTY OF ROOSEVELT }

This instrument was acknowledged before me on the 27th of January 2017, by George Hay, Manager of George Hay, LLC, a New Mexico limited liability company, on behalf of said company.

Sherry J. Rose
Notary Public
My Commission Expires: 10-23-19

STATE OF NEW MEXICO }
 }
STATE OF CHAVES }

This instrument was acknowledged before me on the 25th of January 2017, by Michael G. Hanagan, Manager of Manzano, LLC, a New Mexico limited liability company, on behalf of said company.



AM Soares
Notary Public

SKH

LEGAL NOTICE

Notice is hereby given of the application of Manzano, LLC, P O Box 1737, Roswell, New Mexico to the Oil Conservation Division, and to Commissioner of Public Lands, State of New Mexico, for approval to reenter and convert the Alondra #1 well to a salt water disposal well in the Devonian formation. The surface is owned by George Hay of Portales, New Mexico.

The Manzano, LLC Alondra SWD #1, API#3004120877, is located at 1650 Fsl, 730 Fwl in Section 17, Township 7 South, Range 34 East of Roosevelt County, New Mexico.

The injection interval is the Devonian formation present at depths between 8880 and 9503 feet. The maximum injection pressure it to be 1776 psi and the maximum injection rate is 20,000 BWPD.

Interested parties should file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen days.

Inquiries regarding this application should be directed to Mike Hanagan, P O Box 1737, Roswell, New Mexico 88202.

Manzano, L
P O Box 1737
Roswell, NM 882
575-623-1996

February 1, 2017

EOR Operating
One Riverway Suite 610
Houston, Texas 77056

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Sent To **EOR OPERATING**
Street, Apt. No.,
or PO Box No. **ONE RIVERWAY STE 610**
City, State, ZIP+4 **HOUSTON, TX 77056**

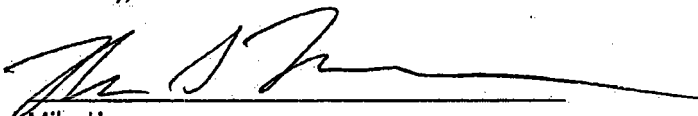
PS Form 3800, August 2006 See Reverse for Instructions

RE: Notice of SWD Permit Being Filed
Manzano, LLC Alondra SWD#1

Ladies and Gentlemen,

For your notice, attached is a copy of a permit filed with the New Mexico Oil Conservation Division, located at 1220 South St. Francis Drive, Santa Fe, NM 87505. In this application, Manzano, LLC is proposing to reenter and inject water at 8880 to 9503 in the Devonian formation in the former Alondra Fee #1, located at 1650 Fsl, 730 FWL in Section 17-T7S-R34E. EOR Operating is shown as the operator of record of the rights from surface to the base of the San Andres formation in this acreage. Manzano has worked out a salt water disposal agreement with the surface owner, a memorandum of this agreement is attached. Should you have any questions please contact Mike Hanagan, 575-623-1996 or 575-420-8821 cell.

Sincerely,


Mike Hanagan
On Behalf of Manzano, LLC

Manzano, LL
P O Box 1737
Roswell, NM 88201
575-623-1996

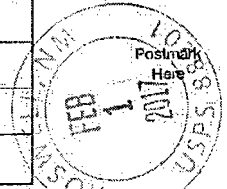
February 1, 2017

Strata Production Company
Attention: Mark Murphy, President
P O Box 1030
Roswell, NM 88202

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(Domestic Mail Only, No Insurance Coverage Provided)

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Total Postage & Fees \$



Name (Please Print Clearly) (To be completed by mailer)

STRATA PRODUCTION CO.
Street, Apt. No., or PO Box No.
ATTN: MARK MURPHEY, P.O. BOX 1030
City, State, ZIP+4
ROSWELL, NM 88202

PS Form 3800, July 1999 See Reverse for Instructions

RE: Notice of SWD Permit Being Filed
Manzano, LLC Alondra SWD#1

Dear Mark,

For your notice, attached is a copy of a permit filed with the New Mexico Oil Conservation Division, located at 1220 South St. Francis Drive, Santa Fe, NM 87505. In this application, Manzano, LLC is proposing to reenter and inject water at 8880 to 9503 in the Devonian formation in the former Alondra Fee #1, located at 1650 Fsl, 730 FWL in Section 17-T7S-R34E. A records check revealed Strata Production Company is the operator of record of deep rights in this acreage. Manzano has worked out an agreement with the surface owner, a memorandum of this agreement is attached. Should you have any questions please contact Mike Hanagan, 575-623-1996 or 575-420-8821 cell.

Sincerely,

Mike Hanagan

On Behalf of Manzano, LL

SENDER: COMPLETE THIS SECTION

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- 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:

Strata Production Company
Attention: Mark Murphey, President
P.O. Box 1030
Roswell, NM 88202

2. Article Number (Transfer from service label)

7099 3220 0004 0016 9013

9590 9403 0499 5173 0147 52

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☒ Agent
☐ Addressee

B. Received by (Printed Name)

Erica de la Cruz

C. Date of Delivery

FEB 1 2017

D. Is delivery address different from item 1? ☒ Yes ☐ No
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| <input type="checkbox"/> Collect on Delivery Restricted Delivery | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
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| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) | |

Manzano, LLC
P O Box 1737
Roswell, NM 88202
575-623-1996

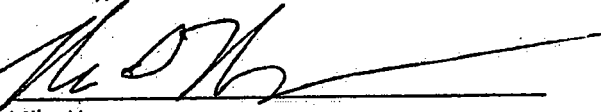
February 1, 2017

George Hay
1728 Avenue,
Portales, NM 88130

Mr. Hay,

Per our recent discussions and salt water agreement, attached for your notice is a copy the permit filed with the New Mexico Oil Conservation Division, located at 1220 South St. Francis Drive, Santa Fe, NM 87505. In this application, Manzano, LLC is proposing to reenter and inject water at 8880 to 9503 in the Devonian formation in the former Alondra Fee #1, located at 1650 Fsl, 730 FWL in Section 17-T7S-R34E. Should you have any questions please contact Mike Hanagan, 575-623-1996 or 575-420-8821 cell.

Sincerely,



Mike Hanagan
On Behalf of Manzano, LLC

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City, State, ZIP+4® **PORTALES, NM 88130**

PS Form 3800, August 2008 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
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1. Article Addressed to: George Hay 1728 Avenue Q Portales, NM 88130	
2. Article Number (Transfer from service label) 7006 3450 0001 4288 5799	3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> All Restricted Delivery
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PS Form 3811, April 2015 PSN 7530-02-000-9053 Domestic Return Receipt

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March 9, 2017 , 5:32 am	Departed USPS Facility	NORTH HOUSTON, TX 77315
March 8, 2017 , 12:09 am	Arrived at USPS Facility	NORTH HOUSTON, TX 77315
March 7, 2017 , 1:39 am	Departed USPS Facility	LUBBOCK, TX 79402
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AFFIDAVIT OF LEGAL PUBLICATION

Legal # 56876 Copy of Publication

STATE OF NEW MEXICO
COUNTIES OF CURRY
AND ROOSEVELT:

The undersigned, being dully sworn, says:

That she is a Legal Clerk of

The Eastern New Mexico News

Newspaper of general circulation,

Published in English at Clovis and Portales,

said counties and state, and that the

hereto attached

Notice of Application

Legal 56876

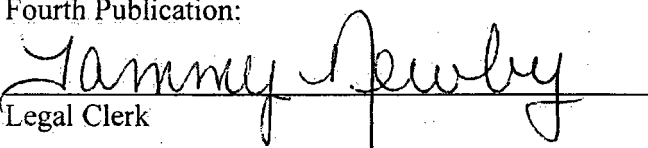
was published in The Eastern New Mexico News
a daily newspaper duly qualified for that purpose
within the meaning of Chapter 167 of the 1937
Session Laws of the State of New Mexico for
1 Days/weeks on the same days as follows:

First Publication: February 5, 2017

Second Publication:

Third Publication:

Fourth Publication:


Legal Clerk

Subscribed and sworn to before me,

February 5, 2017


Notary Public



OFFICIAL SEAL
LESLIE NAGY
NOTARY PUBLIC STATE OF NEW MEXICO

My commission expires on May 24, 2019

Notice is hereby given of the application of Manzano, LLC, P O Box 1737, Roswell, New Mexico to the Oil Conservation Division, and to Commissioner of Public Lands, State of New Mexico, for approval to reenter and convert the Alondra #1 well to a salt water disposal well in the Devonian formation. The surface is owned by George Hay of Portales, New Mexico.

The Manzano, LLC Alondra SWD #1, API#3004120877, is located at 1650 Fsl, 730 Fw in Section 17, Township 7 South, Range 34 East of Roosevelt County, New Mexico.

The injection interval is the Devonian formation present at depths between 8880 and 9503 feet. The maximum injection pressure is to be 1776 psi and the maximum injection rate is 20,000 BWPD.

Interested parties should file objections or requests for hearing with the Oil Conservation Division, 1220 South St Francis Drive, Santa Fe, NM 87505 within fifteen days.

Inquiries regarding this application should be directed to Mike Hangan, P O Box 1737, Roswell, New Mexico 88202.

Manzano, LLC

P O Box 1737
Roswell, NM 88207
575-623-1996

March 6, 2017

Re: Notice of SWD Application Being Filed with the NMOCD
Manzano Alondra SWD #1, Section 17-T7S-R34E

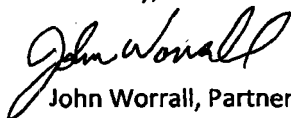
Hunter Oil Corporation
Attention: Mark Strawn
777 N. Eldridge Parkway Suite 150
Houston, Texas 77079

Mr. Strawn,

Please find attached a notice to offset operator we sent to EOR Operating on February 1. It was returned to us from the address EOR Operating had on file with the NMOCD. I understand from Mike Hanagan, that you have purchased EOR Operating whose subsidiary, Ridgeway Arizona, owns rights in the Chaveroo San Andres field.

The application is for Manzano to reenter the Alondra #1 located at 1650 Fsl and 730 Fwl in Section 17-T7S-R34E and inject water into the Devonian at 8880 to 9503 feet. EOR Operating is shown as the operator of record for this acreage within ½ mile of the proposed well, for rights from surface to the base of the San Andres formation. Manzano has worked out a salt water disposal agreement with the surface owner. Should you have any questions, please contact Mike Hanagan or me at 575-623-1996. Thank you.

Sincerely,



John Worrall, Partner
Cell 575-420-5853
jworrall@manzanoenergy.com

7016 3010 0000 1717 4679

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City, State, ZIP+4® HOUSTON, TX 77079	
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions	

MAR 2017
USPS 88201

Manzano, LLC
P.O. Box 1737
Roswell, New Mexico 88202-1737

February 28, 2017

Occidental Permian LP
5 East Greenway Plaza #110
Houston, Texas 77046-0521

RE: Salt Water Disposal Application
Alondra Fee #1
Section 17-T7S-R34E
Roosevelt County, New Mexico

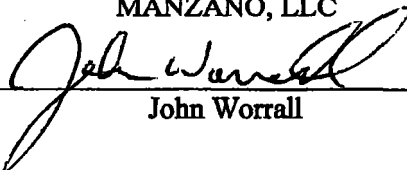
Ladies & Gentlemen,

Please find attached a copy of our permit concerning the application of Manzano, LLC to inject water into the Alondra Fee #1 located at 1650 Fsl and 730 Fwl in Section 17-T7S-R34E of Roosevelt County. We are proposing to inject water in the Devonian formation from 8880 to 9503 feet. Occidental Permian LP is the owner of operating rights below the San Andres in the E/2 of Section 17, within a 1/2 mile radius of the proposed injection well. Accordingly we are providing notice of our application to the NMOCD for injection.

Thank you and please feel free to contact me with any questions or comments (my cell phone number is 575-420-5853).

Sincerely,

MANZANO, LLC


John Worrall

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Total Postage and Fees

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Sent To

OCCIDENTAL PERMIAN LP
5 E. GREENWAY PLAZA #110
HOUSTON, TX 77046-0521

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

Manzano, LLC
P.O. Box 1737
Roswell, New Mexico 88202-1737

February 28, 2017

Permian Resources
P O Box 590
Midland, Texas 79702

RE: Salt Water Disposal Application
Alondra Fee #1
Section 17-T7S-R34E
Roosevelt County, New Mexico

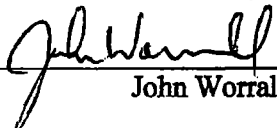
Ladies & Gentlemen,

Please find attached a copy of our permit concerning the application of Manzano, LLC to inject water into the Alondra Fee #1 located at 1650 Fsl and 730 Fwl in Section 17-T7S-R34E of Roosevelt County. We are proposing to inject water in the Devonian formation from 8880 to 9503 feet. Permian Resources is the Lessee of Record for BLM lease 0142393 which is located on adjoining lands in Sections 18-20, within a ½ mile radius of the proposed injection well. Accordingly we are providing notice of our application to the NMOCD for injection.

Thank you and please feel free to contact me with any questions or comments (my cell phone number is 575-420-5853).

Sincerely,

MANZANO, LLC


John Worrall

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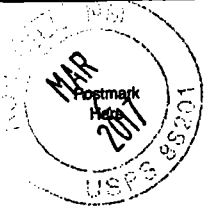
Sent To **PERMIAN RESOURCES**

Street and Apt. No., or PO Box No. **P.O. BOX 590**

City, State, ZIP+4® **MIDLAND, TX 79702**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7016 3010 0000 1717 4389

Manzano, LLC
P.O. Box 1737
Roswell, New Mexico 88202-1737

February 28, 2017

Occidental Permian LP
5 East Greenway Plaza #110
Houston, Texas 77046-0521

RE: Salt Water Disposal Application
Alondra Fee #1
Section 17-T7S-R34E
Roosevelt County, New Mexico

Ladies & Gentlemen,

Please find attached a copy of our permit concerning the application of Manzano, LLC to inject water into the Alondra Fee #1 located at 1650 Fsl and 730 Fwl in Section 17-T7S-R34E of Roosevelt County. We are proposing to inject water in the Devonian formation from 8880 to 9503 feet. Occidental Permian LP is the owner of operating rights below the San Andres in the E/2 of Section 17, within a 1/2 mile radius of the proposed injection well. Accordingly we are providing notice of our application to the NMOCD for injection.

Thank you and please feel free to contact me with any questions or comments (my cell phone number is 575-420-5853).

Sincerely,

MANZANO, LLC

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<input checked="" type="checkbox"/> Complete items 1, 2, and 3. <input checked="" type="checkbox"/> Print your name and address on the reverse so that we can return the card to you. <input checked="" type="checkbox"/> Attach this card to the back of the mailpiece, or on the front if space permits.		A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Address B. Received by (Printed Name) C. Date of Delivery	
1. Article Addressed to: Occidental Permian LP 5 East Greenway Plaza #110 Houston, TX 77046-0521		D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
2. Article Number (Transfer from service label) 7016 3010 0000 1717 4396		3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Adult Signature Restricted Delivery <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Insured Mail® <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Registered Mail™ <input type="checkbox"/> Registered Mail Restricted Delivery <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Signature Confirmation™ <input type="checkbox"/> Signature Confirmation Restricted Delivery	
9590 9402 2648 6336 3496 97		restricted Delivery	

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

7016 3010 0000 1717 4396

U.S. Postal Service™
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Extra Services & Fees (check box, add fee as appropriate)

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☐ Return Receipt (electronic) \$

☐ Certified Mail Restricted Delivery \$

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☐ Adult Signature Restricted Delivery \$

Postage

\$

Total Postage and Fees

\$

Sent To

OCCIDENTAL PERMIAN LP

Street and Apt. No., or P.O. Box No.

5 E. GREENWAY PLAZA #110

City, State, ZIP+4®

HOUSTON, TX 77046-0521

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



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EON/Hunter

Tracking Number: 70163010000017174679

Product & Tracking Information

Postal Product:

Features:
Certified Mail™

DATE & TIME	STATUS OF ITEM	LOCATION
March 9, 2017 , 10:10 am	Delivered, Front Desk/Reception	HOUSTON, TX 77079
Your item was delivered to the front desk or reception area at 10:10 am on March 9, 2017 in HOUSTON, TX 77079.		
March 9, 2017 , 5:32 am	Departed USPS Facility	NORTH HOUSTON, TX 77315
March 8, 2017 , 12:09 am	Arrived at USPS Facility	NORTH HOUSTON, TX 77315
March 7, 2017 , 1:39 am	Departed USPS Facility	LUBBOCK, TX 79402
March 6, 2017 , 11:09 pm	Arrived at USPS Facility	LUBBOCK, TX 79402

Available Actions

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Resources*

Tracking Number: 70163010000017174389

Product & Tracking Information

Postal Product:

Features:

Certified Mail™

DATE & TIME	STATUS OF ITEM	LOCATION
March 17, 2017 , 11:58 am	Delivered	MIDLAND, TX 79701
Your item was delivered at 11:58 am on March 17, 2017 in MIDLAND, TX 79701.		
March 15, 2017 , 11:55 am	Available for Pickup	MIDLAND, TX 79702
March 15, 2017 , 11:52 am	Arrived at Unit	MIDLAND, TX 79701
March 5, 2017 , 8:40 am	In Transit to Destination	
March 4, 2017 , 1:40 am	Departed USPS Facility	MIDLAND, TX 79711
March 3, 2017 , 2:42 am	Arrived at USPS Facility	MIDLAND, TX 79711
March 2, 2017 , 11:33 pm	Departed USPS Facility	LUBBOCK, TX 79402
March 2, 2017 , 10:48 pm	Arrived at USPS Facility	LUBBOCK, TX 79402

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[No FEAR Act EEO Data](#)

McMillan, Michael, EMNRD

From: McMillan, Michael, EMNRD
Sent: Monday, March 27, 2017 1:19 PM
To: 'John Worrall'
Cc: 'Mike Hanagan'; 'anna-marie@manzanoenergy.com'; Jones, William V, EMNRD; Goetze, Phillip, EMNRD
Subject: RE: Alondra SWD Well No. 1 tracking

John:
The OCD is concerned about injection into the Ellenburger formation.
Therefore, the OCD will require you to provide a cross-section that shows the Siluro-Devonian, Montoya, and possibly Ellenburger tops (there is approximately 150 feet of the well that the Schlumberger log did not cover).
As a result, I cannot recommend signature by the Director until that information is supplied.

Thanks
Mike

From: McMillan, Michael, EMNRD
Sent: Friday, March 17, 2017 9:54 AM
To: John Worrall <jworrall@manzanoenergy.com>
Cc: 'Mike Hanagan' <mike@manzanoenergy.com>; anna-marie@manzanoenergy.com
Subject: RE: Alondra SWD Well No. 1 tracking

Do you have return receipts for Oxy and Permian Resources?
Thanks
Mike

From: McMillan, Michael, EMNRD
Sent: Friday, March 10, 2017 1:44 PM
To: John Worrall <jworrall@manzanoenergy.com>
Cc: 'Mike Hanagan' <mike@manzanoenergy.com>; anna-marie@manzanoenergy.com
Subject: RE: Alondra SWD Well No. 1 tracking

John and Ann-Marie:
Thanks for the tracking for Hunter Oil Company
How about the tracking for the two other companies?
Mike

From: John Worrall [mailto:jworrall@manzanoenergy.com]
Sent: Friday, March 10, 2017 1:26 PM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Cc: 'Mike Hanagan' <mike@manzanoenergy.com>
Subject: FW:

Mike, The link below confirms our certified notice to EOR/Hunter was received. You can refer to the prior email this morning to see the numbers match up. Thank You. John

From: Anna-Marie Soares [mailto:anna-marie@manzanoenergy.com]

Sent: Friday, March 10, 2017 12:12 PM

To: jworrall@manzanoenergy.com

Subject:

<https://tools.usps.com/go/TrackConfirmAction.action?tRef=fullpage&tLc=2&text28777=&tLabels=70163010000017174679%2C%0D%0A>



Manzano, LLC

Oil & Gas Exploration and Production

Anna-Marie Soares

P.O. Box 1737 • Roswell, NM 88202-1737

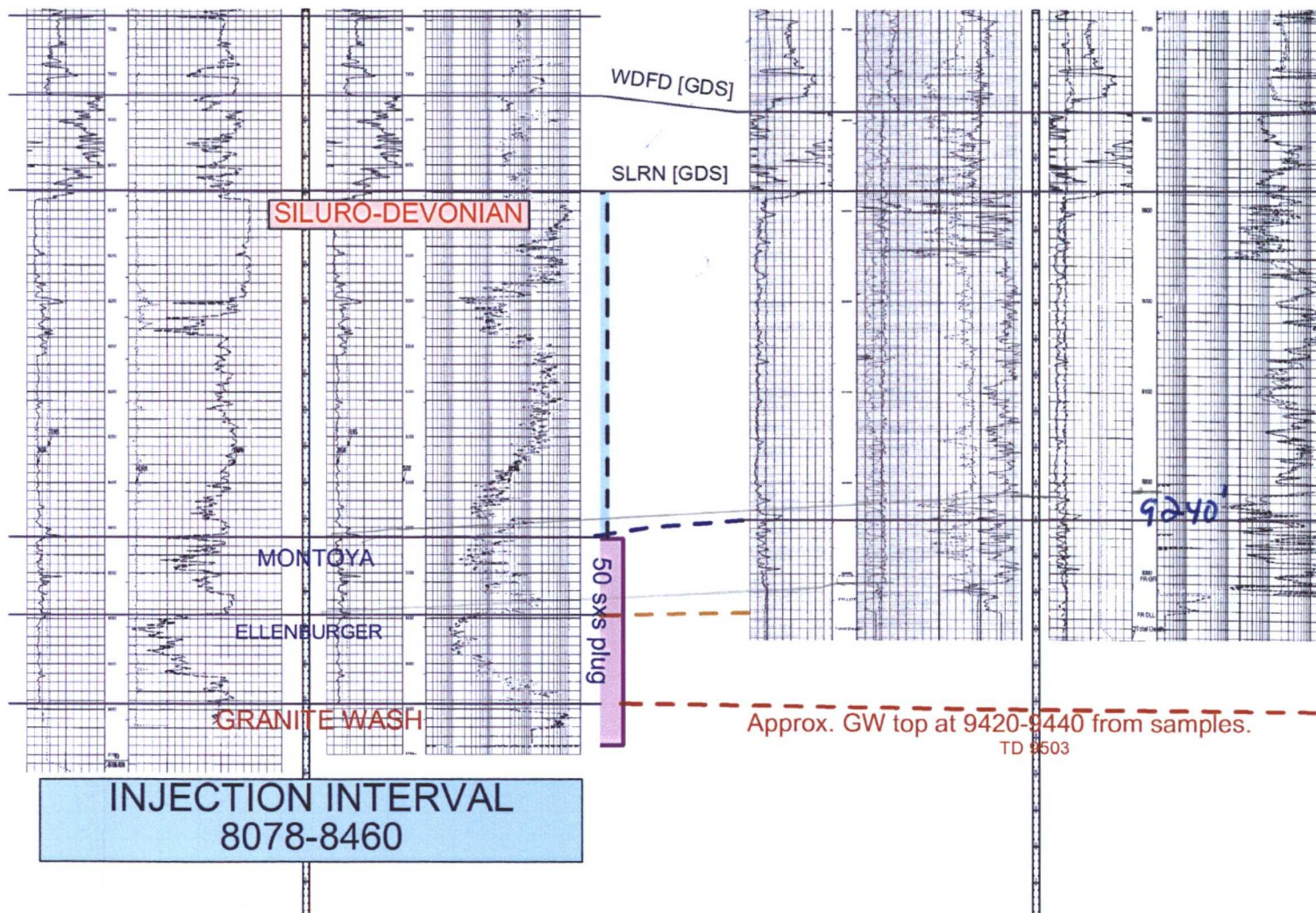
PH 505.625.1910 EXT. 301 • FAX 505.625.9620

EMAIL: anna.marie@manzanoenergy.com

WEBSITE: www.manzanoenergy.com

ARMSTRONG ENGY CORP
OLD HIPPIE
1
30041209610000
8,700

STRATA PROD
ALONDRA FEE
1
30041208770000
9,503



*I would
make them
run cement
9310'*

Mudlog File

17-1-34

WOODCO LOGGING SERVICE

3502 Cass Drive
Carlsbad, New Mexico 88220
(505) 887-2469



SAND



DOLOMITE



SHALE



ANHYDRITE



LIMESTONE



CHERT

COMPANY STRATA PRODUCTION CO.

WELL ALONDRA #1

LOCATION SECTION 17 TWP 7 RGE 34 E

COUNTY ROOSEVELT STATE NEW MEXICO

ELEVATION DR GL 4320' KB 4335'

SUPERVISING ENGR. D. STINECIPHER / J. WOOD JR.

DEPTH LOGGED FROM 6800' TO 9358'

DATE LOGGED FROM 8-9-95 TO 8-24-95

NRS - NEW BIT

DCB - DIAMOND CORE BIT

DST - DRILL STEM TEST

NR - NO RETURN

CO - CIRCULATED OUT

METHANE

PROPANE

PENTANE

ETHANE

BUTANE

DRILLING RATE		TFG PORO.	LITHOLOGY	LEACHED UNIT TFG	FLUOR % OIL	OIL STAIN	HYDROCARBON ANALYSIS LOG		REMARKS					
MIN/FT							TWO MAN SERVICE TOTAL GAS	* CHROMATOGRAPH ANALYSIS	W	V	F	CK	PH	CL
CONT. ZIADRIL RIG 7							BEGIN LOGGING 12 NOON 8-9-95							
SET 8 5/8" CSG. AT 3483'														
DEV. AT 6754' = 3/4°														
20														
40														
60														
80														

Scott Exploration, Inc.
Suite 648, Petroleum Bldg
Roswell, NM 88201

Property of
New Mexico Energy Library, Inc.
312 N. Main Street
Roswell, NM 88201

Scott Exploration, Inc.

Suite 648, Petroleum Bldg.
Roswell, New Mexico 88201
Tel: (505) 622-5891

August 27, 1995

SAMPLE DESCRIPTIONS

Strata Production Company
Allondra Fee #1 well
Section 17-T7S-R34E
1650' FSL & 730' FWL
Roosevelt County, N.M.

DEPTH

9360-70	40% Dolomite: med-lt brn, vfxln, dns, sm sucrosic, no show 30% Limestone: wht/lt brn microxln, sft 20% Shale: Red beds, sft/frm, washed, cavings 10% Chert: Clr, Gry-Blu, angular
9370-80	50% Dolo: lt brn/tn vfxln, dns, sm sucrosic, no show 20% Shale: Red Beds, Cavings, sft/frm, washed 20% Limestone: wht/lt brn, sft, microxln 10% Chert: wht/brn, angular
9380-90	60% Dolo: lt brn/tn vfxln, dns, sm sucrosic, no show 20% Shale: As Above 10% Limestone: wht/lt brn, sft/frm, vfxln 10% Chert: wht/clr/brn, angular
9390-9400	80% Dolo: lt-med brn/tn vfxln, sm dens/sm sucrosic no show 10% Limestone: wht/lt brn, vfxln, sft 10% Shale: Red Beds, sft/frm, cavings TRC Chert: wht/clr/brn, angular
9400-10	Same as above
9410-20	80% Dolo: lt-med brn/yel-brn, vfxln, sm dns, sm sucrosic, no show 10% Limestone: wht, microxln, sft/frm 10% chert Trc Sand: uncons quartz grns, sub ang/subrnd
9420-30	80% Dolo: Lt brn/ yel-brn, dns, frm, microxln 10% SS: clr/wht, uncons, subang-subrnd, vf-fg, poorly srted, 10% Chert: wht/brn, translucent, angular

9430-40 80% Dolo: lt brn/yel brn, dns, frm, microxln
20% SS: clr/wht,vf-fg, uncons, subang, prly strd
Trc Chert: wht/brn, translucent, angular

9440-50 75% Dolo: As above
25% SS: As above

9450-60 30% Quartz: clr/wht,angular,sm intgrn w/drkn mins
vf-med grn
60% Dolo: lt brn/yel brn, vfxln, dns
10% Chert: wht/brn, angular,

9460-70 50% Quartz: clr/wht, angular, intgrn w/drkn mins, poss
sm feldspar w grn stn, poss sm chlorite
40% Dolo: Lt brn/ yel-brn, vfxln, dns
10% Shale: red beds,cavings

9470-80 70% Quartz: clr/wht, angular, intgrn w/drkn mins,poss
sm feldspar w grn stn, poss sm chlorite
20% Dolo: Lt brn/ yel-brn, vfxln, dns
10% Shale: red beds,cavings

McMillan, Michael, EMNRD

From: John Worrall <jworrall@manzanoenergy.com>
Sent: Monday, April 3, 2017 11:42 PM
To: McMillan, Michael, EMNRD; Goetze, Phillip, EMNRD
Cc: 'Mike Hanagan'
Subject: Alondra formation tops and cross section, SWD Application
Attachments: allondra ML & samples.pdf; cross section.JPG

Mike and Philip,

Per your request I attach a cross section from the Old Hippie #1 (Section 32-T6S-R34E) logs to the Strata Production Alondra #1 (Section 17-T7S-R34E). This is a stratigraphic section showing the porosity and resistivity log for each well hung from the top of the Devonian. Recall that the Alondra SWD application was made before Philip Goetz informed me of the significance of the presence of the Ellenberger and Granite Wash for SWD permits during his analysis of the subsequent Old Hippie application. And recall that both wells are located along the southern portion of the Matador Arch. This is an area of abbreviated section from the top of the Devonian to the top of Granite Wash. The interval is over 2000 feet thick only a few miles to the south. So it makes correlations a little tricky.

The logs show a clear Woodford and Siluro-Devonian section. In the Alondra well, I interpret the top of the Montoya is present at 9240. It has similar porosity and gamma ray character to the Montoya section in the Old Hippie #1. The top of the Ellenberger on depth should have come in at approximately 9340 in the Alondra well. I retrieved all available information from Strata Production Company who graciously provided me with the mudlog and sample descriptions (Attached). The Alondra was drilled to a depth of 9365 feet in 1995. See the attached mudlog. Most of the interval below the Woodford, from 8870 to 9200 feet drilled at 7 minutes per foot. From 9200 to 9365, the rate slowed to over 20 minutes per foot in what should have been the depth of the Ellenberger (9340). So either the Ellenberger is not present, or it is present but it was tight or the bit was worn out. But in any event, I agree the best (and safest) guess for an Ellenberger top is 9340 feet. After logging, Strata went back and drilled another 140 feet to a TD of 9503 feet and then plugged and abandoned the hole without running production casing. They did not mudlog or log the interval from 9365 to 9503 but they did provide me with sample descriptions prepared by geologist George Scott Jr. (my father-in-law). Sample descriptions for this bottom 140 ft interval show they started picking up some sand at 9420 feet suggesting they were entering the Granite Wash.

In the SWD application of the Old Hippie, we were able to resubmit our application by agreeing to set a 50 sxs plug from TD to 8460 feet, and refile the wellbore diagram and injection sheets. If it meets with your approval, we would be pleased to do the same thing with the Alondra SWD application. If you will tell me how high to bring the cement, I will reattach a new wellbore diagram and injection sheets to emplace a cement plug over the Granite Wash/Ellenberger section.

Thank you for your time and patience in reviewing our application.

Sincerely,

John Worrall
Geologist, Manzano, LLC

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

PLSS Search:

Section(s): 7-9, 16-21

Township: 07S

Range: 34E

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.

4/5/17 10:21 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



C-108 Review Checklist:

Received: _____ Add. Request: _____ Reply Date: _____ Suspended: _____ [Ver 15]

ORDER TYPE: WFX / PMX / SWD Number: 1669 Order Date: _____ Legacy Permits/Orders: _____Well No. 1 Well Name(s): ALONDROFEE SW1API: 30-0 4-20877 Spud Date: 7/29/1995 New or Old: N (UIC Class II Primacy 03/07/1982)Footages 730FWL Lot _____ or Unit I Sec 17 Tsp 7S Rge 34E County ROOSEVELTGeneral Location: 225 miles SE of Kern (Downtown) Pool: SWD, Devonian-Silurian Pool No.: 97869BLM 100K Map: E11dg Operator: MANZANILLA OGRID: 231429 Contact: SWD, DEVONIANCOMPLIANCE RULE 5.9: Total Wells: 36 Inactive: 0 Final Assur: OK Compl. Order: MA IS 5.9 OK? X Date: 4-6-2017WELL FILE REVIEWED ☐ Current Status: P&AWELL DIAGRAMS: NEW: Proposed ☐ or RE-ENTER: Before Conv. ☐ After Conv. ☒ Logs in Imaging: XPlanned Rehab Work to Well: RUN 5 1/2" casing, circulates surface. Run 3 1/2" tubing, plug 2920

Well Construction Details

Sizes (in)
Borehole / PipeSetting
Depths (ft)Cement
S or Cf

Cement Top and Determination Method

Planned ___ or Existing ___ Surface	<u>17 1/2 / 13 7/8</u>	<u>345 3/4</u>	Stage Tool	<u>425</u>	<u>SURFACE / VISUAL</u>
Planned ___ or Existing ___ Interm/Prod	<u>12 1/4 / 8 5/8</u>	<u>346 5</u>		<u>1600</u>	<u>SURFACE / VISUAL</u>
Planned ___ or Existing ___ Interm/Prod					
Planned ___ or Existing ___ Prod/Liner					
Planned ___ or Existing ___ Liner					
Planned ___ or Existing ___ OH / PERF			Inj Length		

Completion/Operation Details:

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.		<u>DV</u>	<u>8878</u>
Confining Unit: Litho. Struc. Por.		<u>W2</u>	<u>8790</u>
Proposed Inj Interval TOP:			
Proposed Inj Interval BOTTOM:			
Confining Unit: Litho. Struc. Por.			
Adjacent Unit: Litho. Struc. Por.			

Drilled TD 9503 PBTD _____
 NEW TD _____ NEW PBTD _____
 NEW Open Hole ☒ or NEW Perfs ☐
 Tubing Size 32 in. Inter Coated? X
 Proposed Packer Depth 8780 ft
 Min. Packer Depth 878 (100-ft limit)
 Proposed Max. Surface Press. 1776 psi
 Admin. Inj. Press. 1776 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P MA Noticed? _____ BLM Sec Ord ☐ WIPP ☐ Noticed? _____ Salt/Salado T: _____ B: _____ NW: Cliff House fm _____FRESH WATER: Aquifer MA Max Depth _____ HYDRO AFFIRM STATEMENT By Qualified Person ☐NMOSE Basin: CLOVIS CAPITAN REEF: thru adj NA No. Wells within 1-Mile Radius? 0 FW Analysis MADisposal Fluid: Formation Source(s) San Andres Analysis? X On Lease ☐ Operator Only ☐ or Commercial ☒Disposal Int: Inject Rate (Avg/Max BWPD): 20K/40K Protectable Waters? MA Source: _____ System: Closed or OpenHC Potential: Producing Interval? MA Formerly Producing? _____ Method: Logs DST/P&A Other _____ 2-Mile Radius Pool Map ☒AOR Wells: 1/2-M Radius Map? X Well List? _____ Total No. Wells Penetrating Interval: _____ Horizontals? _____Penetrating Wells: No. Active Wells 0 Num Repairs? _____ on which well(s)? _____ Diagrams? _____Penetrating Wells: No. P&A Wells 0 Num Repairs? _____ on which well(s)? _____ Diagrams? _____NOTICE: Newspaper Date February 5, 2017 Mineral Owner _____ Surface Owner George Hays N. Date Feb 7, 2017RULE 26.7(A): Identified Tracts? _____ Affected Persons: STNA, EOR, Hunter N. Date March 9, 2017Order Conditions: Issues: Plug back from 9503-9200 w/ 80 SXS

Add Order Cond: _____