

ABOVE THIS LINE FOR DIVISION USE ONLY

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



PPRG 1319155392

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

~~API not yet issued~~

Caza Operating LLC  
 Forehand Ranch 27 St #5

30-015-41530

[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

2013 JUN -4 P 3:59  
 RECEIVED OGD

[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.

Adam Rankin

Attorney 6/4/13

Print or Type Name

Signature

Title

Date

agrankin@hollandhart.com  
 e-mail Address



### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

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

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

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

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

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

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 1

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): III.

EXHIBIT: III. A. - INJECTION WELL DATA SHEET (side 1)

EXHIBIT: III. A. - WELLBORE DIAGRAM

EXHIBIT: III. A. & III. B. - INJECTION WELL DATA SHEET (side 2)

EXHIBIT: III. A. - CEMENT WORKSHEET

EXHIBIT: III. A. - PROPOSED CASING

INJECTION WELL DATA SHEET

OPERATOR: Caza Operating, LLC

WELL NAME & NUMBER: Forehand Ranch 27 St # 5 SWD

WELL LOCATION: <u>500 FNL &amp; 1650 FEL</u>	<u>B</u>	<u>27</u>	<u>23S</u>	<u>27E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 # J-55  
 Cemented with: 195 "C" sx. *or* 300 ft<sup>3</sup>  
 Top of Cement: Surface Method Determined: Visual

Intermediate Casing

Hole Size: \_\_\_\_\_ Casing Size: \_\_\_\_\_  
 Cemented with: \_\_\_\_\_ sx. *or* \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: \_\_\_\_\_ Method Determined: \_\_\_\_\_

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 17# J-55 LTC  
 Cemented with: 935 sx. *or* 1482 ft<sup>3</sup>  
 Top of Cement: Surface Method Determined: visual

Total Depth: 3600 FT

Injection Interval

3250 feet to 3350 feet Perforated

(Perforated or Open Hole; indicate which)

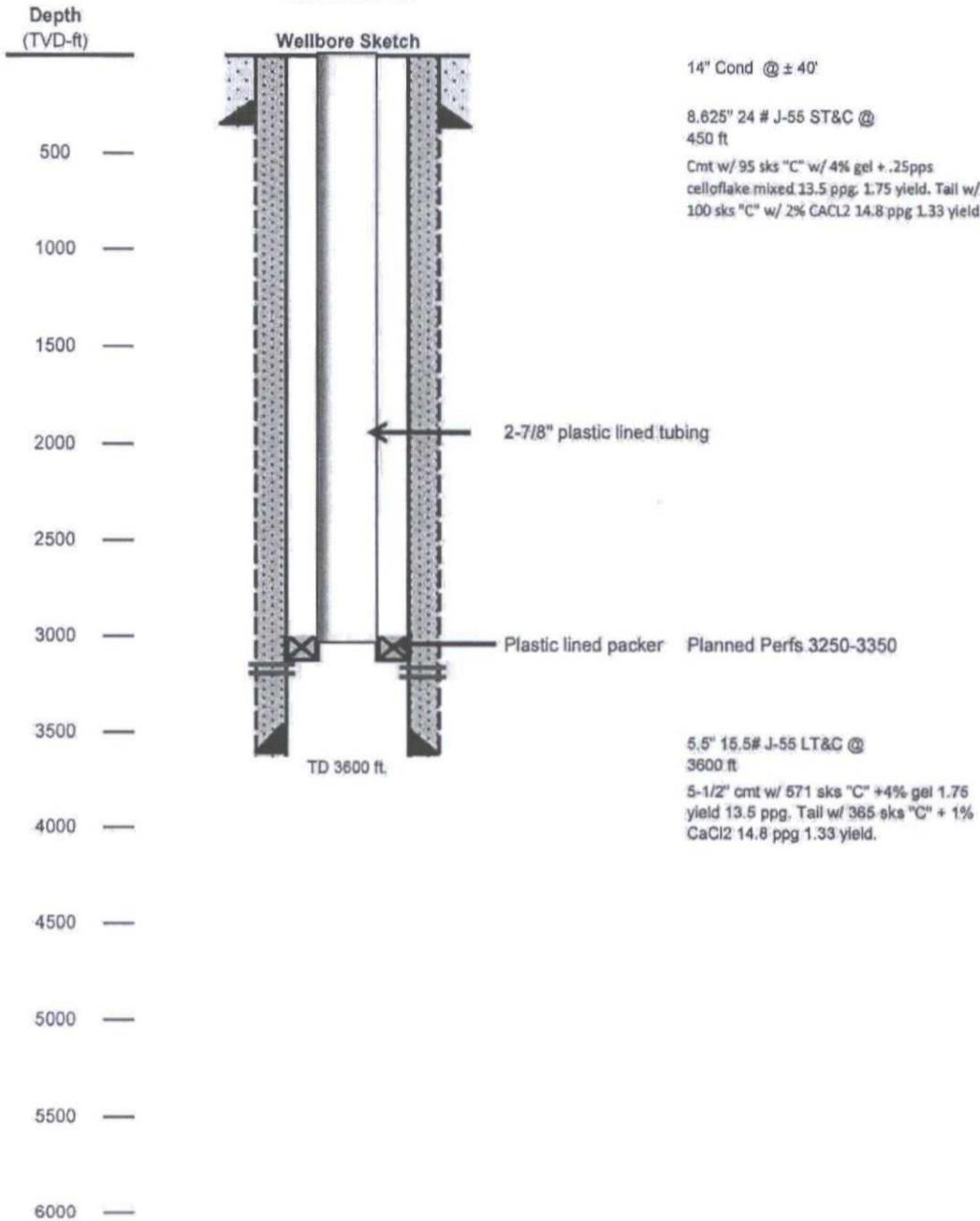
EXHIBIT III. A.

# Forehand Ranch 27 St # 5 SWD

Location: Section 27\_T23S\_R27E\_Eddy County, New Mexico



## Well Bore Plan



**EXHIBIT III. A.**

**EXHIBIT III. B.**

**INJECTION WELL DATA SHEET**

Tubing Size: 2-7/8" 6.5# J-55 Lining Material: Plastic

Type of Packer: Arrow Set 1X

Packer Setting Depth: 3225 ft

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

Additional Data

1. Is this a new well drilled for injection?  Yes  No  
If no, for what purpose was the well originally drilled? N/A

2. Name of the Injection Formation: Cherry Canyon

3. Name of Field or Pool (if applicable): N/A

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. Not Perforated in different interval

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

Underlying: Brushy Canyon (4,060')

Overlying: None

**EXHIBIT III. B.**

**EXHIBIT III. A.**

# Forehand Ranch 27 State Com # 5SWD "Cement Worksheet"

Section 2640 FEL & 330 FNL, Sec 27, T23S, R27E, Eddy County, New Mexico

1. **Surface hole depth = 450 ft. TOC @surface w/ 50% W/O**

Surface hole = 12.25 inch

Surface casing = 8.625" 24# J-55 STC

Float Collar 1 jts up.

Hardware needed = 8 spring centralizers

1 Guide shoe "Tx Pattern"

1 Insert float valve (1 jt Up)

1 thread lock compound

1 collar stop

**Engineering Data "Surface" 50% excess: Lead & Tail must have minimum 500 psi strength in 18 hrs.**

450 ft 12.25 inch hole x 8.625" csg = 450' X .4127 cu ft X 1.5 excess = 279 cu ft

40 ft 8.625" 24 # casing volume = .3575 X 40 ft = 14 cu ft

**Total Cement volume required = 293 cu ft. Round up to 300 cu ft:**

**Lead slurry = 167 cu ft "C" w/ 4% bentonite + 2% CaCl<sub>2</sub> + .25 pps celloflake w/ 1.75 yield 13.5 ppg = (95 sks)**

**Tail Slurry = 133 cu ft Class "C" w/ 2% CaCl<sub>2</sub> 14.8 ppg yield 1.33 cu ft / sk = (100 sks)**

2. **Long Sting = 3600 ft. TOC @Surface w/ 100% Excess 3600-2200\_ 200% excess 2200-450'**

Intermediate hole = 7.875 inch

Intermediate Casing = 5.0" 17# J-55 LTC

Float Collar 1 jts up.

Hardware needed = 12 spring centralizers

1 Guide Shoe

1 float collar (1 jt up)

1 thread lock compound

**Engineering Data "Injection String":**

1400 ft 7.875 inch open hole x 5.5 csg = 1400' x .1733 cu ft X 2.00 excess = 485 cu ft

1750 ft 7.875 inch open hole x 5.5 csg = 1750' x .1733 cu ft X 3.00 excess = 910 cu ft

450 ft 5.5" x 8.625" casing = .1926 cu ft/ft X 450 = 87 cu ft

40 ft 5.5" 17 # casing volume = .1305 X 40 ft = 5.22 cu ft

**Total Cement volume required = 1487 cu ft. Round up to 1500 cu ft.**

**Total Cement volume required = 1500 cu ft.**

**Lead Slurry Coverage 2200-surf = 997 cu ft "C" w/ 4% gel w/ 1% CaCl<sub>2</sub> 1.75 yield 13.5 ppg. = (570 sks)**

**Tail Slurry Coverage 3600'-2200' = 485 cu ft Class "C" w/ 1% CaCl<sub>2</sub> 14.8 ppg yield 1.33 cu ft / sk = (365 sks)**

**EXHIBIT III. A.**

Well name: **Forehand Ranch 27 State # 5 SWD 3600**  
 Operator: **CAZA OPERATING, LLC**  
 String type: **Surface CASING**

**Design parameters:**  
**Collapse**  
 Mud weight: 8.50 ppg

**Minimum design factors:**  
**Collapse:**  
 DF: 1.125

**Environment:**  
 H2S considered? No  
 Surface temp: 75.00 °F

Design is based on evacuated pipe:

**Burst:**  
 DF: 1.10

**Burst**  
 Max anticipated surface pressure: 238.70 psi

Internal gradient: 0.12 psi/ft  
 Calculated BHP: 292.70 psi

No backup mud specified:

**Tension:**  
 8 Rd:STC: 1.80  
 8 Rd:LTC: 1.80  
 Buttress: 1.60  
 Premium: 1.50  
 Body yield: 1.60

**Environment:**  
 BHT: 78 °F  
 Temperature gradient: 0.65 °F/100ft  
 Minimum section length: 50 ft  
 Minimum Drift: 7.875 in  
 Cement top: Surface

**Re subsequent strings:**  
 Next setting depth: 3,600 ft  
 Next mud weight: 10,000 ppg  
 Next setting BHP: 1,870 psi

Tension is based on buoyed weight.  
 Neutral pt: 392.59 ft

Fracture mud wt: 11.500 ppg  
 Fracture depth: 500 ft  
 Injection pressure: 299 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)
1	450	8.625	24.00	J-55	ST&C	450	450	7.972

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	199	1370	6.895	293	2950	10.08	9.4	244	25.90 J

Date: May 28, 2013  
 Richard Wright  
 Midland, Texas

Remarks:  
 Collapse is based on a vertical depth of 450 ft, a mud weight of 8.5 ppg. The casing is considered to be evacuated for collapse purposes.  
 Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.  
 Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

## EXHIBIT III. A.

**PROPOSED CASING PROGRAM**

Well name: **Forehand Ranch 27 St #5 SWD**  
 Operator: **CAZA OPERATING, LLC**  
 String type: **INJECTION STRING**

**Design parameters:**

**Collapse**

Mud weight: 9.80 ppg

**Minimum design factors:**

**Collapse:**

DF 1.200

**Environment:**

H2S considered? No  
 Surface temperature: 75.00 °F

Design is based on evacuated pipe.

BHT 98 °F  
 Temperature gradient: 0.65 °F/100ft  
 Minimum sect length: 1,000 ft

**Burst:**

DF 1.20 Cement top: Surface

**Burst**

Max anticipated surface pressure: 1,400.73 psi

Internal gradient: 0.12 psi/ft  
 Calculated BHP 1,832.73 psi

**Tension:**

Non-directional string.  
 8 Round STC: 1.80 (J)  
 8 Round LTC: 1.80 (J)  
 Buttress: 1.60 (J)  
 Premium: 1.50 (J)  
 Body yield: 1.60 (B)

No backup mud specified.

Tension is based on buoyed weight.  
 Neutral pt: 3,066.25 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift (in)	
1	3600	5.5	15.50	J-55	LT&C	3600	3600	4.825	
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (klps)	Tension Strength (klps)	Tension Design Factor
1	1833	4040	2.204	1833	4810	2.62	47.5	217	4.57 J

Date: April 15, 2013  
 Midland, Texas

Wright

**Remarks:**

Collapse is based on a vertical depth of 3600 ft, a mud weight of 9.8 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

*Engineering responsibility for use of this design will be that of the purchaser.*

**EXHIBIT III. A.**

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 2

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): V.

EXHIBIT: V. A. - LEASE MAP

EXHIBIT: V. B. - GEOLOGICAL MAP

EXHIBIT: V. C. - LOCATION PLATS

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

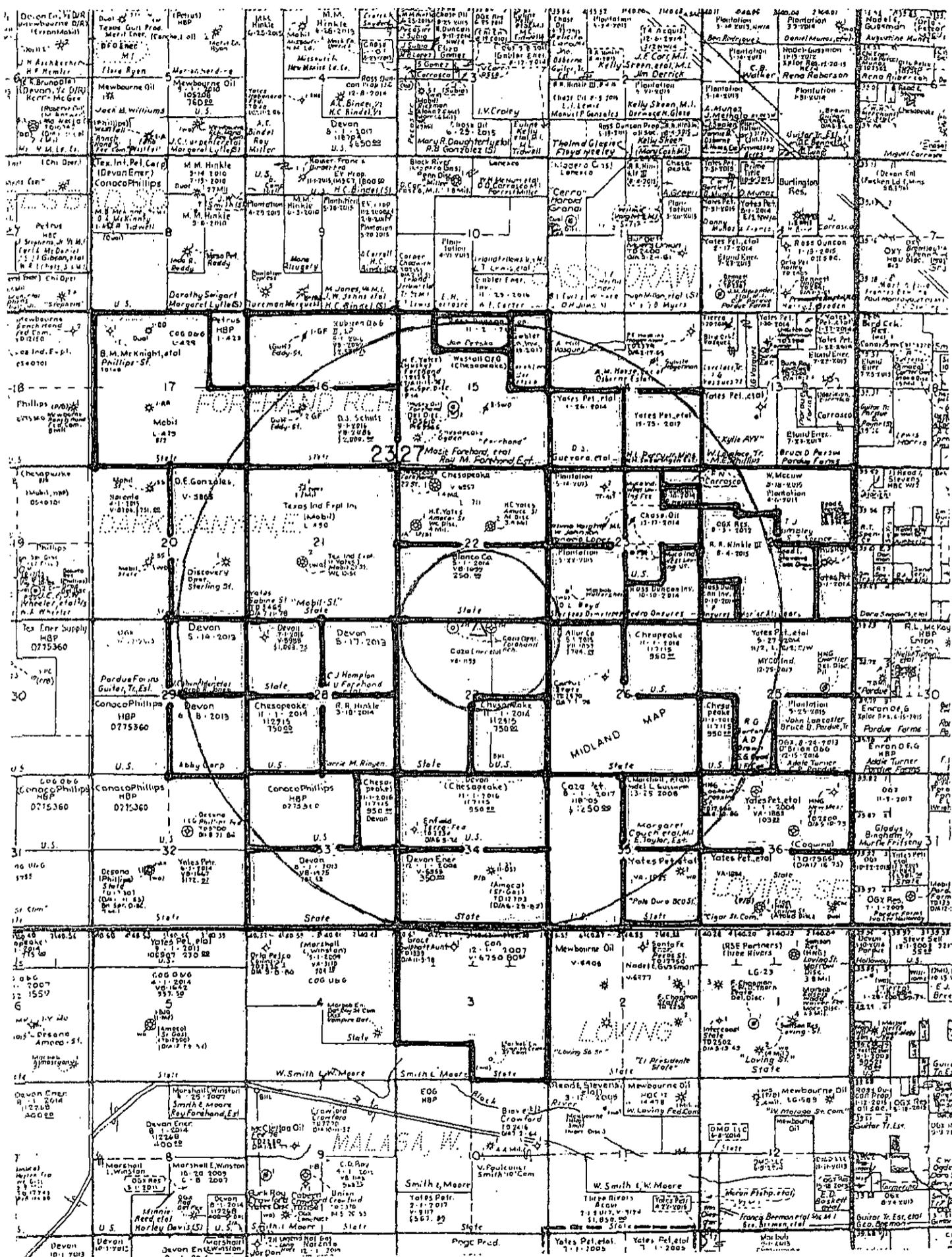
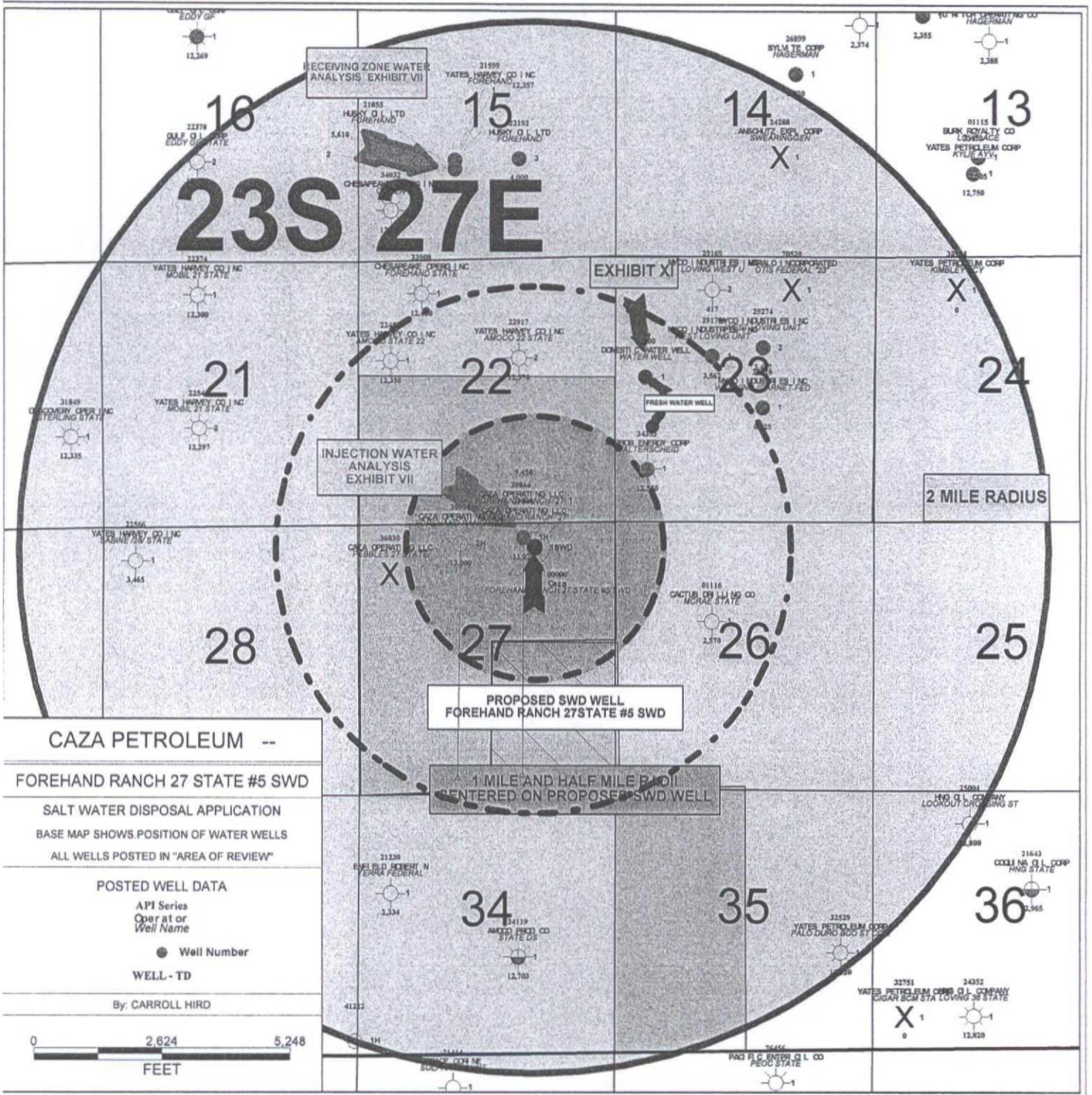
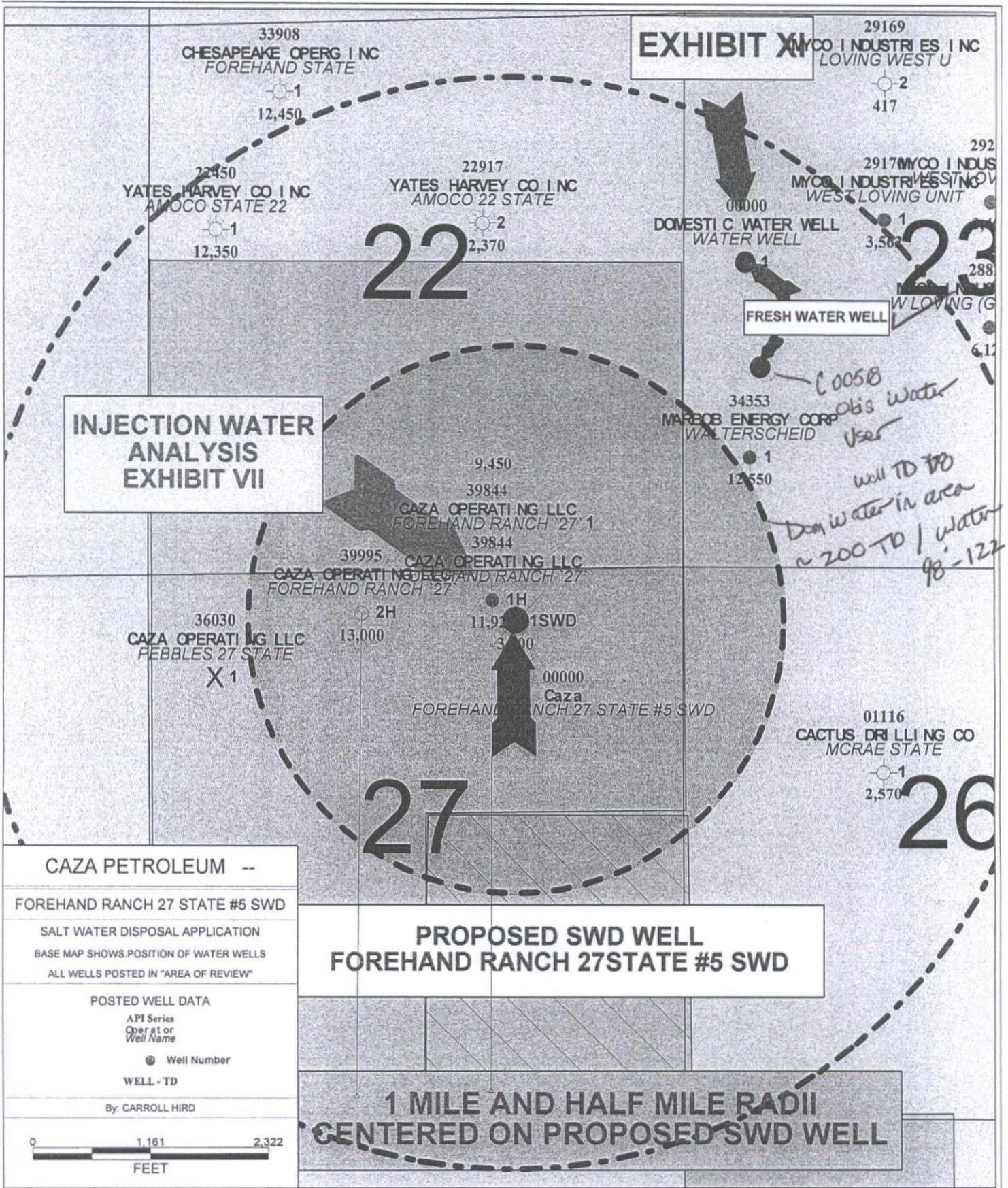


EXHIBIT V. A.



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**EXHIBIT V. B.**



PETRA 5/20/2013 3:02:46 PM

**EXHIBIT V. B.**  
**(enlarged)**

**DISTRICT I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone (575) 543-6161 Fax (575) 503-0720

**DISTRICT II**  
 1501 W. Grand Avenue, Artesia, NM 88210  
 Phone (575) 748-1283 Fax (575) 748-9720

**DISTRICT III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone (505) 834-8179 Fax (505) 834-8170

**DISTRICT IV**  
 1220 S. St. Francis Dr., Santa Fe, NM 87505  
 Phone (505) 470-3460 Fax (505) 470-3448

State of New Mexico  
 Energy, Minerals and Natural Resources Department

Form C-102  
 Revised August 1, 2011

**OIL CONSERVATION DIVISION**  
 1220 South St. Francis Dr.  
 Santa Fe, New Mexico 87505

Submit one copy to appropriate  
 District Office

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name FOREHAND RANCH "27" STATE	
OGRID No.	Operator Name CAZA OPERATING, LLC.	Well Number 5 SWD Elevation 3158'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	27	23 S	27 E		500	NORTH	1650	EAST	EDDY

Bottom Hole Location if Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p><b>SURFACE LOCATION</b>          Lot - N 32°16'54.68"          Long - W 104°10'29.30"          NMSPC- N 468308.1          E 590328.4          (NAD-83)</p>	<p><b>OPERATOR CERTIFICATION</b>          I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p> <p>Email Address _____</p>
	<p><b>SURVEYOR CERTIFICATION</b>          I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>Date Surveyed APRIL 25 2013</p> <p>Signature &amp; Seal of Professional Surveyor            7977</p>
	<p>Certificate No. Gary L. Jones 7977</p>
	<p>BASIN SURVEYS 28521</p>

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 3

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): VI.

EXHIBIT: VI. - WELL DATA WITHIN AREA OF REVIEW

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

INFO. CATEGORY	EXHIBIT VI This form applies to paragraph VI		APPLICATION FOR NEW SWD WELL CAZA FOREHAND RANCH 27 STATE #5 SWD; SEC 27, T23S-R27E; EDDY COUNTY, NEW MEXICO		
Date:	1/24/2013		ALL WELLS WITHIN .5 MILE RADIUS OF PROPOSED SWD WELL ("AREA OF REVIEW" AS DEFINED BY NEW MEXICO OIL CONSERVATION DIVISION) EXHIBITS ARE REFERENCED TO PARAGRAPHS IN OCD FORM C-108		
	CAZA FOREHAND RANCH 27 STATE #5 SWD PROPOSED NEW WELL		CAZA FOREHAND RANCH 27 STATE COM #1H		Caza #2H Proposal N/A
API	TBA		30015398440000		
TYPE WELL: (para. I)	Salt water disposal into the Bell Canyon & Cherry Canyon Forms.		Bone Spring Horizontal		
LOCATION:	1650' FEL & 500' FNL; SEC 27 T23S_R27E, EDDY CO, NEW MEXICO		252' FNL & 1900 FEL; SEC 27, T23S_R27E; EDDY CO, NEW MEXICO		
WELL TOTAL DEPTH:	3600' MD TVD		9450' / 11925' MD ✓		
CONSTRUCTION:	VERTICAL WELL - SWD		Pilot Hole / Horizontal		
Surface Pipe	SEE WELL BORE		20" 40' 5 3/4 YDS CMT		surface conductor
Fresh Water Protection	DIAGRAM: Forehand SWD PreDrill Wellbore Diag. (Exhibit III a.1)		13.375" 430' 450 SX CMT		circ to surface
Intermed. Casing	"		9.625" 2077' 712 SX		circ to surface
Casing	"		7" 7596'		7596 to 500' / TS to TBC
Casing/Liner	"		4.5" 6537' - 11925' 280 SX CMT 245 sx to surface		calc
Tubing	"		N/A		
Plug Back Pilot Hole			6757' 1450 Ssx cmt		
Perforated interval			7750' - 11798'		
<b>COMPLETION HIST.:</b>					
Well Active/Inactive	Proposed well		Active		
Spud date:	TO BE DETERMINED		9/26/2012		
Completion Date:			12/19/2012		
Interval perforated:			2nd Bone Spring		
MD TVD Horizontal	N/A		7408' TVD		
TD HORIZ Well (MD)	N/A		11925' MD		
Plugging Date:	N/A		N/A		
<b>PROPOSED SPUD DATE</b>	JUNE, 2013		N/A		
Interval perf'd:	3250 - 3350' MD		N/A		
Well Bore Diagram (Para. III & VII)	SEE: Forehand SWD Proposed Wellbore Diag. (Exhibit III)		N/A		

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 4

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): VII.

EXHIBIT: VII. - DAILY INJECTION RATES

EXHIBIT: VII. - INJECTION WATER ANALYSIS (2nd Bone Spring)

EXHIBIT: VII. - RECEIVING ZONE WATER ANALYSIS

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

## **INJECTION RATES, VOLUMES AND PRESSURES**

1. Maximum 2 BFPM with total rate of 2280 BFPD.  
Average rate: 1.5 BFPM with total rate of 2160 BFPD.
2. System is closed.
3. 650 psi maximum pressure and 350 psi average based on  
0.2 psi/ft x footage to top perforation (3250').

**INJECTION  
WATER ANALYSIS**

Martin Water Laboratories, Inc.

P.O. BOX 98  
MIDLAND, TX. 79702  
PHONE (432) 683-4521

709 W. INDIANA  
MIDLAND, TEXAS 79701  
FAX (432) 682-8819

**RESULT OF WATER ANALYSES**

TO: Richard Wright LABORATORY NO. 0213-263  
200 N. Lorraine, Suite 1550, Midland, TX 79701 SAMPLE RECEIVED 2-13-13  
 RESULTS REPORTED 2-19-13

COMPANY Caza Operating LEASE Forehand Ranch 27

FIELD OR POOL \_\_\_\_\_ SECTION \_\_\_\_\_ BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY Eddy STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:  
 NO. 1 Submitted water sample - taken 2-12-13.  
 NO. 2 \_\_\_\_\_  
 NO. 3 \_\_\_\_\_  
 NO. 4 \_\_\_\_\_

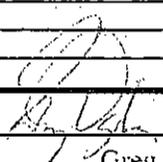
REMARKS: 2nd Bone Springs

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1331			
pH When Sampled				
pH When Received	6.10			
Bicarbonate as HCO <sub>3</sub>	146			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	32.000			
Calcium as Ca	10.800			
Magnesium as Mg	1.215			
Sodium and/or Potassium	70.212			
Sulfate as SO <sub>4</sub>	300			
Chloride as Cl	130.640			
Iron as Fe	47			
Barium as Ba	0			
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	213.313			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohm/cm at 77° F.	0.055			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml.				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

By   
 Greg Ogden, B.S.

**RECEIVING ZONE  
WATER ANALYSIS**

Martin Water Laboratories, Inc.

P.O. BOX 98  
MIDLAND, TX. 79702  
PHONE (432) 683-4521

709 W. INDIANA  
MIDLAND, TEXAS 79701  
FAX (432) 682-8819

**RESULT OF WATER ANALYSES**

TO: Richard Wright LABORATORY NO. 0413-275  
200 N. Lorraine, Suite 1550, Midland, TX. 79701 SAMPLE RECEIVED 4-11-13  
 RESULTS REPORTED 4-22-13

COMPANY Caza Petroleum LEASE Endurance Forehand # 2  
 FIELD OR POOL Unit K 1880 FSL & 1980 FWL, T23S, R27E  
 SECTION 15 BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY Eddy STATE New Mexico

**SOURCE OF SAMPLE AND DATE TAKEN:**

NO. 1 Submitted water sample - taken 4-6-13 from Forehand #2 (Section 5). Delaware Water Sample ✓  
 NO. 2 \_\_\_\_\_  
 NO. 3 \_\_\_\_\_  
 NO. 4 \_\_\_\_\_

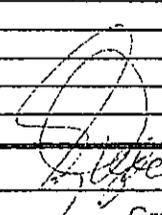
**REMARKS:**

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1250			
pH When Sampled				
pH When Received	7.90			
Bicarbonate as HCO <sub>3</sub>	329			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	45,500			
Calcium as Ca	13,200			
Magnesium as Mg	3,038			
Sodium and/or Potassium	54,017			
Sulfate as SO <sub>4</sub>	460			
Chloride as Cl	115,020			
Iron as Fe	2			
Barium as Ba	0			
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	186,064			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	11			
Resistivity, ohm-cm at 77° F.	0.060			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

By   
 Greg Ogden, B.S.

LATHAM PRINTING CO. - 333-1292

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 5

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): VIII.

EXHIBIT: VIII. - TYPE LOG

EXHIBIT: VIII. - FRESH WATER AQUIFERS

EXHIBIT: \_\_\_\_\_

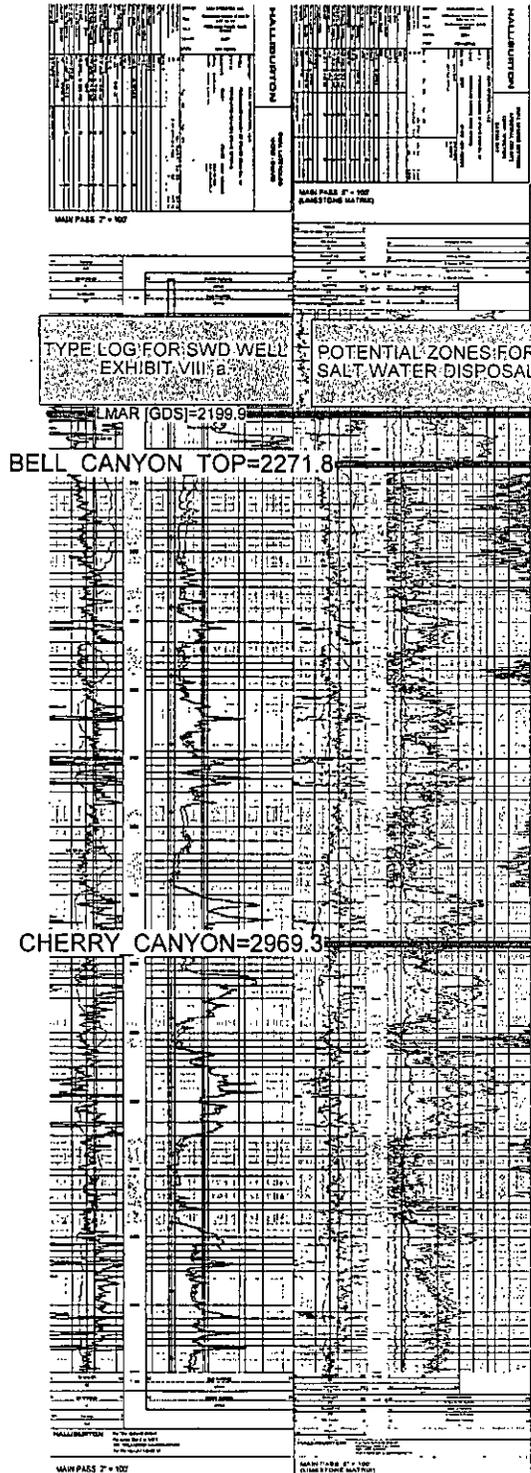
EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

PROPOSED NEW WELL\_SWZ ZONES AS LOGGED IN NEARBY CAZA, FOREHAND RANCH 27 STATE 1H, EXHIBIT FOR OCD PERMIT

CAZA  
FOREHAND  
30015398440000

1H



30015398440000  
3,179  
CAZA  
**FOREHAND**  
1H  
11,927  
FOREHAND RANCH  
WELL SPUD DATE : 9/28/2012  
BELL\_CANYON\_SWZ\_SELECT\_ZONES [CRH] : 305  
CHERRY\_CANYON\_SWZ\_SELECT\_ZONES [CRH] : 149

**EXHIBIT VIII.**

**FRESH WATER AQUIFERS**  
**Forehand Ranch 27 State #5 SWD**

<u>Formation</u>	<u>Top of Formation</u>	<u>Bottom of Formation</u>	<u>Formation Thickness</u>
Quaternary alluvium	0	300	up to 300
Upper Rustler	300	525	up to 225
Lower Rustler	525	760	up to 235
Castle or Salado	760		

There are no fresh water aquifers below the proposed Cherry Canyon completion zone.

These thicknesses were obtained from:

Geologic Atlas of Texas, Hobbs Sheet, William Battle Phillips Memorial Edition,  
The University of Texas at Austin, Bureau of Economic Geology, 1976.

David Hamilton  
RT Hicks Consultants  
Office: 505-266-5004

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 6

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): IX.

EXHIBIT: IX. - STIMULATION PROGRAM

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EXHIBIT:

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EXHIBIT:

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EXHIBIT:

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EXHIBIT:

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May 17, 2013

Re: SWD Application (Form C-108)  
Caza-Forehand Ranch 27 State #5 SWD  
Section 27, T23S-R27E  
Eddy County, New Mexico

The completion of the Caza-Forehand Ranch 27 State #5 SWD well will consist of a plastic lined tubing string and associated plastic lined packer followed by a well stimulation, as necessary, with a solution of 15% HCl acid followed by a fracture stimulation.

Caza Petroleum, Inc.

A handwritten signature in black ink, appearing to read 'Richard Wright'.

Richard Wright  
Operations Manager

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 7

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): X.

EXHIBIT: X. - LOGGING DATA (Will be filed @ OCD when well has  
been drilled and logged.)

---

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 8

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): XI.

EXHIBIT: XI. - FRESH WATER SAMPLE

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EXHIBIT:

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EXHIBIT:

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EXHIBIT:

---

EXHIBIT:

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P.O. BOX 98  
MIDLAND, TX. 79702  
PHONE (432) 683-4521

Martin Water Laboratories, Inc.

709 W. INDIANA  
MIDLAND, TEXAS 79701  
FAX (432) 682-8819

RESULT OF WATER ANALYSES

TO: Richard Wright LABORATORY NO. 0413-393  
200 N. Lorraine, Suite 1550, Midland, TX 79701 SAMPLE RECEIVED 4-22-13  
RESULTS REPORTED 4-22-13

COMPANY Caza Operating LEASE \_\_\_\_\_

FIELD OR POOL \_\_\_\_\_

SECTION \_\_\_\_\_ BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY \_\_\_\_\_ STATE \_\_\_\_\_

SOURCE OF SAMPLE AND DATE TAKEN:  
NO. 1 Water sample - taken 4-20-13 and labeled "Domestic Water Well - from faucet at pump outlet (Eddy, NM)  
NO. 2 \_\_\_\_\_  
NO. 3 Maximum contents for drinking water as recommended by the Texas Dept. of Health.  
NO. 4 \_\_\_\_\_

REMARKS: \_\_\_\_\_

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0028			
pH When Sampled				
pH When Received	7.10			
Bicarbonate as HCO <sub>3</sub>	185			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	1,140			
Calcium as Ca	332			
Magnesium as Mg	75			
Sodium and/or Potassium	139			
Sulfate as SO <sub>4</sub>	730		300	
Chloride as Cl	376		300	
Iron as Fe	0.15		0.3	
Barium as Ba	0			
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	1,838		1,000	
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohm-cm at 77° F.	3.760			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

cc: Fred Wright

By Greg Ogden, B.S.

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 9

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): XII.

EXHIBIT: XII. - SIGNED AFFIRMATION STATEMENT

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EXHIBIT:

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EXHIBIT:

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EXHIBIT:

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EXHIBIT:

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April 30, 2013

Re: Application for Authorization to Inject (Form C-108)  
Forehand Ranch 27 State # 5 SWD – New Well

All available geological and engineering sources of data were reviewed. There is no apparent connectivity between proposed SWD intervals and any existing sources of drinking water.

CAZA PETROLEUM, INC.

A handwritten signature in cursive script that reads 'Carroll R. Hird'.

Carroll R. Hird  
Consulting Geologist

**EXHIBIT XII.**

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CAZA PETROLEUM APPLICATION  
FOR SWD WELL APPROVAL

Forehand Ranch 27 State #5 SWD\_New Well

DATE: 5/1/2013 10:50

INDEX REFERENCE PAGE NO.: 10

INFORMATION AND EXHIBITS PERTAINING TO  
SPECIFIC PARAGRAPHS OF OCD FORM C - 108

PARAGRAPH(S): XIII.

EXHIBIT: XIII. - NOTICE LETTER

EXHIBIT: XIII. - LIST OF RECIPIENTS BY TRACT

EXHIBIT: XIII. - AFFIDAVIT OF PUBLICATION

EXHIBIT: \_\_\_\_\_

EXHIBIT: \_\_\_\_\_



June 3, 2013

**VIA CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

**TO INTERESTED PARTIES**

**Re: Caza Operating, LLC Form C-108 Administrative Application for Authorization to Inject for Purposes of Salt Water Disposal into its Proposed Forehand Ranch 27 State No. 5 SWD Well, Eddy County, New Mexico.**

Ladies and Gentlemen:

This letter is to advise you that Caza Operating, LLC ("Caza") has filed the enclosed Form C-108 Administrative Application with the New Mexico Oil Conservation Division. Caza seeks administrative approval from the Division for authorization to inject produced water into its proposed Forehand Ranch 27 State No. 5 SWD well, to be located 500 FNL and 1650 FEL of Section 27, Township 23 South, Range 27 East, NMPM, Eddy County, New Mexico. Caza Operating, LLC proposes to inject produced water into the Bell Canyon Formation at an interval from 3250 to 3350 feet, at an expected maximum injection rate of 2880 barrels per day, and at an expected maximum pressure of 650 pounds per square inch.

Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico, 87504, within 15 days of this notice. Questions regarding this application should be directed to Mr. Jay Brown at (832) 381-3854.

Sincerely,

Adam G. Rankin  
ATTORNEY FOR CAZA OPERATING, LLC

Forehand Ranch Notice List

**Surface Section 27:**

OGDEN FARMS & CATTLE CO.  
159 W. OGDEN RD.  
LOVING, NM 88256

**Section 22 (S/2):**

Caza Petroleum, Inc. (applicant)

**Section 23 (SW/4):**

MERIT MANAGEMENT PARTNERS IV, LP.  
13727 NOEL RD., STE 500  
DALLAS, TX 75240

**Section 26 (W/2):**

THE ALLAR CO.  
P.O. Box 1567  
GRAHAM, TX 76450

**Section 27:**

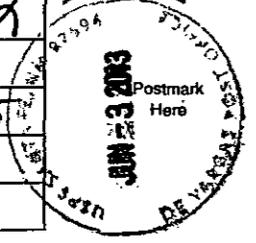
Caza Petroleum, Inc. (applicant)

7006 2760 0001 6376 1505

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<b>Total Postage &amp; Fees</b>	<b>\$ 8.37</b>	

Ogden Farms & Cattle Co.  
 159 W. Ogden Road  
 Loving, New Mexico 88256

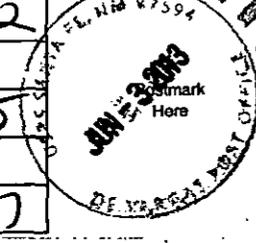
PS Form 3800, August 2006 See Reverse for Instructions

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<b>Total Postage &amp; Fees</b>	<b>\$ 8.37</b>	

Merit Management  
 Partners IV, LP.  
 13727 Noel Road, Suite 500  
 Dallas, Texas 75240

PS Form 3800, August 2006 See Reverse for Instructions

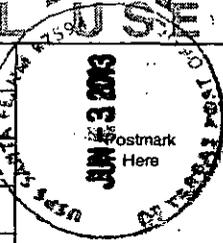
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Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 8.37</b>



THE ALLAR CO.  
P.O. BOX 1567  
GRAHAM, TX 76450

PS Form 3800, August 2006. See reverse for instructions.



**Injection Permit Checklist:** Received 04/04/13 First Email Date: \_\_\_\_\_ Final Reply Date: \_\_\_\_\_ Suspended?: \_\_\_\_\_

Issued Permit: Type: WFX / PMX / **SWD** Number: 1429 Permit Date: 07/10/13 Legacy Permits or Orders: NA

Well No. 5SWD Well Name(s): Forehand Ranch, 27 State

API: 30-0 15-41530 Spud Date: Proposed New/Old: N (UIC Cl II Primacy March 7, 1982)

Footages 500 FNL/1650 FEL Lot / Unit B Sec 27 Tsp 23S Rge 27E County Eddy

General Location: miles west of Loving Pool: SWD: Cherry Canyon Pool No.: 97003

Operator: Coza Operating LLC OGRID: 249099 Contact: Adam Rankin, Attorney

COMPLIANCE RULE 5.9: Inactive Wells: 0 Total Wells: 15 Fincl Assur: Yes Compl. Order? Yes IS 5.9 OK? Yes

Well File Reviewed:  Current Status: Proposed well for injection of produce water from BS wells

Planned Rehab Work to Well: New construction

Well Diagrams: Proposed Yes Before Conversion — After Conversion — Are Elogs in Imaging?: To Be Filed

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement (Sx) Cf	Cement Top and Determination Method
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Cond	<u>14"</u>	<u>0 to 40</u>	<u>—</u>	<u>—</u>	<u>—</u>
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> Surface	<u>2 1/4 / 8 5/8</u>	<u>0 to 450</u>	<u>NA</u>	<u>195</u>	<u>Cir. to surf.</u>
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> Intern	<u>7 7/8 / 5 1/2</u>	<u>0 to 3600</u>	<u>NA</u>	<u>935</u>	<u>Cir. to surf.</u>
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> LongSt	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Liner	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Planned <input checked="" type="checkbox"/> or Existing <input checked="" type="checkbox"/> OH (PERF)	<u>7 7/8 / 5 1/2</u>	<u>3250 to 3350</u>	<u>—</u>	<b>Completion/Ops Details:</b> Drilled TD <u>3600</u> PBSD <u>35</u> Open Hole <u>—</u> or <u>(Perfs X)</u> Tubing Size <u>2 7/8</u> Inter Coated? <u>Yes</u> Proposed Packer Depth <u>3225</u> Min Packer Depth <u>3150</u> (100-ft limit) Proposed Max. Surface Press <u>650</u> Calc. Injt Press <u>650</u> (0.2 psi per ft) Calc. FPP <u>—</u> (0.65 psi per ft)	

Injection Strat Column:	Depths (ft)	Formation	Tops?
Above Top of Inject Formation	<u>—</u>	<u>Castile</u>	<u>~760</u>
Above Top of Inject Formation	<u>+281</u>	<u>Bell Canyon</u>	<u>2272</u>
Proposed Interval TOP:	<u>3250</u>	<u>Cherry Canyon</u>	<u>~291A</u>
Proposed Interval BOTTOM:	<u>3350</u>	<u>—</u>	<u>—</u>
Below Bottom of Inject Formation	<u>—</u>	<u>Brushy Canyon</u>	<u>—</u>
Below Bottom of Inject Formation	<u>—</u>	<u>—</u>	<u>—</u>

**AOR: Hydrologic and Geologic Information**

POTASH: R-111-P No Noticed? NA BLM Sec Ord No WIPP No Noticed? NA SALADO: T: 760B CLIFF HOUSE NA

Fresh Water: Max Depth: 300 FW Formation Alluvial Wells? 3 Analysis? Yes Hydrologic Affirm Statement Yes

Disposal Fluid: Formation Source(s) Bone Spring / Delaware Production On Lease — Only from Operator  or Commercial —

Disposal Interval: Injection Rate (AVE/MAX): 2160 / 2280 Protectable Waters: No CAPITAN REEF: thru No adjacent No southeast of Reef

H/C Potential: Producing Interval? Yes Formerly Producing? No Method: E Log / Mudlog / DST / Depleted / Other Request Mudlog

AOR Wells: 1/2-M Radius Map?  Well List? Yes Total No. Wells Penetrating Interval: 1

Penetrating Wells: No. Active Wells 1 Num Repairs? 0 on which well(s)? \_\_\_\_\_ Diagrams? N

Penetrating Wells: No. P&A Wells 0 Num Repairs? 0 on which well(s)? \_\_\_\_\_ Diagrams? N

NOTICE: Newspaper Date 05/26/13 Mineral Owner State Surface Owner Ogden Farms N. Date 06/03/13

RULE 26.7(A): Identified Tracts? Y Affected Persons: Merit Management / Allar Co / Coza N. Date 06/03/13

Permit Conditions: Mudlog for District (with shows / lack of shows)

Issues: \_\_\_\_\_