

ABOVE THIS LINE FOR DIVISION USE ONLY

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



*Suspense  
2/12/2017  
MAM  
2/15/2017  
2/17/2017*

**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 \_\_\_\_\_

*- SWD  
- MANZANO LLC  
231429*

*Well  
- Alondra Ecct #1  
30-041-20877*

*Pool*

*- SWD, Devonian  
Silurian  
F6121*

*47869*

[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  
 Print or Type Name

see Application  
 Signature

MANAGER  
 Title

February 1, 2017  
 Date

Mike@MANZANOenergy.com  
 e-mail Address

**Manzano, LLC**

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

RECEIVED 003

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,



Mike Hanagan  
On Behalf of Manzano, LLC

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery Pressure Maintenance  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  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:  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 ½ 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  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.

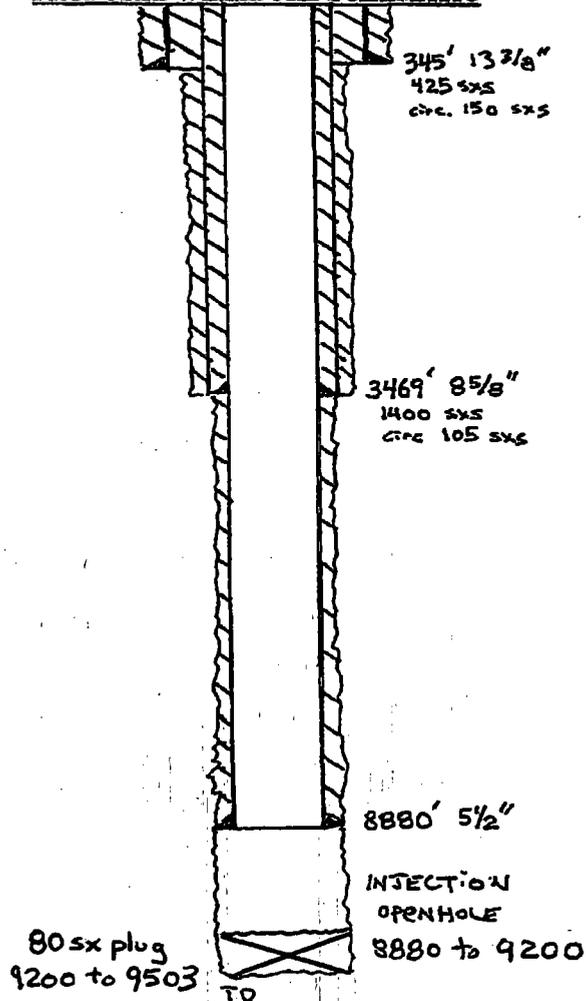
Side 1

### 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 sx.

or \_\_\_\_\_ ft<sup>3</sup>

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 \_\_\_\_\_ ft<sup>3</sup>

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 sx.

or 1950 ft<sup>3</sup>

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'**

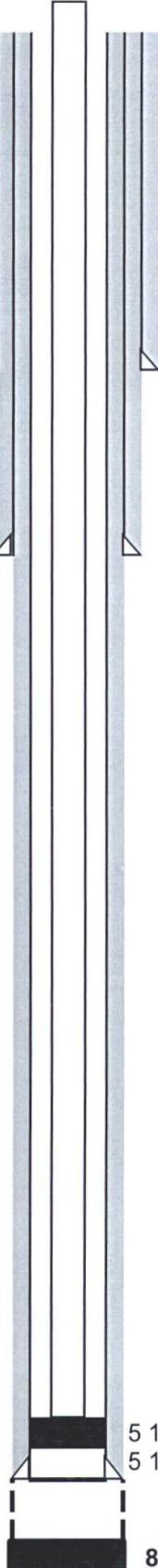
**Cisco @ 8480'**

**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**



Submit 3 Copies  
to Appropriate  
District Office  
DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico  
Energy, Mine and Natural Resources Department

Form C-103  
Revised 1-1-69

**OIL CONSERVATION DIVISION**  
2040 South Pacheco  
Santa Fe, New Mexico 87505

DISTRICT II  
811 S. First Street, Artesia, NM 88210

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

WELL API NO.  
**30-041-20877**

5. Indicate Type of Lease  
STATE  FEE

6. State Oil & Gas Lease No.

**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 WELL  GAS WELL  OTHER  **Plugged and Abandoned**

7. Lease Name or Unit Agreement Name  
**Alondra Fee**

2. Name of Operator  
**STRATA PRODUCTION COMPANY**

8. Well No.  
**#1**

3. Address of Operator  
**P. O. BOX 1030, ROSWELL, NEW MEXICO 88202-1030**

9. Pool Name or Wildcat  
**Wildcat Siluro Devonian**

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:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OP'NS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>		CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: <input type="checkbox"/>		OTHER: <input type="checkbox"/>	

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

Form C-105  
 Revised 1-1-89

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

WELL API NO.  
 30-041-20877

5. Indicate Type of Lease  
 STATE  FEE

6. State Oil & Gas Lease No.

**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 NMIM Roosevelt County

7. Lease Name or Unit Agreement Name  
 Alondra Fee

8. Well No.  
 #1

9. Pool name or Wildcat  
 Wildcat-Siluro Devonian

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 0-9503' Cable Tools

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

**LINER RECORD**

**TUBING RECORD**

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	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

**PRODUCTION**

28. 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



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 SO<sub>4</sub>, 240

HCO<sub>3</sub>, Fe

FM WATER

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

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

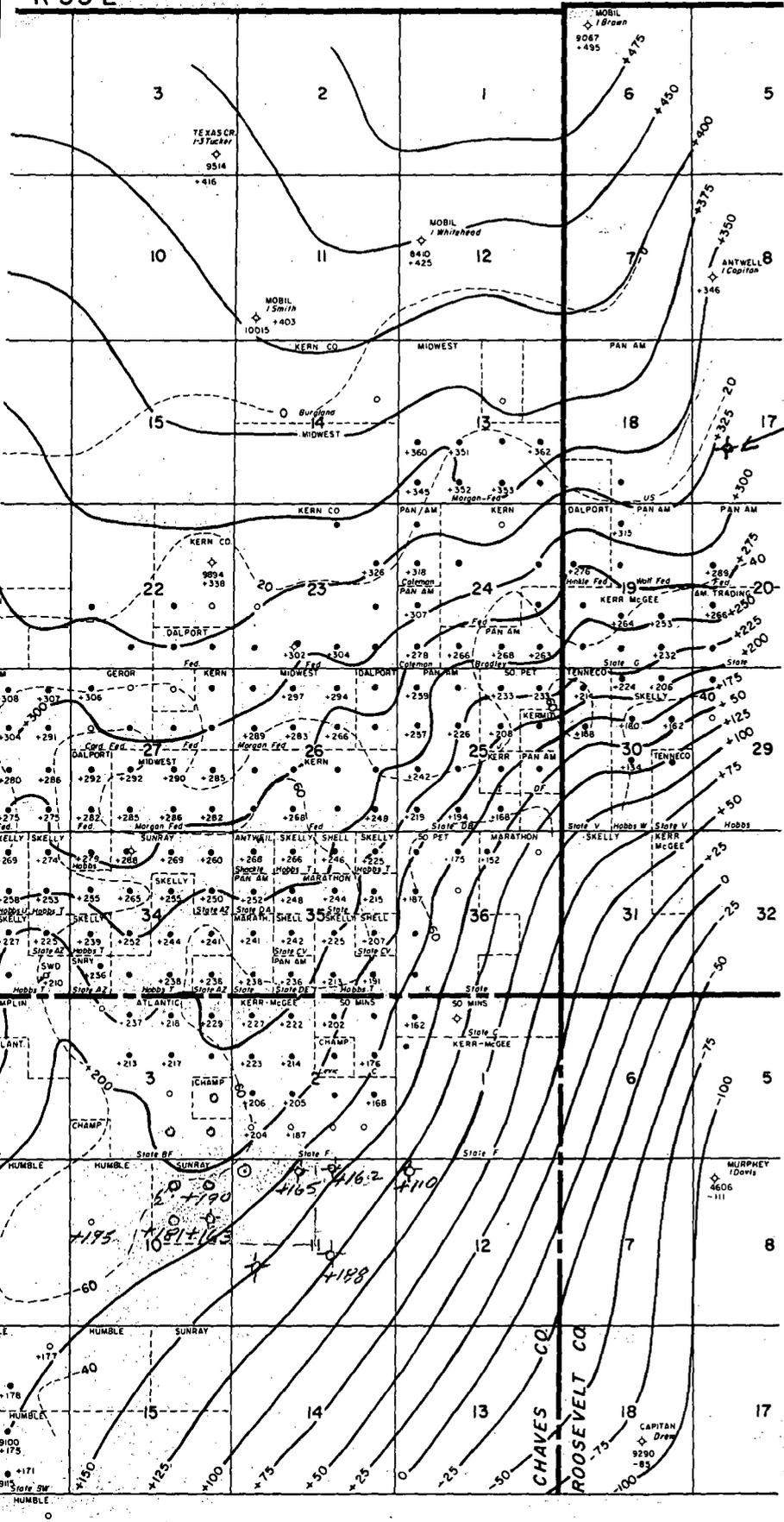
Other Producing Formations in Field: None within the area of San Andres production, however, Bough "C" production in the Tobac field adjoins the Chaveroo San Andres field on the south.

Production Data:

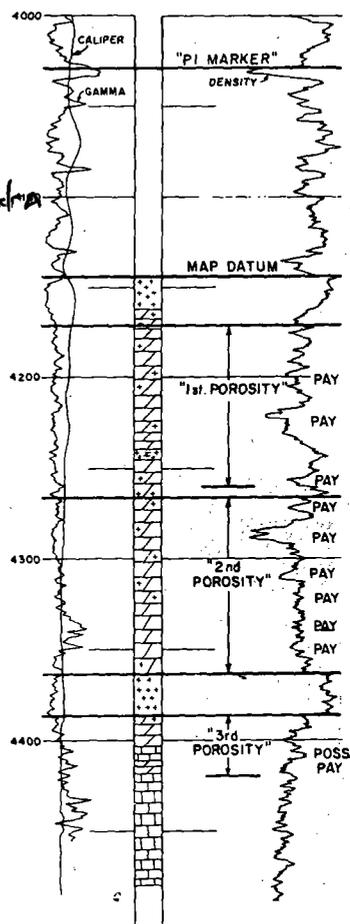
YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF		YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF	
		Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE			Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE
1965	OIL	45		166,896	166,896		OIL				
	GAS			179,400	179,400		GAS				
1966*	OIL	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



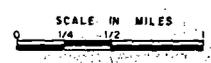
TYPE LOG



**LEGEND**

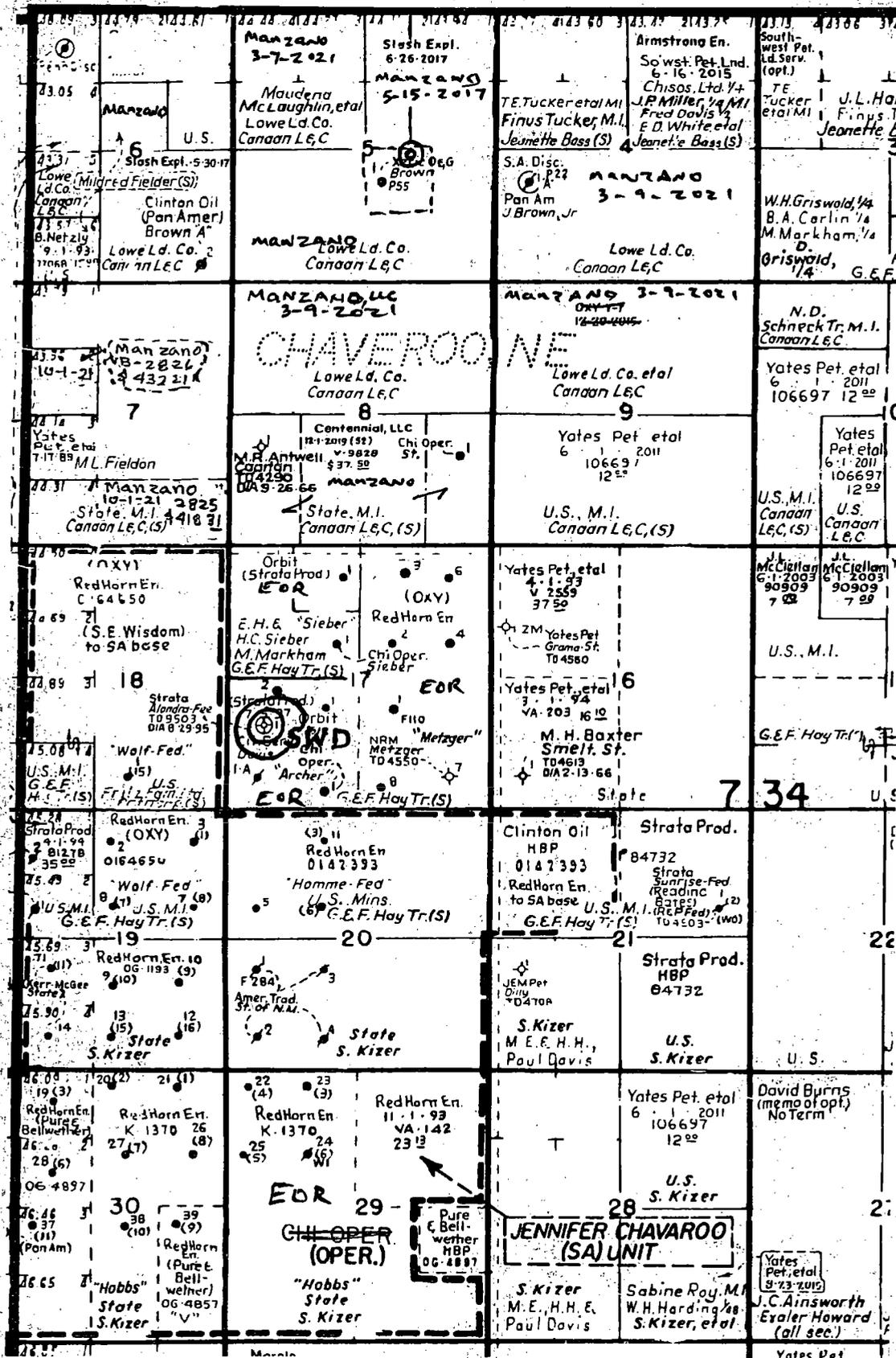
- SAN ANDRES WELLS
- ⊙ BOUGH "C" WELLS
- - - ISOPACH OF NET POROSITY GREATER THAN 4 PERCENT IN THE 1ST AND 2ND POROSITY INTERVALS (SEE PAY ZONE DISCUSSION)

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



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  
George Hay, Manager

**GRANTEE:**

**MANZANO, LLC,**  
a New Mexico limited liability company

By: Michael G. Hanagan  
Michael G. Hanagan, Manager

ACKNOWLEDGMENTS

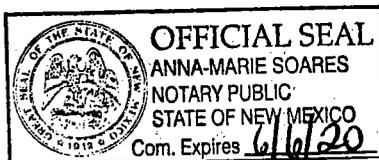
STATE OF NEW MEXICO }  
 }  
COUNTY OF ROOSEVELT }

This instrument was acknowledged before me on the 27<sup>th</sup> 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 25<sup>th</sup> of January 2017, by Michael G. Hanagan, Manager of Manzano, LLC, a New Mexico limited liability company, on behalf of said company.



[Signature]  
Notary Public

GKH

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.

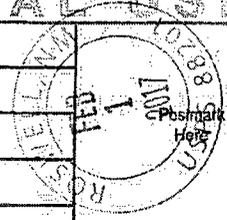
Inquiries regarding this application should be directed to Mike Hanagan, P O Box 1737, Roswell, New Mexico 88202.

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7006 3450 0001 4288 5768

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

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



February 1, 2017

EOR Operating  
 One Riverway Suite 610  
 Houston, Texas 77056

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

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

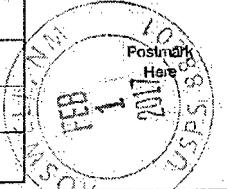
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Article Sent To:

**Manzano, LL**  
 P O Box 1737  
 Roswell, NM 8821  
 575-623-1996

7099 3220 0004 0016 9013

Postage	\$
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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



February 1, 2017

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

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	COMPLETE THIS SECTION ON DELIVERY																
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  </p> <p>B. Received by (Printed Name)  <b>Erica de la Cruz</b></p> <p>C. Date of Delivery  <b>FEB 1 2017</b></p> <p>D. Is delivery address different from item 1? <input checked="" type="checkbox"/> Yes                  If YES, enter delivery address below: <b>88201</b></p>																
<p>1. Article Addressed to:</p> <p>Strata Production Company                  Attention: Mark Murphey, President                  P.O. Box 1030                  Roswell, NM 88202</p>	<p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Insured Mail</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</td> <td></td> </tr> </table>	<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®	<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™	<input type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery	<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™	<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery	<input type="checkbox"/> Insured Mail		<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®																
<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™																
<input type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery																
<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise																
<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™																
<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery																
<input type="checkbox"/> Insured Mail																	
<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)																	
<p>2. Article Number (Transfer from service label)  <b>7099 3220 0004 0016 9013</b></p>																	

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Total Postage & Fees	\$

Postmark: ROSWELL, NM FEB 1 2017

Sent to: **GEORGE HAY**  
 Street, Apt. No., or PO Box No.: **1728 AVE Q**  
 City, State, Zip+4: **PORTALES, NM 88130**

PS Form 3800, August 2008 See Reverse for Instructions

7006 3450 0001 4288 5799

**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-T75-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

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>X <i>George Hay</i></p> <p>B. Received by (Printed Name) <input type="checkbox"/> C. Date of Delivery</p> <p>Linda Hay 2-3-17</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No        If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p>George Hay          1728 Avenue Q          Portales, NM 88130</p>		<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™</p> <p><input type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p> <p><input type="checkbox"/> All Restricted Delivery</p>	
<p>2. Article Number (Transfer from service label)</p> <p>9590 9403 0499 5173 0149 43</p> <p>7006 3450 0001 4288 5799</p>		<p>Domestic Return Receipt</p>	

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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

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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:

*Tammy Newby*  
\_\_\_\_\_  
Legal Clerk

Subscribed and sworn to before me,  
February 5, 2017

*Leslie Nagy*  
\_\_\_\_\_  
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 BWP/D.

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 Hagan, 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,

7016 3010 0000 1717 4679

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$

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Street and Apt. No., or PO Box No.  
**777 N. ELDRIDGE, STE 150**  
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

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

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

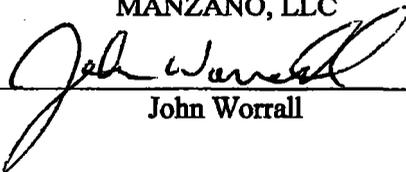
Ladies & Gentlemen,

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

97026 3010 0000 3717 4396

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Postage \$  
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Street and Apt. No. or PO 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

MAR 2 2017  
USPS 837

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

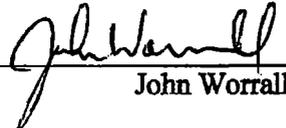
Ladies & Gentlemen,

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

7016 3010 0000 1717 4389

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<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$
Total Postage and Fees	\$

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Street and Apt. No., or PO Box No. **P.O. BOX 590**  
City, State, ZIP+4® **MIDLAND, TX 79702**

Postmark  
MAR 2017  
USPS 85201

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

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

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<input type="checkbox"/> Return Receipt (electronic)	\$ _____
<input type="checkbox"/> Certified Mail Restricted Delivery	\$ _____
<input type="checkbox"/> Adult Signature Required	\$ _____
<input type="checkbox"/> 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

MAR 2 2017  
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 USPS

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY												
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <input checked="" type="checkbox"/> Signature  <input type="checkbox"/> Agent  <input type="checkbox"/> Address</p> <p>B. Received by (Printed Name)  <b>JOE BARN</b></p> <p>C. Date of Delivery    _____</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes    If YES, enter delivery address below: <input type="checkbox"/> No</p>												
<p>1. Article Addressed to:</p> <p style="text-align: center;">Occidental Permian LP          5 East Greenway Plaza #110          Houston, TX 77046-0521</p>	<p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input checked="" type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> </table>	<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®	<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™	<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery	<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™	<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery
<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®												
<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™												
<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery												
<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise												
<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™												
<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery												
<p>2. Article Number (Transfer from service label)</p> <p style="text-align: center;">7016 3010 0000 1717 4396</p>	<p>PS Form 3811, July 2015 PSN 7530-02-000-9053</p> <p style="text-align: right;">Domestic Return Receipt</p>												

# USPS Tracking®

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Browse our FAQs ›

 Get Easy Tracking Updates ›  
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*EON/Hunter*

Tracking Number: 70163010000017174679

## Product & Tracking Information

Postal Product:

Features:  
Certified Mail™

## Available Actions

Text Updates

Email Updates

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

## Track Another Package

Tracking (or receipt) number

Track It

## Manage Incoming Packages

Track all your packages from a dashboard.  
No tracking numbers necessary.

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- Postal Explorer
- National Postal Museum
- Resources for Developers

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- Terms of Use
- FOIA
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*Permian Resources*

Tracking Number: 7016301000017174389

## Product & Tracking Information

Postal Product:

Features:  
Certified Mail™

## Available Actions

[Text Updates](#)

[Email Updates](#)

DATE & TIME	STATUS OF ITEM	LOCATION
March 17, 2017 , 11:58 am	<b>Delivered</b>	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

## Track Another Package

Tracking (or receipt) number

[Track It](#)

## Manage Incoming Packages

Track all your packages from a dashboard. No tracking numbers necessary.



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- [Terms of Use](#)
- [FOIA](#)
- [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](mailto:Michael.McMillan@state.nm.us)>  
**Cc:** 'Mike Hanagan' <[mike@manzanoenergy.com](mailto: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](mailto:jworrall@manzanoenergy.com)

**Subject:**

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



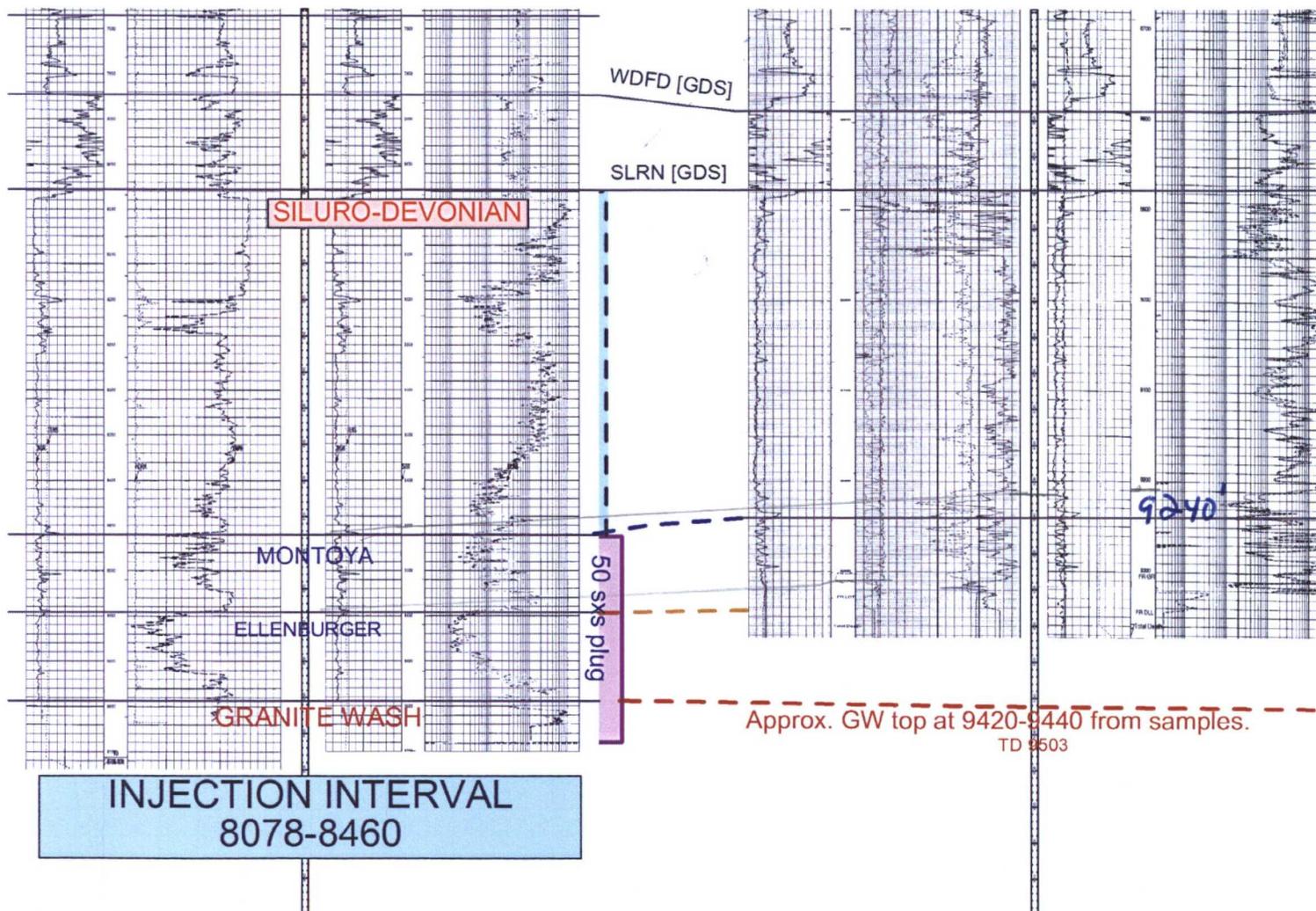
**Manzano, LLC**  
Oil & Gas Exploration and Production

*Anna-Marie Soares*

P.O. Box 1737 • ROSWELL, NM 89202-1737  
PH 575.629.1990 EXT. 301 • FAX 575.629.2620  
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  
nw cement  
9310'*



# 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

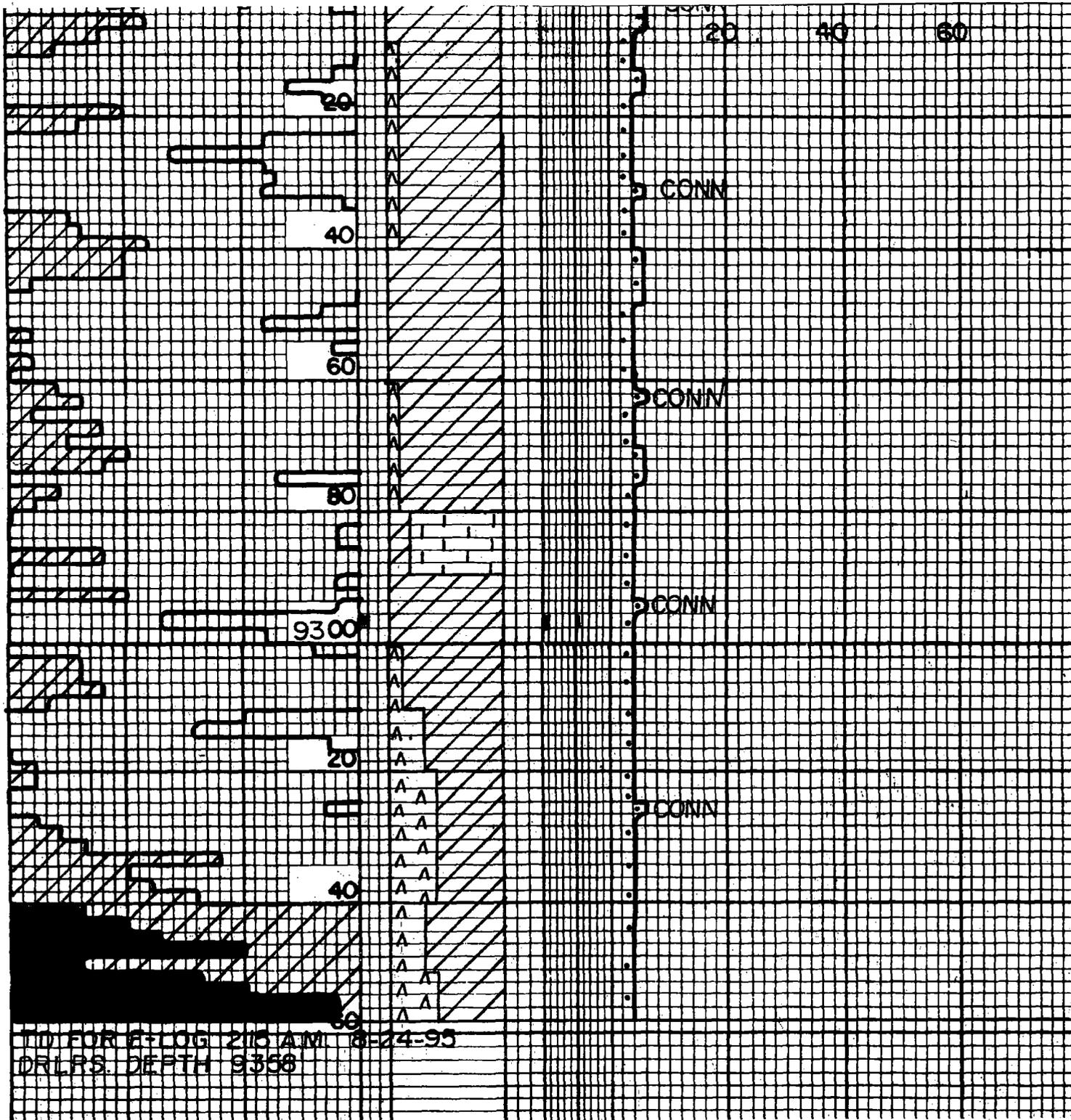
9430-40 80% Dolo: lt brn/yel brn, dns, frm, microxln  
20% SS: clr/wht,vf-fg, uncons, subang, prly srted  
Trc Chert: wht/brn, translucent, angular

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



20 40 60

DOL:lt brn,brn,tn,brn, buff,off wht,mott, mic-v/fn xln,dns, trs chlky,trs chrty,

DOL:wht,off wht,lt brn, tn,brn,mott,v/fn-mic xln,dns,cln ip, sli trs frac,sli trs lt yel flr,sli trs cln,lt yel dry cut,no wet cut,

CONN

DOL:buff,tn,eff wht,brn lt brn,mic-vfn xln, sme fn xln,dns-chlky sme sucros,tr fract chrty ip,limy

80

LS:lt brn,tn,buff,med brn,mic-vfn xln,dns-chlky,hd,tr fract, sme det,pred cln

9300

DOL:buff,tn,off wht,lt brn,mic-vfn xln,dns-chlky,hd,cln,det ip, fract,20% dull yel fluor,tr dk stn,no cuts wet or dry

20

CONN

40

CHT:mlky,clr,transl,gry, spkld,blk,brn,pyr, fract ip

60

DOL:lt brn,tn,buff,brn mott,mic-vfn xln, dns-chlky-sucros, frm-hd,arg,pyr,free pyr,chrty,fract,sme v/limy

TD FOR E-LOG 215 AM 8-24-95  
 DRLRS. DEPTH 9358

## 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



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## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

---

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

No records found.

**PLSS Search:**

Section(s): 7-9, 16-21      Township: 07S      Range: 34E

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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.

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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): ALONDUFEE SW13

API: 30-0 4-20877 Spud Date: 7/29/1945 New or Old: N (UIC Class II Primacy 03/07/1982)

Footages 16507 SL 73 UFWL Lot \_\_\_\_\_ or Unit I Sec 17 Tsp 75 Rge 34E County ROOSEVELT

General Location: 2.25 miles SE of Kern (Downtown) Pool: SWD, Devonian-Silurian Pool No.: 97869

BLM 100K Map: E1idg Operator: MANZANILLA OGRID: 231429 Contact: SWD, DEVONIAN

COMPLIANCE RULE 5.9: Total Wells: 36 Inactive: 0 Fincl Assur: OK Compl. Order: MA IS 5.9 OK? Y Date: 4-6-2017

WELL FILE REVIEWED  Current Status: P&A

WELL DIAGRAMS: NEW: Proposed  or RE-ENTER: Before Conv.  After Conv.  Logs in Imaging: X

Planned Rehab Work to Well: RUN 5 1/2" casing, circulates surface. Run 3 1/2" tubing, plug 2920

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned ___ or Existing ___ Surface	<u>17 1/2 / 13 7/8</u>	<u>345 <del>345</del></u>	<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				

Injection Lithostratigraphic Units	Depths (ft)	Injection or Confining Units	Tops	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.		<u>DU</u>	<u>8878</u>	Drilled TD <u>9503</u> PBDT _____
Confining Unit: Litho. Struc. Por.		<u>Wd</u>	<u>8790</u>	NEW TD _____ NEW PBDT _____
Proposed Inj Interval TOP:				NEW Open Hole <input checked="" type="radio"/> or NEW Perfs <input type="radio"/>
Proposed Inj Interval BOTTOM:				Tubing Size <u>32</u> in. Inter Coated? <u>X</u>
Confining Unit: Litho. Struc. Por.				Proposed Packer Depth <u>8780</u> ft
Adjacent Unit: Litho. Struc. Por.				Min. Packer Depth <u>874</u> (100-ft limit)
				Proposed Max. Surface Press. <u>1776</u> psi
				Admin. Inj. Press. <u>1776</u> (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 MA

Disposal Fluid: Formation Source(s) San Andres Analysis? Y On Lease  Operator Only  or Commercial

Disposal Int: Inject Rate (Avg/Max BWPD): 20k/40k Protectable Waters? MA Source: \_\_\_\_\_ System: Closed or Open

HC Potential: Producing Interval? MA Formerly Producing? \_\_\_\_\_ Method: Logs DST/P&A/Other 2-Mile Radius Pool Map

AOR Wells: 1/2-M Radius Map? Y 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 2, 2017

RULE 26.7(A): Identified Tracts? \_\_\_\_\_ Affected Persons: STNA, EOR, Hunter N. Date March 9, 2017

Order Conditions: Issues: plug back from 9503-9200 w/ 80 SXS

Add Order Cond: \_\_\_\_\_