

DATE IN 8/24/07	SUSPENSE 9/9/07	ENGINEER W. Jones	LOGGED IN 8/24/07	TYPE SWD 426-A	APP NO. PTDS0723659567
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ABOVE THIS LINE FOR DIVISION USE ONLY

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



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR

- [D] Other: Specify \_\_\_\_\_

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

- [A]  Working, Royalty or Overriding Royalty Interest Owners  
 [B]  Offset Operators, Leaseholders or Surface Owner  
 [C]  Application is One Which Requires Published Legal Notice  
 [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office  
 [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,  
 [F]  Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

**Note:** Statement must be completed by an individual with managerial and/or supervisory capacity.

_____ Print or Type Name	_____ Signature	_____ Title	_____ Date
_____ e-mail Address			

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_ Yes \_\_\_\_\_ No
- II. OPERATOR: Lynx Petroleum Consultants, Inc.  
ADDRESS: P.O. Box 1708, Hobbs, NM 88241  
CONTACT PARTY: Larry R. Scott PHONE: 505.392.6950
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes  No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than injected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Larry R. Scott TITLE: President

SIGNATURE: *Larry R. Scott* DATE: 7-16-07

E-MAIL ADDRESS: lrscott@leaco.net

\* 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: \_\_\_\_\_

RECEIVED  
AUG 24 PM 11 28

### 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.

INJECTION WELL DATA SHEET

OPERATOR: Lynx Petroleum Consultants, Inc.

WELL NAME & NUMBER: Sprinkle Federal No. 3

WELL LOCATION: 1650' FNL & 460' FEL  
FOOTAGE LOCATION

H  
UNIT LETTER

9  
SECTION

19S  
TOWNSHIP

35E  
RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA  
Surface Casing

SEE ATTACHED

Hole Size: 17 1/2" Casing Size: 13 3/8"

Cemented with: 400 sx. or ft<sup>3</sup>

Top of Cement: Circulated Method Determined: Visual

Intermediate Casing

Hole Size: 11" Casing Size: 8 5/8"

Cemented with: 1500 sx. or ft<sup>3</sup>

Top of Cement: Circulated Method Determined: Visual

Production Casing

Hole Size: 7 7/8" Casing Size: 5 1/2"

Cemented with: 600 sx. or ft<sup>3</sup>

Top of Cement: 7600' Method Determined: Calculated

Total Depth: 10,800'   
Injection Interval

Perfs 9544 feet to Perfs 10,680'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 2 7/8" Lining Material: IPC (plastic)

Type of Packer: Baker Model 'R' or equivalent

Packer Setting Depth: 9,450'

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

Additional Data

1. Is this a new well drilled for injection?             Yes X No         
If no, for what purpose was the well originally drilled? Wolfcamp and Bone Springs  
oil production
2. Name of the Injection Formation: Bone Springs & Wolfcamp
3. Name of Field or Pool (if applicable): Scharb
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. None
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:  
None underlying; Queen overlying @ 4600'; Queen is water  
productive at this location from offset DST data.

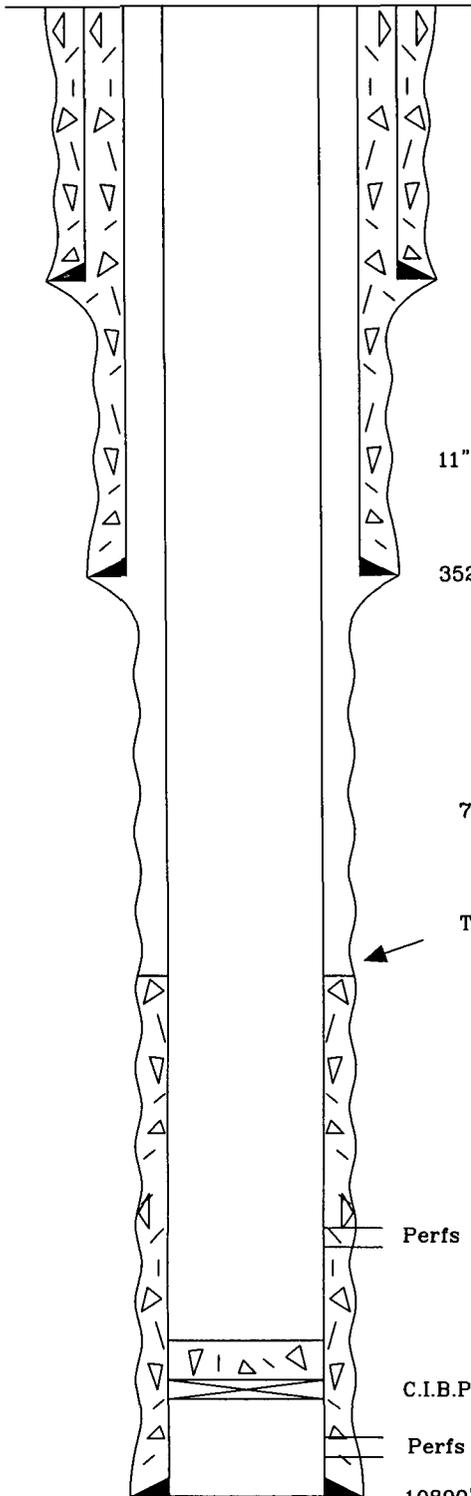
Page 5

- XII. Examination of the available geologic and engineering data reveals no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. "Proof of Notice" advertisement and return receipts are attached.

CURRENT WELLBORE STATUS

5/17/2007

Elevation = +3835' K.B. = +12'



17-1/2" Hole Size

350' - 13 3/8", 54.5# Casing

Cemented w/400 sxs Circulated to surface

11" Hole Size

30 - 025 28521

3526' - 8 5/8", 32#, K-55 Casing

Cemented w/1500 sxs Circulated to surface

7-7/8" Hole Size

TOC @ 7600' (calculated w/caliper)

72%

Perfs 9544'-50', 9564'-66', 9573'-75', 9590', 9596'-9598', (Bone Springs)  
9606'-10'

C.I.B.P. @ 10400'

Perfs 10587'-680' (Wolfcamp)

10800' - 5 1/2", 17#, N-80 Casing

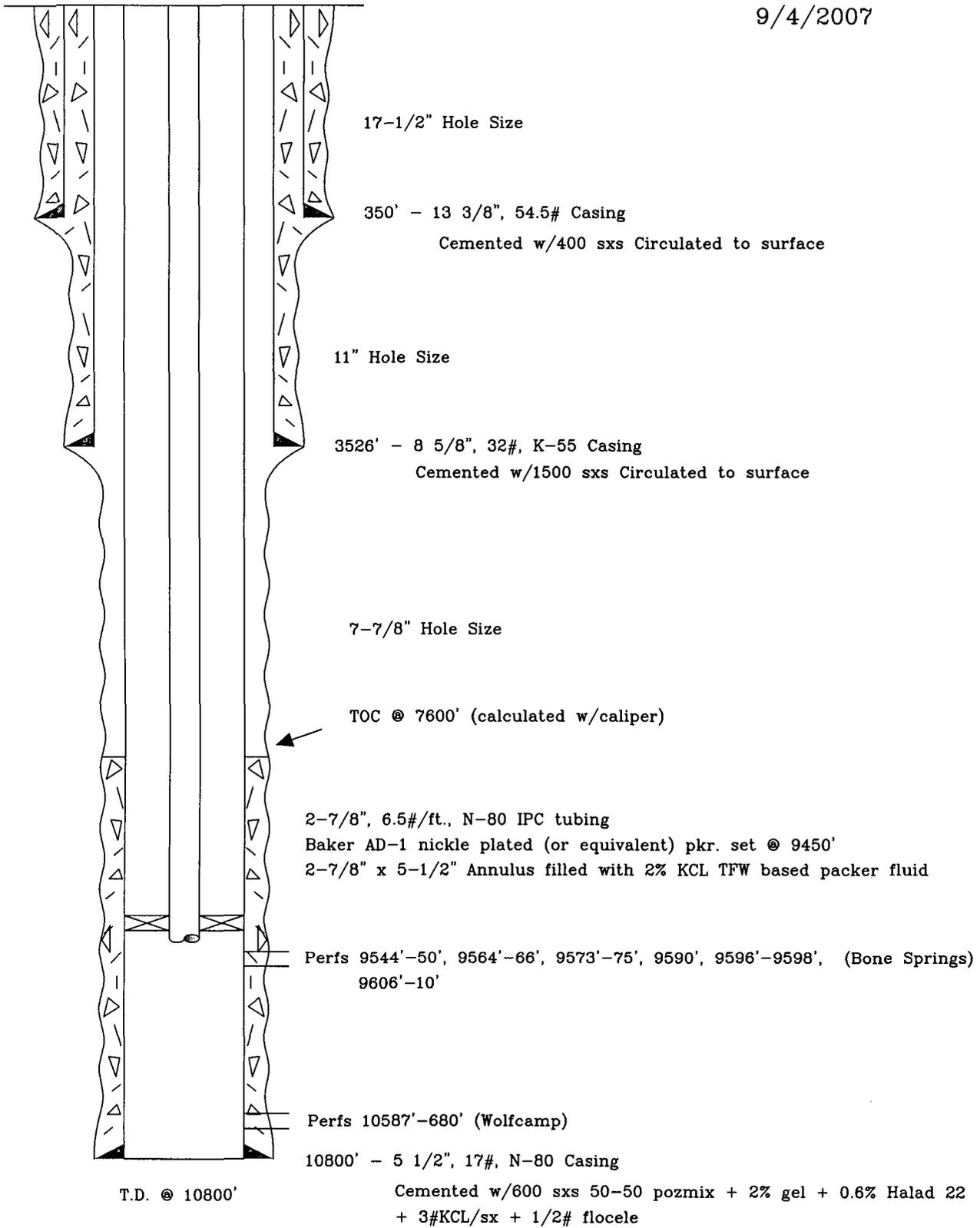
T.D. @ 10800'

Cemented w/600 sxs 50-50 pozmix + 2% gel + 0.6% Halad 22  
+ 3#KCL/sx + 1/2# flocele

LYNX PETROLEUM CONSULTANTS
Sprinkle Federal No. 3
1650' FNL & 460' FEL
Section 9, T-19S, R-35E
Lea County, New Mexico

Proposed Injection Wellbore  
9/4/2007

Elevation = +3835' K.B. = +12'



LYNX PETROLEUM CONSULTANTS  
Sprinkle Federal No. 3  
1650' FNL & 460' FEL  
Section 9, T-19S, R-35E  
Lea County, New Mexico



**APPLICATION FOR AUTHORIZATION TO INJECT  
SPRINKLE FEDERAL No. 3**

VI. DATA ON WELLS IN THE AREA OF REVIEW

1. LYNX PETROLEUM CONSULTANTS, INC.

Sprinkle Federal No. 1

2063' FNL & 841' FEL Section 9, T-19S, R-35E

Spud: 5/83 Elevation: 3825' GL TD: 10770'

17-1/2" Hole; 13-3/8" @ 350' w/350 sx. circulated

11" Hole; 8-5/8" @ 3775' w/1700 sx. circulated

7-7/8" Hole; 5-1/2" @ 10770' w/650 sx.

Perforations: 10560'-72' Wolfcamp non-productive  
CIBP @ 10463'

Perforations: 9526'-9604' Bone Springs Currently Shut-In

2. LYNX PETROLEUM CONSULTANTS, INC.

Sprinkle Federal No. 2

660' FNL & 330' FEL Section 9, T-19S, R-35E

Spud: 12/83 Elevation: 3865' GL TD: 10750'

17-1/2" Hole; 13-3/8" @ 346' w/350 sx. circulated

11" Hole; 8-5/8" @ 3480' w/1700 sx. circulated

7-7/8" Hole; 5-1/2" @ 10750' w/700 sx.; TOC @ 7950'

Perforations: 10544'-678' Wolfcamp

Perforations: 9512'-9602' Bone Springs

Plugged and Abandoned 5/07; Schematic attached

3. ELK OIL COMPANY

Elkan No. 3

1980' FSL & 1980' FEL Section 9, T-19S, R-35E

Spud: 10/83 Elevation: 3808' GL TD: 11000'

17-1/2" Hole; 13-3/8" @ 450' w/650 sx. circulated

12-1/4" Hole; 9-5/8" @ 4150' w/1650 sx. circulated

8-3/4" Hole; 7" @ 11000' w/1200 sx. circulated

Perforations: 10616'-730' Wolfcamp

Perforations: 9582'-9732' Bone Springs

Plugged and Abandoned 7/96; Schematic attached

4. NADEL & GUSSMAN

B. Lee State No. 6

519' FSL & 519' FWL Section 3, T-19S, R-35E

Spud: 9/83 Elevation: 3878' GL TD: 10800'

17-1/2" Hole; 13-3/8" @ 452' w/475 sx. circulated

PEA

PEA

DATA ON WELLS IN THE REVIEW AREA

Page 2

11" Hole; 8-5/8" @ 3975' w/1100 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10800' w/1395 sx.; TOC @ 3990'

66%  
✓

Perforations: 10506''-634' Wolfcamp; CIBP @ 10400'  
Perforations: 9476'-90' Bone Springs; CIBP @ 9407'  
Perforations: 4642'-50' Queen Currently Producing

5. MOMENTUM ENERGY CORP.

State 'MTS' No. 2  
1980' FNL & 510' FWL Section 10, T-19S, R-35E  
Spud: 2/83 Elevation: 3842' GL TD: 10770'  
17-1/2" Hole; 13-3/8" @ 300' w/350 sx. circulated  
11" Hole; 8-5/8" @ 3550' w/1600 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10770' w/600 sx.

✓

Perforations: 10558'-578' Wolfcamp Currently Producing

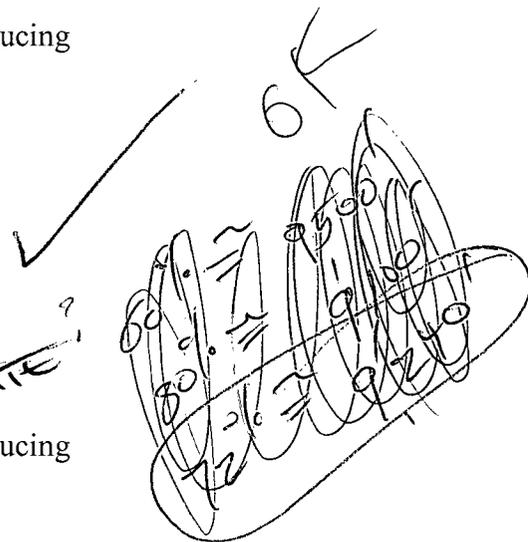
6. MOMENTUM ENERGY CORP.

State 'MTS' No. 3  
1650' FNL & 1650' FWL Section 10, T-19S, R-35E  
Spud: 7/83 Elevation: 3864' GL TD: 10820'  
17-1/2" Hole; 13-3/8" @ 325' w/350 sx. circulated  
11" Hole; 8-5/8" @ 3575' w/1300 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10820' w/300 sx.

*Preferential Survey*

+270 SX HOLE LIFE

Perforations: 10535'-775' Wolfcamp Currently Producing



7. MOMENTUM ENERGY CORP.

State 'MTS' No. 4  
330' FSL & 330' FEL Section 4, T-19S, R-35E  
Spud: 11/83 Elevation: 3889' GL TD: 10725'  
17-1/2" Hole; 13-3/8" @ 296' w/350 sx. circulated  
11" Hole; 8-5/8" @ 3550' w/1600 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10725' w/600 sx.

✓

Perforations: 9490'-9612' Bone Springs  
Plugged and Abandoned 5/06; Schematic Attached

PEA

8. YATES PETROLEUM CORP.

Vacuum State No. 2  
660' FNL & 660' FWL Section 10, T-19S, R-35E

DATA ON WELLS IN THE REVIEW AREA

Page 3

Spud: 4/83 Elevation: 3879' GL TD: 10800'  
17-1/2" Hole; 13-3/8" @ 504' w/550 sx. circulated  
11" Hole; 8-5/8" @ 4000' w/2315 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10799' w/1860 sx. ✓

Perforations: 10510'-10720' Wolfcamp  
CIBP @ 10630'  
Perforations: 10553'-570' Wolfcamp Currently Producing

9. YATES PETROLEUM CORP.

Vacuum State No. 3

660' FNL & 1980' FWL Section 10, T-19S, R-35E

Spud: 5/83 Elevation: 3844' GL TD: 10793'  
17-1/2" Hole; 13-3/8" @ 500' w/550 sx. circulated  
11" Hole; 8-5/8" @ 4037' w/1850 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10793' w/820 sx.; TOC @ 7115' ✓

Perforations: 10465'-650'; Wolfcamp  
CIBP @ 10375'  
Perforations: 8978'-8999'  
CIBP @ 8900' w/35' cement  
Plugged and Abandoned 5/87; Schematic attached

PEA

10. TEXACO

Scharb '10' State No. 1

1980' FSL & 660' FWL Section 10, T-19S, R-35E

Spud: 8/83 Elevation: 3822' GL TD: 10793'  
17-1/2" Hole; 13-3/8" @ 425' w/450 sx. circulated  
11" Hole; 8-5/8" @ 4100' w/1500 sx. circulated  
7-7/8" Hole; 5-1/2" @ 10793' w/1825 sx. circulated ✓

Perforations: 10576'-716'; Wolfcamp  
CIBP @ 10550'  
Perforations: 9562'-9620' Bone Springs  
Perforations: 9086'-9114'; Squeezed w/200 sx.  
Perforations: 9094'-9104'; Squeezed w/250 sx.  
Perforations: 9469'-9548'; Squeezed w/150 sx.  
Plugged and Abandoned 3/85; Schematic attached

PEA

DATA ON WELLS IN THE REVIEW AREA

Page 4

11. LYNX PETROLEUM CONSULTANTS, INC.

Government '9' No. 1

1980' FNL & 1980' FEL Section 9, T-19S, R-35E

Spud: 2/83 Elevation: 3823' GL TD: 10000'

17-1/2" Hole; 13-3/8" @ 410' w/450 sx. circulated ✓

12-1/4" Hole; 9-5/8" @ 4120' w/1800 sx. circulated

8-3/4" Hole; 7" @ 10000' w/1439 sx.

Perforations: 9493'-9578' Bone Springs

Plugged and Abandoned 8/96; Schematic attached

PEA

12. LYNX PETROLEUM CONSULTANTS, INC.

Government '9' No. 2

1980' FSL & 660' FEL Section 9, T-19S, R-35E

Spud: 4/83 Elevation: 3807' GL TD: 9852'

17-1/2" Hole; 13-3/8" @ 430' w/450 sx. circulated ✓

12-1/4" Hole; 9-5/8" @ 4135' w/2310 sx. circulated

8-3/4" Hole; 7" liner @ 3705'-9851' w/543 sx.

Perforations: 9442'-9608' Bone Springs

Plugged and Abandoned 6/92; Schematic attached

PEA

VII. PROPOSED OPERATIONS

1. Average Daily Rate: 500 BWPD  
Maximum Daily Rate: 1000 BWPD
2. Closed System
3. Average Injection Pressure: 1000 psig  
Maximum Injection Pressure: 1750 psig
4. Source of water will be produced water from various Morrow, Atoka, Strawn, Wolfcamp, Bone Springs, Delaware, San Andres, Penrose/Queen, and Yates-Seven Rivers formations in the immediate area. A formation water analysis from the Bone Springs in an offset well is enclosed. Wolfcamp water in this area would be similar to the Bone Springs.

VIII. This information has been previously submitted as this well was previously approved and utilized for on-lease disposal in the Wolfcamp.

IX. None

X., XI., Previously Submitted

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
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U.S.G.S. #		
LAND OFFICE		
OPERATOR		

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

Form C-103  
Revised 10-1-78

5a. Indicate Type of Lease  
State  Fee

5. State Oil & Gas Lease No.  
LG740

7. Unit Agreement Name

8. Farm or Lease Name  
State MTS

9. Well No.  
3

10. Field and Pool, or Whichever  
Scharb Wolfcamp

12. County  
Lea

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 - I" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL  GAS WELL  OTHER

2. Name of Operator  
Western Oil Producers, Inc.

3. Address of Operator  
P.O. Box 1498 Roswell, New Mexico 88201

4. Location of Well  
UNIT LETTER F 1650 FEET FROM THE North LINE AND 1650 FEET FROM  
THE West LINE, SECTION 10 TOWNSHIP 19S RANGE 35E NMPM.

15. Elevation (Show whether DF, RT, GR, etc.)  
3863.9

16. 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 OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input checked="" type="checkbox"/>	OTHER <input type="checkbox"/>

17. 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.

7/25/83 10,820' T.D., ran 5 1/2" casing, Mud Wt 8.8, Visc. 36, W.L. 8.8, 240 joints 5 1/2", 17 lb, N-80 LT & C Casing, cement at 10,820' with 300 sacks 50-50 poz mix, 270 Hite Lite 22, 3 lbs KCL, bump plug 1500 psi, plug down at 2:30 AM 7/26/83

*Note additional cement*

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

SIGNED Arnold Newkirk TITLE Agent DATE 7/27/83

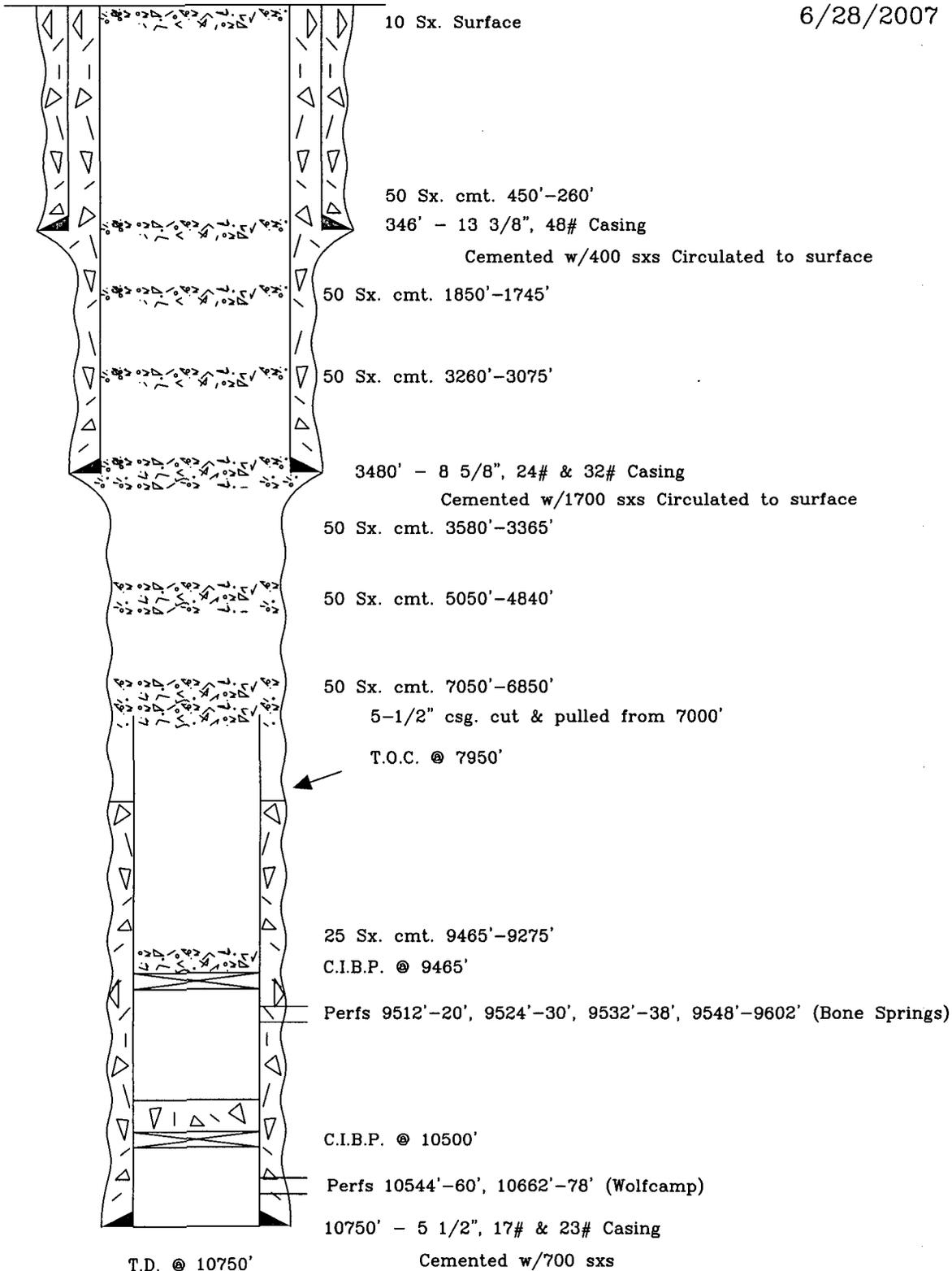
ORIGINAL SIGNED BY JERRY SEXTON  
DISTRICT 1 SUPERVISOR

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE AUG 1 1983

CONDITIONS OF APPROVAL, IF ANY:

**CURRENT WELLBORE STATUS**  
6/28/2007

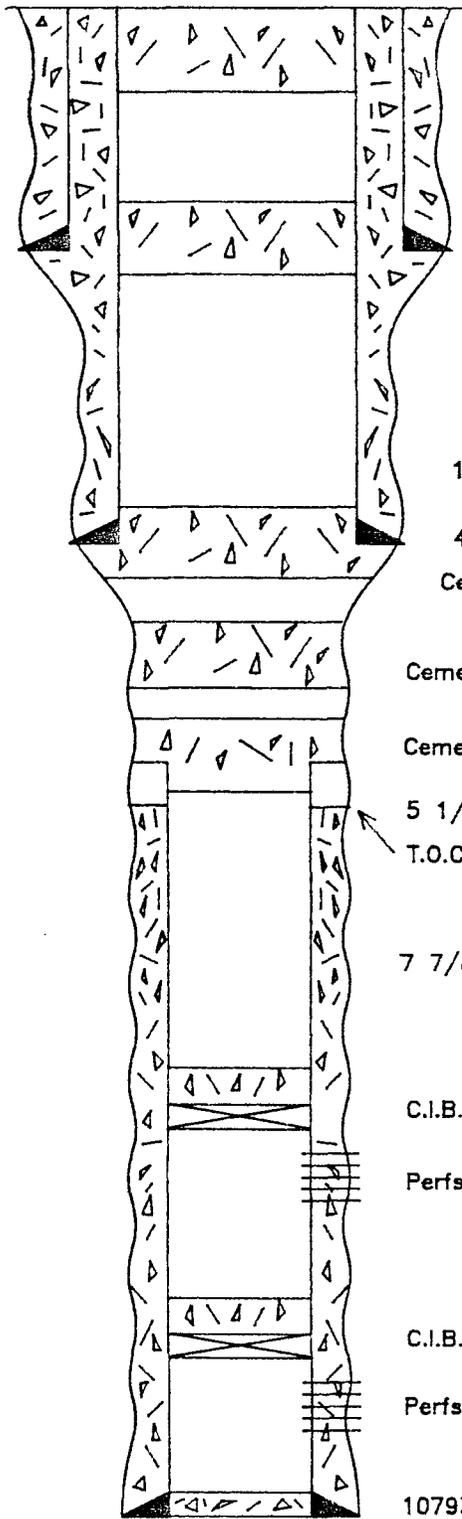
Elevation = +3865' K.B. = +12'



LYNX PETROLEUM CONSULTANTS  
Sprinkle Federal No. 2  
660' FNL & 330' FEL  
Section 9, T-19S, R-35E  
Lea County, New Mexico

Elev. 3844' G.L.

Yates Petroleum Corp.  
Plugged and Abandoned  
5/87



10 sxs Surface Plug

17 1/2" Hole Size

500' - 13 3/8" csg. Cemented w/550 sxs Circulated.  
Cement Plug 450' - 550'

11" Hole Size

4037' - 8 5/8" csg. Cemented w/1850 sxs Circulated.  
Cement Plug 3988' - 4088'

Cement Plug 5200' - 5300'

Cement Plug 6905' - 7005'

5 1/2" csg. Cut and Pulled at 6955'  
T.O.C. ● 7115' (Cement Bond Log)

7 7/8" Hole Size

C.I.B.P. ● 8900' w/35' Cement

Perfs 8978' - 8999' (Bone Springs)

C.I.B.P. ● 10375' w/35' Cement

Perfs 10465' - 10650' (Wolfcamp)

10793' - 5 1/2" csg. Cemented w/820 sxs

T.D. ● 10793'

Vacuum State No. 3

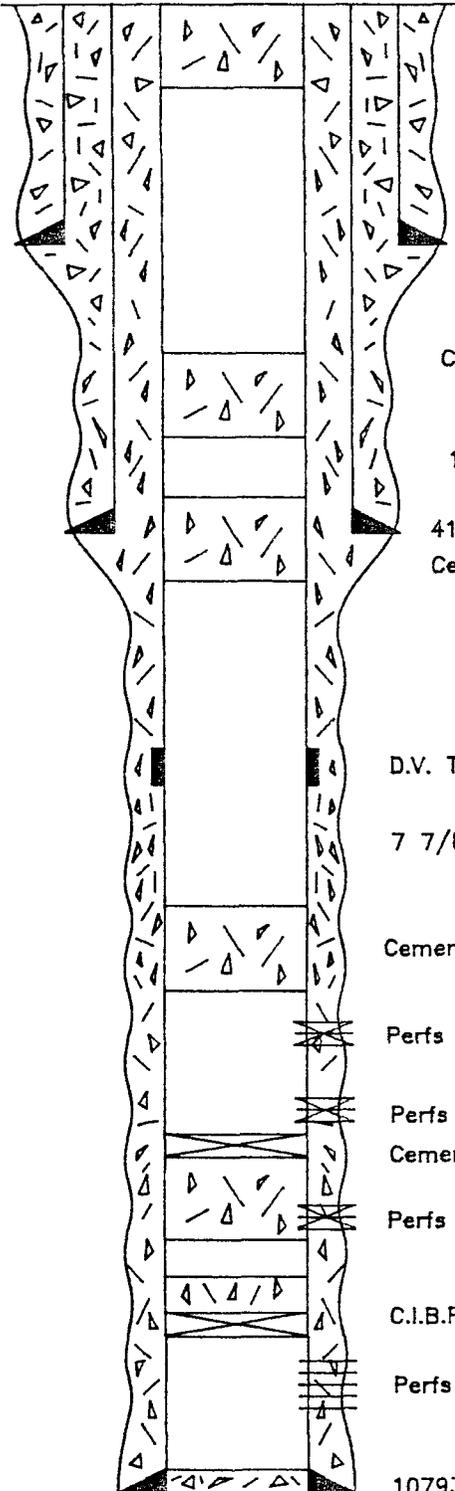
660' FNL & 1980' FWL Un. C

Sec. 10, T-19S, R-35E

Getty Oil Co. (Texaco)  
Plugged and Abandoned

3/9/85

Elev. 3122' G.L.



10 sxs Surface Plug

17 1/2" Hole Size

425' - 13 3/8" csg. Cemented w/450 sxs Circulated.

Cement Plug 1753' - 1900'

11" Hole Size

4100' - 8 5/8" csg. Cemented w/1500 sxs Circulated

Cement Plug 4005' - 4152'

D.V. Tool ● 6027'

7 7/8" Hole Size

Cement Plug 8958' - 9230'

Perfs 9094'-9104' Sqz'd w/250 sxs

Perfs 9086'-9114' Sqz'd w/200 sxs

Cement Retainer set and Sqz'd w/150 sxs

Perfs 9469'-9620'

C.I.B.P. ● 10550' w/2 sxs cement

Perfs 10576'-10716' (Wolfcamp)

10793' - 5 1/2" csg. Cemented 1st Stage w/950sxs Circ. to D.V.

2nd Stage w/875 sxs Circ. to Surface

T.D. ● 10793'

Scharb "10" State No. 1
1980' FSL & 660' FWL Un. L
Sec. 10, T-19S, R-35E

Elevation 3823' C.L. +17' K.B.

ACTUAL PLUG & ABANDONMENT

SPOT 10 SXS SURFACE PLUG 8/23/96

MUD

SPOT 25 SXS CEMENT 324'-485'  
410' - 13 3/8" Csg. Cemented w/450 sxs Circulated

MUD

SPOT 25 SXS CEMENT 1526'-1675' (TOP OF SALT)

MUD

SPOT 25 SXS CEMENT 4021'-4170'

4120' - 9 5/8" Csg. Cemented w/1800 sxs. Circulated

MUD

D.V. Tool @ 6514'

SPOT 25 SXS CEMENT 6851'-7000'

MUD

Perfs 9361'-9435' SQZ'd w/150 sxs (1/90)

SPOT 10 SXS CEMENT ON TOP OF C.I.B.P.  
C.I.B.P. @ 9450'

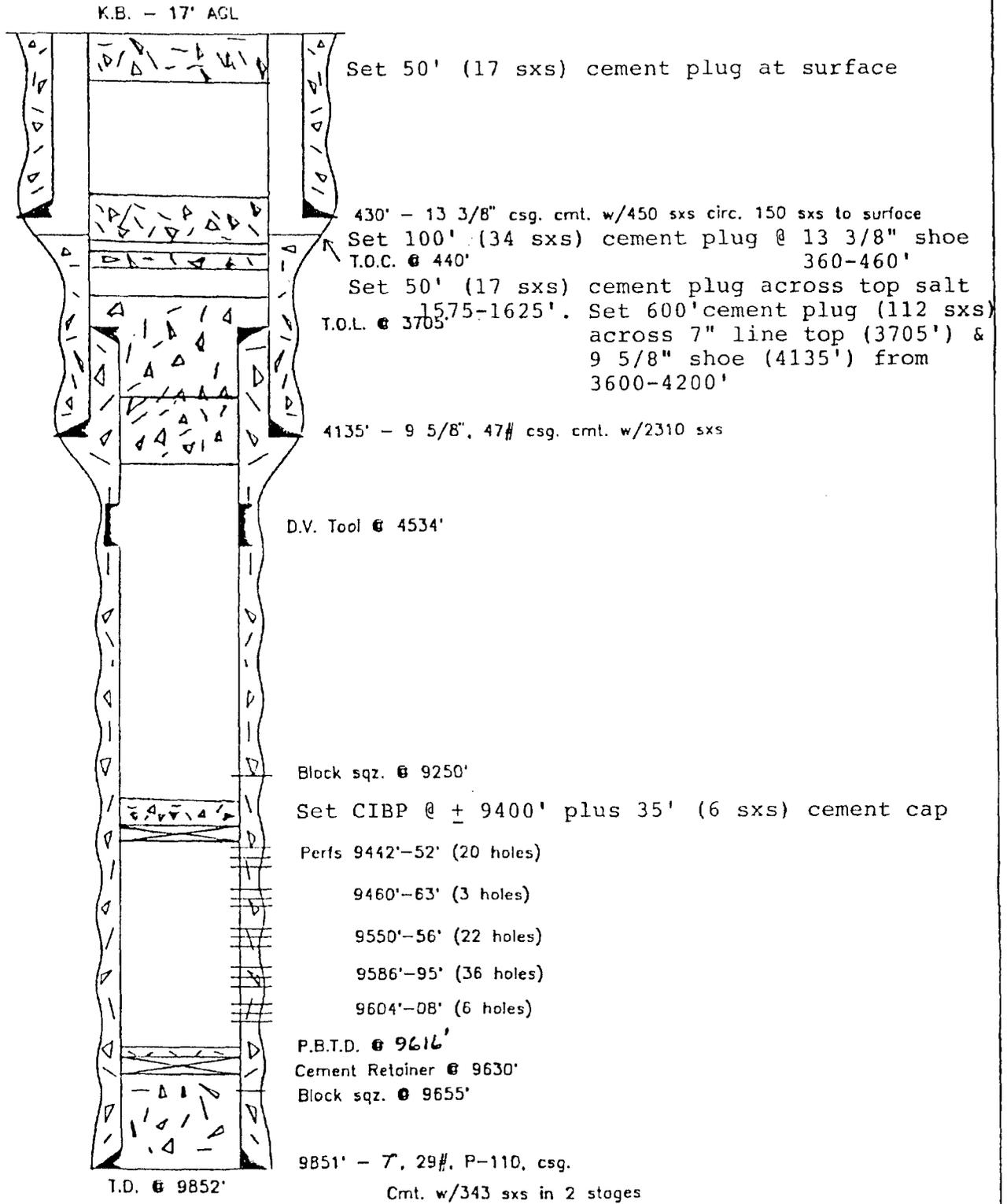
Perfs 9493'-9578'

PBTD @ 9700'

10000' - 7", 23# & 26# Csg.  
Cemented w/1439 sxs. Circulated.

T.D. @ 10000'

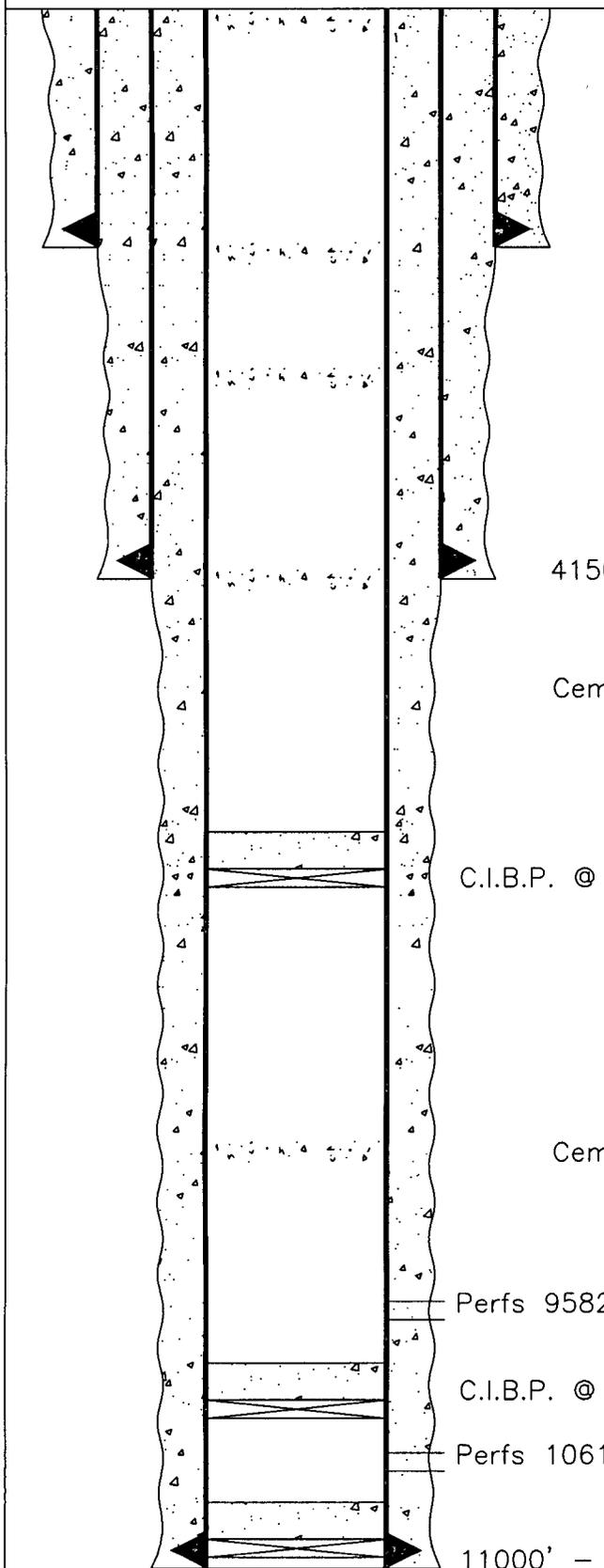
LYNX PETROLEUM
Government "9" No. 1
1980' FNL & FEL
Section 9, T-19S, R-35E
Lea County, New Mexico



GOVERNMENT "9" NO. 2
1980' FSL & 660'
SEC. 9, T-19S, R-35E

CURRENT WELLBORE  
7/31/96

Elevation: 3808' GL



450' - 13 3/8" Casing  
Cemented w/650 sxs. Circulated to Surf.

Cement Plugs: Surface  
500'-300'

4150' - 9 5/8" Casing  
Cemented w/1650 sxs. Circulated to Surface

Cement Plugs: 4150'-3950'  
2000'-1800'

C.I.B.P. @ 5100' w/25 sx. Cement on Top

Cement Plug: 6500'-6300'

Perfs 9582'-9732'

C.I.B.P. @ 10400' w/35' Cement on Top

Perfs 10616'-10730'

T.D. @ 11000'

11000' - 7" Casing  
Cemented w/1200 sx. Circulated  
to Surface

Elk Oil Company
Elkan No. 3
1980' FSL & 1980' FEL
Sec. 9, T-19S, R-35E
Lea County, N.M.

# TRETOLITE

Chemicals and Services



16010 Barker's Point Lane • Houston, Texas 77079  
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box 5260  
Hobbs, New Mexico 88241  
(505) 392-6711 Phone  
(505) 392-3759 Fax

## WATER ANALYSIS REPORT

Company : LYNX PETROLEUM  
Address : HOBBS, NM  
Lease : SPRINKLE FEDERAL  
Well : #1  
Sample Pt. : WELLHEAD

Date : 08/02/91  
Date Sampled : 07/30/91  
Analysis No. : 702

ANALYSIS	mg/L	* meq/L
1. pH	5.6	
2. H2S	4 PPM	
3. Specific Gravity	1.165	
4. Total Dissolved Solids	223180.5	
5. Suspended Solids		
6. Dissolved Oxygen		
7. Dissolved CO2	160 PPM	
8. Oil In Water		
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	100.0	
11. Bicarbonate	HCO3 122.0	HCO3 2.0
12. Chloride	Cl 137021.3	Cl 3865.2
13. Sulfate	SO4 600.0	SO4 12.5
14. Calcium	Ca 16456.8	Ca 821.2
15. Magnesium	Mg 1502.4	Mg 123.6
16. Sodium (calculated)	Na 67473.2	Na 2934.9
17. Iron	Fe 4.7	
18. Barium	Ba 0.0	
19. Strontium	Sr 0.0	
20. Total Hardness (CaCO3)	47282.5	

### PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
821 *Ca <----- *HCO3	Ca(HCO3)2	81.0	2.0	162
124 *Mg -----> *SO4	CaSO4	68.1	12.5	850
2935 *Na -----> *Cl	CaCl2	55.5	806.7	44764
	Mg(HCO3)2	73.2		
	MgSO4	60.2		
	MgCl2	47.6	123.6	5884
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	2934.9	171515
BaSO4 2.4 mg/L				

REMARKS:

D. SWEATT / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
ROZANNE JOHNSON

# Lynx Petroleum Consultants, Inc.

P.O. Box 1708  
3325 Enterprise Drive  
Hobbs, New Mexico 88241

505 392-6950

Fax: 505 392-7886

August 10, 2007

## CERTIFIED RETURN RECEIPT

7007 0220 0001 1731 8955

Mr. Kress Jones  
3729 West Sanger  
Hobbs, NM 88240

Re: Sprinkle Federal No. 3 E/2 NE/4 Section 9  
Township 19S, Range 35E, Lea County, New Mexico  
Salt Water Disposal Contract

Dear Kress:

Per our recent phone conversations, enclosed is a contract covering surface operations and the utilization of the Sprinkle Federal lease for a commercial SWD operation.

Two copies of the contract are included with this letter. Please sign and return one to us at your earliest convenience. The other copy may be retained for your files. Also enclosed is a copy of the State of New Mexico SWD application that we will be filing for approval to convert the Sprinkle Federal No. 3 wellbore to disposal. If you have any objection to our proposed plan you must contact the New Mexico Oil Conservation Division Office, 1220 South St. Francis Drive, Santa Fe, NM 87505 within 15 days of your receipt of this letter.

Thanks in advance for your prompt consideration and do not hesitate to call or write if you have any questions.

Sincerely,

LYNX PETROLEUM CONSULTANTS, INC.

  
Larry R. Scott

Cc w/enclosure: Jim Amos – Bureau of Land Management

7007 0220 0001 1731 8955

U.S. Postal Service	
<b>CERTIFIED MAIL RECEIPT</b>	
(Domestic Mail Only - No Insurance Coverage Provided)	
OFFICIAL USE	
For delivery information visit our website at www.usps.com	
Hobbs NM 88240	0240
Postage \$ 1.05	Certified Fee 2.05
Return Receipt Fee (Endorsement Required) 2.15	Restricted Delivery Fee (Endorsement Required) \$0.00
Total Postage & Fees \$ 4.25	
Sent to: Kress Jones	Postmark: HOBBNS NM 88240
Street, Apt. No. or PO Box No. 3729 West Sanger	Here: AUG 10 2007
City, State, ZIP+4 Hobbs NM 88240	08/10/2007
Special Agent August 2008 See Reverse Side Instructions	

AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period.

of 3 weeks.

Beginning with the issue dated July 25 2007 and ending with the issue dated August 8 2007

*Kathi Bearden*

Publisher

Sworn and subscribed to before

me this 8th day of

August 2007  
*Dora Montz*

Notary Public.

My Commission expires February 07, 2009 (Seal)



OFFICIAL SEAL  
DORA MONTZ  
NOTARY PUBLIC  
STATE OF NEW MEXICO

My Commission Expires: \_\_\_\_\_

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

**LEGAL NOTICE**  
July 25, 2007  
August 1, 8, 2007

**NOTICE OF WATER DISPOSAL WELL**

Lynx Petroleum Consultants, Inc. P.O. Box 1708, Hobbs, NM 88241, 505-392-6950, Contact - Larry R. Scott, has made application to the New Mexico Oil Conservation Division to convert the Sprinkle Federal No. 3 well from a producer into a commercial salt-water disposal well. The well is located in Section 9, T-19S, R-35E, Lea County, New Mexico. Disposal will be into the Bone Springs and Wolfcamp formations between 9,544 and 10,680 feet. Interested parties must file objections or a request for a hearing with the NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico, 97505, within 15 days of this notice #23418.

03100598000 67545087  
LYNX PETROLEUM, INC.  
P.O BOX 1708  
HOBBS, NM 88241

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Yates Pest Corp.  
105 S. 4th St.  
Artesia, NM  
88210

2. Article Number (Transfer from service label) 7005 3110 0000 2022 4982

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature **X** *Kathy Donahue*  
B. Received by (Printed Name) **KATHY DONAHUE**  
C. Date of Delivery  
D. Is delivery address different from item 1?  Yes  No  
If YES, enter delivery address below:

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.  
 4. Restricted Delivery? (Extra Fee)  Yes

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Chesapeake Ope  
Box 11050  
2010 Rankin Hiway  
Midland, TX 79702

2. Article Number (Transfer from service label) 7005 3110 0000 2022 4951

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-15

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature *M. McCallister*  
B. Received by (Printed Name) **MARIE ALMAGER**  
C. Date of Delivery **7-3-07**  
D. Is delivery address different from item 1?  Yes  No  
If YES, enter delivery address below:

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.  
 4. Restricted Delivery? (Extra Fee)  Yes

US Postal Service  
**CERTIFIED MAIL RECEIPT**  
(Domestic Mail Only, No Insurance Coverage Provided)  
For delivery information visit our website at www.usps.com

ARTESIA NM 88210  
**SPECIAL USE**

Spring Postage SWD	\$ 1.33	0640
Certified Fee	\$ 1.65	06
Return Receipt Fee (Endorsement Required)	\$ 1.15	
Restricted Delivery Fee (Endorsement Required)	\$ 0.00	
Total Postage & Fees	\$ 4.13	0773072007

Sent To **Yates Pest Corp.**  
Street, Apt. No. or PO Box No. **105 S. 4th St.**  
City, State, ZIP+4 **Artesia NM 88210**

US Postal Service  
**CERTIFIED MAIL RECEIPT**  
(Domestic Mail Only, No Insurance Coverage Provided)  
For delivery information visit our website at www.usps.com

MIDLAND TX 79702  
**SPECIAL USE**

Spring Postage SWD	\$ 1.33	0640
Certified Fee	\$ 1.65	06
Return Receipt Fee (Endorsement Required)	\$ 1.15	
Restricted Delivery Fee (Endorsement Required)	\$ 0.00	
Total Postage & Fees	\$ 4.13	0773072007

Sent To **Chesapeake Ope**  
Street, Apt. No. or PO Box No. **Box 11050, 2010 Rankin Hiway**  
City, State, ZIP+4 **Midland TX 79702**

2005 3110 0000 0116 5002

2005 3110 0000 0116 5002

SENDER: COMPLETE THIS SECTION

1. Article Addressed to:  
Nodel & Gussman  
Remman, LLC  
601 N. Marienfeld  
St., Ste 508  
Midland, TX 79701

2. Article Number  
(Transfer from service label)  
7005 3110 0000 2022 4937

PS Form 3811, February 2004  
Domestic Return Receipt  
102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature  
*[Signature]*  
B. Received by (Printed Name)  
LAWRENCE [Signature]  
C. Date of Delivery  
JUL 23 2007  
D. Is delivery address different from item 1?  
If YES, enter delivery address below:  
USPS

3. Service Type  
 Certified Mail  
 Registered  
 Insured Mail  
 Express Mail  
 Return Receipt for Merchandise  
 C.O.D.  
4. Restricted Delivery? (Extra Fee)  Yes

SENDER: COMPLETE THIS SECTION

1. Article Addressed to:  
Momentum  
Energy Corp  
Box 3398  
200 N. Loraine, Ste 610  
Midland, TX 79702

2. Article Number  
(Transfer from service label)  
7005 3110 0000 2022 4975

PS Form 3811, February 2004  
Domestic Return Receipt  
102595-02-M-154

COMPLETE THIS SECTION ON DELIVERY

A. Signature  
*[Signature]*  
B. Received by (Printed Name)  
SANDRA [Signature]  
C. Date of Delivery  
JUL 25 2007  
D. Is delivery address different from item 1?  
If YES, enter delivery address below:  
USPS

3. Service Type  
 Certified Mail  
 Registered  
 Insured Mail  
 Express Mail  
 Return Receipt for Merchandise  
 C.O.D.  
4. Restricted Delivery? (Extra Fee)  Yes

U.S. Postal Service  
CERTIFIED MAIL RECEIPT  
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For delivery information, visit our website at www.usps.com

OFFICIAL USE  
MIDLAND TX 79701

Spurred Postage	\$ 1.31
Certified Fee	\$ 2.65
Return Receipt Fee (Endorsement Required)	\$ 2.15
Restricted Delivery Fee (Endorsement Required)	\$ 0.00
Total Postage & Fees	\$ 6.11

Postmark Here  
MIDLAND TX 79701  
JUL 20 2007

Sent To  
Nodel & Gussman Remman, LLC  
Street, Apt. No.  
or PO Box No. 601 N. Marienfeld St.  
City, State, ZIP+4  
Ste 508 Midland TX 79701  
PS Form 3811, June 2002 See Reverse for Instructions

U.S. Postal Service  
CERTIFIED MAIL RECEIPT  
(Domestic Mail Only, No Insurance Coverage Provided)  
For delivery information, visit our website at www.usps.com

OFFICIAL USE  
MIDLAND TX 79702

Spurred Postage	\$ 1.31
Certified Fee	\$ 2.65
Return Receipt Fee (Endorsement Required)	\$ 2.15
Restricted Delivery Fee (Endorsement Required)	\$ 0.00
Total Postage & Fees	\$ 6.11

Postmark Here  
MIDLAND TX 79702  
JUL 20 2007

Sent To  
Momentum Energy Corp  
Street, Apt. No.  
or PO Box No. Box 3398, 200 N. Loraine  
City, State, ZIP+4  
Ste 610 Midland TX 79702  
PS Form 3811, June 2002 See Reverse for Instructions

5264 2202 0000 017E 5002

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 Forest Oil Permian  
 Corp  
 707 17th St, Ste  
 3600  
 Denver, CO 80202

2. Article Number  
 (Transfer from service label) 7007 0220 0001 1731 8986

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

- A. Signature *J. MANIS CABE*  Agent  Addressee
- B. Received by (Printed Name) \_\_\_\_\_ C. Date of Delivery *8/17/07*
- D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes  No

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 Exxon Mobil  
 800 Bell St.  
 Houston, TX 77002

2. Article Number  
 (Transfer from service label) 7005 3110 0000 2022 4944

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

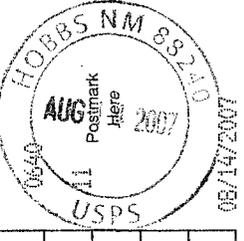
- A. Signature *James Cabre*  Agent  Addressee
- B. Received by (Printed Name) \_\_\_\_\_ C. Date of Delivery \_\_\_\_\_
- D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes  No

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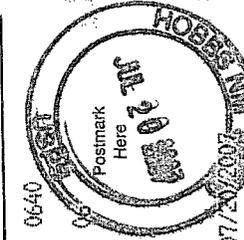


Postage \$	1.31
Certified Fee	2.65
Return Receipt Fee (Endorsement Required)	2.15
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees \$	6.11

Sent To  
 Forest Oil Permian Corp  
 Street, Apt. No.,  
 or PO Box No. 707 17th St, Suite  
 City, State, ZIP+4  
 Denver CO 80202 3600  
 PS Form 3800, August 2005 See Reverse for Instructions

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**OFFICIAL USE**



Postage \$	1.31
Certified Fee	2.65
Return Receipt Fee (Endorsement Required)	2.15
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees \$	6.11

Sent To  
 Exxon Mobil  
 Street, Apt. No.,  
 or PO Box No. 800 Bell St  
 City, State, ZIP+4  
 Houston TX 77002  
 PS Form 3800, June 2002 See Reverse for Instructions

4944 2022 0000 0000 0000 0000 0000 0000

**Jones, William V., EMNRD**

---

**From:** Jones, William V., EMNRD  
**Sent:** Wednesday, August 29, 2007 4:49 PM  
**To:** 'lrsconfig@leaco.net'  
**Cc:** Ezeanyim, Richard, EMNRD  
**Subject:** SWD Application: Sprinkle Federal #3 API No: 30-025-28521

**Tracking:** **Recipient**                      **Read**  
                  'lrsconfig@leaco.net'  
                  Ezeanyim, Richard, EMNRD Read: 8/30/2007 8:31 AM

Hello Larry Scott:

Received your application to resume injection into this well - with Bone Spring and Wolfcamp perms.

- 1) Please send a post conversion, wellbore diagram.
- 2) Please send a rough plotted history of injection (Injection Rate vs Time) into this well - while it was a Wolfcamp injection well operated by Lynx.  
What was the normal injection pressure into the Wolfcamp within the last year or so of injecting? (was it tight)
- 3) Does Lynx still own the mineral rights in the Bone Spring?  
What happened to the Bone Spring production? What and where is the nearest active Bone Spring producer and what is the production capability of the Bone Spring now in this area? What is the structure or strat trap of the Bone Spring in this area and how does this well's location relate to that areally? Even if no more oil can be recovered, what is your estimation of the remaining percentage of OOIP for the Bone Spring in and near this well? and, in your opinion, how could any more Bone Spring oil be recovered in this area? Why hasn't horizontal wells been used or closer spaced vertical wells?
- 4) Since this will be a commercial SWD, how will the surface facilities be affected by this? Will water be trucked in? Will the tank battery be near the well?
- 5) The surface location is owned by the BLM? Please send proof that they (surface owner) are aware of this application.

Thank You,

William V. Jones PE  
New Mexico Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505  
505-476-3448

8/30/2007

# Lynx Petroleum Consultants, Inc.

P.O. Box 1708  
3325 Enterprise Drive  
Hobbs, New Mexico 88241

505 392-6950

Fax: 505 392-7886

RECEIVED

2007 SEP 7 PM 12 07

September 4, 2007

Mr. William Jones ✓  
New Mexico Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505

Re: SWD Application: Sprinkle Federal No. 3, API No. 30-015-28521  
Your E-mail (attached) of 8/29/2007

Dear Will:

1. A proposed post conversion diagram is attached.
2. All water produced by the Sprinkle Federal No. 1 was injected into the Wolfcamp in the No. 3 subsequent to its conversion to an injector. Enclosed is the production curve for the No. 1 including water production. A small triplex pump was installed years ago when the well was first converted to injection but has not been in service for a very long time (we are guessing 10+ years). Since that time the well has taken all of the Sprinkle No. 1 water on a vacuum.
3. The Sprinkle lease is HBP. The 2<sup>nd</sup> Bone Springs carbonate is a vugular and fractured dolomitized debris flow with very good permeability. Bottom hole pressure in this reservoir is extremely low, on the order of 25-50 psi. Of the 94 wells originally completed in this field, only 8 remain active with the closest being the Forest Oil Permian Corporation's Scharb '9' No. 2 located in Unit F of Section 9, T-19S, R-35E. This is approximately ½ mile from our proposed injector. I have enclosed a copy of the paper by Mazullo and Reid which details the depositional environment and structure of the Scharb field. Basically the dip is northeast to southwest with the Sprinkle No. 3 located at the northeast edge of the field. Bone Spring porosity is completely absent east of our location. We have not done an extensive field analysis to determine the percentage of original oil remaining in place. The close well spacing coupled with high permeabilities and extremely low bottom hole pressures would lead to a conclusion that the field has already been effectively drained. The high permeability reservoir characteristics also work against additional recovery either with horizontal technology or waterflooding.
4. We plan to use the existing tank battery (perhaps augmented to provide additional settling/oil recovery time) currently located adjacent to the Sprinkle Federal No. 1.
  1. Water will be trucked in with a possibility of a short pipeline constructed to an unloading station off U.S. 62/180 south of the well.

Mr. William Jones  
New Mexico Oil Conservation Division  
September 4, 2007  
Page 2

5. The surface is locally owned by Kress Jones and a surface use Agreement has already been signed by all parties. A copy is available for your review if required.

I hope that I have addressed all of your questions but don't hesitate to call, E-mail or write if you have any additional. Thanks in advance for your consideration.

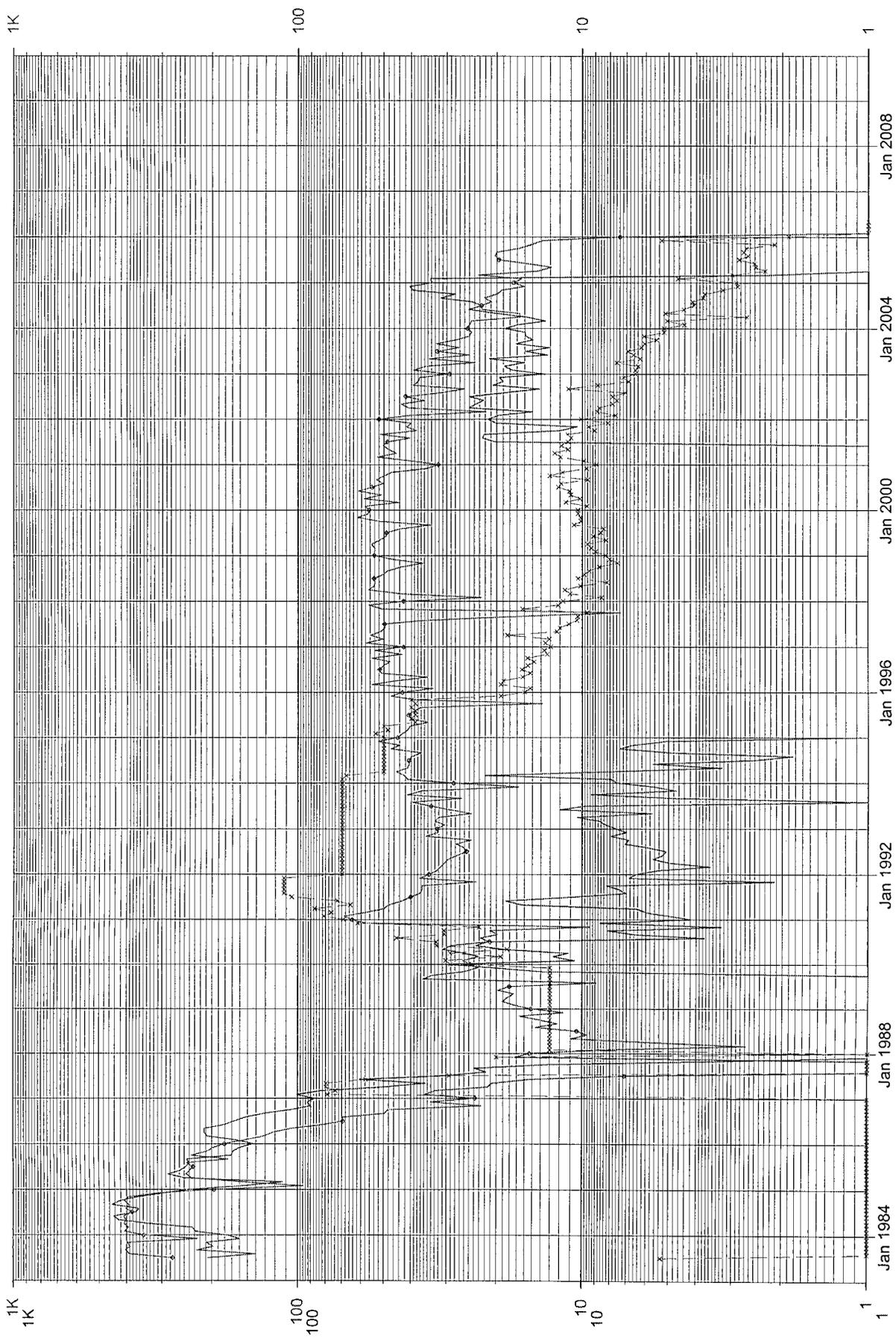
Sincerely,

LYNX PETROLEUM CONSULTANTS, INC.

  
Larry R. Scott

Field: SCHARB (BONE SPRING) 55610  
Operator: LYNX PETROLEUM CONSULTANTS INC 013645  
Lease Name: SPRINKLE FEDERAL 001  
LPD ID: 30025282155610  
Location: 19S35E09H

County, State: LEA, NM  
Status and Date: ACT 1983/07/01  
District: 1, Phase: OIL  
Gas Cum: 353773, Oil Cum: 551027



— Monthly Daily Average Gas Produced  
x Monthly Daily Average Water

Monthly Daily Average Oil Produced

Rate Vs Time Graph All Data - Gas, Oil, Water

CD Date: 200704

Copyright 11:06:33 06/30/07, Lasser, Inc.

# Stratigraphy of the Bone Spring Formation (Leonardian) and Depositional Setting in the Scharb Field, Lea County, New Mexico

Louis J. Mazzullo  
Nearburg Producing Company  
Midland, Texas

A. M. Reid, II  
Geological Consultant  
Midland, Texas

## ABSTRACT

The Scharb Field of Lea County, New Mexico is oil-productive from allochthonous (detrital) carbonates of the Bone Spring Formation (Leonardian). The carbonate reservoirs are found in the Lower Bone Spring (formerly referred to as the Wolfcamp), and beneath the Second and First Bone Spring sandstones. These detrital carbonates were derived by erosion of coeval Leonardian shelves which were located up to 12 miles north of the sites of deposition, in contrast to the carbonate wedges of other fields along the Bone Spring trend which were deposited on the immediate foresheff.

## INTRODUCTION

The Bone Spring Formation in the subsurface of southeastern New Mexico is a sequence of more than 2,000 feet of basinal carbonates, sandstones, and shales which are temporally equivalent to Leonardian carbonates of the Northwest Shelf and Central Basin Platform (variously referred to as Yeso, Abo, Clear Fork, and Wichita). The shelf marginal facies on the Northwest Shelf in Lea County, colloquially referred to as "Abo" carbonates, have produced substantial amounts of oil in such fields as Vacuum, Corbin and Lovington. The Bone Spring Formation is oil-productive from allochthonous (detrital) basinal carbonates and sandstones in Lea County and eastern Eddy County, New Mexico (e.g., Wiggins and Harris, 1985). The carbonate reservoirs here are developed from 2 to 12 miles basinward of coeval Leonardian shelf edges and include such fields as Scharb, Airstrip, Midway, Lea, Mescalero Escarpe, and Young (fig. 1). Sandstone reservoirs in the Bone Spring Formation are important in the Querecho Plains (QP), and E-K Fields, which are slightly basinward of the carbonate fields.

Although many companies have been active in the Bone Spring trend of Lea County, very little information has been published on the stratigraphy and depositional settings of these important reservoirs. The detrital nature of the carbonate reservoirs has been described from a core study of the Airstrip Field (Wiggins and Harris, 1985), and in the Scharb and Mescalero Escarpe Fields (Luff, 1967 and Friedman et al., 1986). The exact age relationships of the various producing horizons in the Bone Spring fields have not yet been formally addressed.

The Bone Spring Formation was studied over a large area of Lea County through the use of sample analyses, subsurface correlations, and fusulinid biostratigraphy. The results of this study provide a review of the tectonic and sedimentological history of the subsurface Leonardian section in Lea County and will be further elaborated on in future papers (L. J. Mazzullo, 1987; S. J. Mazzullo et al., 1987). The purpose of this present paper is to discuss the stratigraphy of the basinal Leonardian section in the northern Delaware Basin and relate it to the carbonate producing zones and depositional history of the most complex Bone Spring reservoir system in the area, represented by the facies in the Scharb Field.

## LOCATION AND STRATIGRAPHIC SETTING

Figure 1 is a location map showing the present structural outlines in the subsurface of central Lea County, New Mexico and the locations of the major Bone Spring fields in relation to the Leonardian shelf edge. The Leonardian shelf is approximately 18 miles north of the Upper Permian Northwest Shelf-edge, but the Bone Spring fields are all within Leonardian (Lower Permian) basinal settings.

Subsurface correlations of the Bone Spring section are relatively easy at distances from the Leonardian shelf, and the high density of wells along the Bone Spring trend make comparisons among wells fairly straightforward. Figure 2 presents the fusulinid biostratigraphy of the Bone Spring Formation in the northern basin analyzed from the Sinclair #1-403 State (Se 22-Twp. 18S-Rge. 35E) and correlated to a type log in the Scharb Field, 3½ miles to the south. The Sinclair well was selected for analysis because of unusually large well cuttings with excellent suites of undolomitized fusulinids and good correlations of lithologies to the well log. Over thirty samples of oriented fusulinids were examined and assigned ages; sample cuttings were also examined, described, and compared to suites of well samples (cuttings) examined from the Scharb Field.

All of the Earliest Leonardian fusulinids found below the base of the Third Bone Spring sandstone in the Sinclair well belong to the *Schwagerina crassitectoria* assemblage subzone which is the earliest Leonardian fusulinid zone recognizable (S. J. Mazzullo et al., 1987). This suite of fusulinids confirms the presence of Leonardian strata below the base of the Third Bone Spring sandstone in Lea County, several hundred feet above the top of the first appearance of Wolfcampian fossils. These Early Leonardian fusulinids are the same age as the Earliest Leonardian fusulinids found in the Midland Basin immediately below the Dean Sandstone (S. J. Mazzullo and Reid, 1987; S. J. Mazzullo and Reid, in press), lending credence to the correlation of the Dean Sandstone in the Midland Basin to the Third Bone Spring sand in the Delaware Basin. In addition, fusulinid ages suggest that the Second Bone Spring sandstone in the Sinclair well is correlative to the Lower Permian Spraberry of the Midland Basin (S. J. Mazzullo et al., 1987).

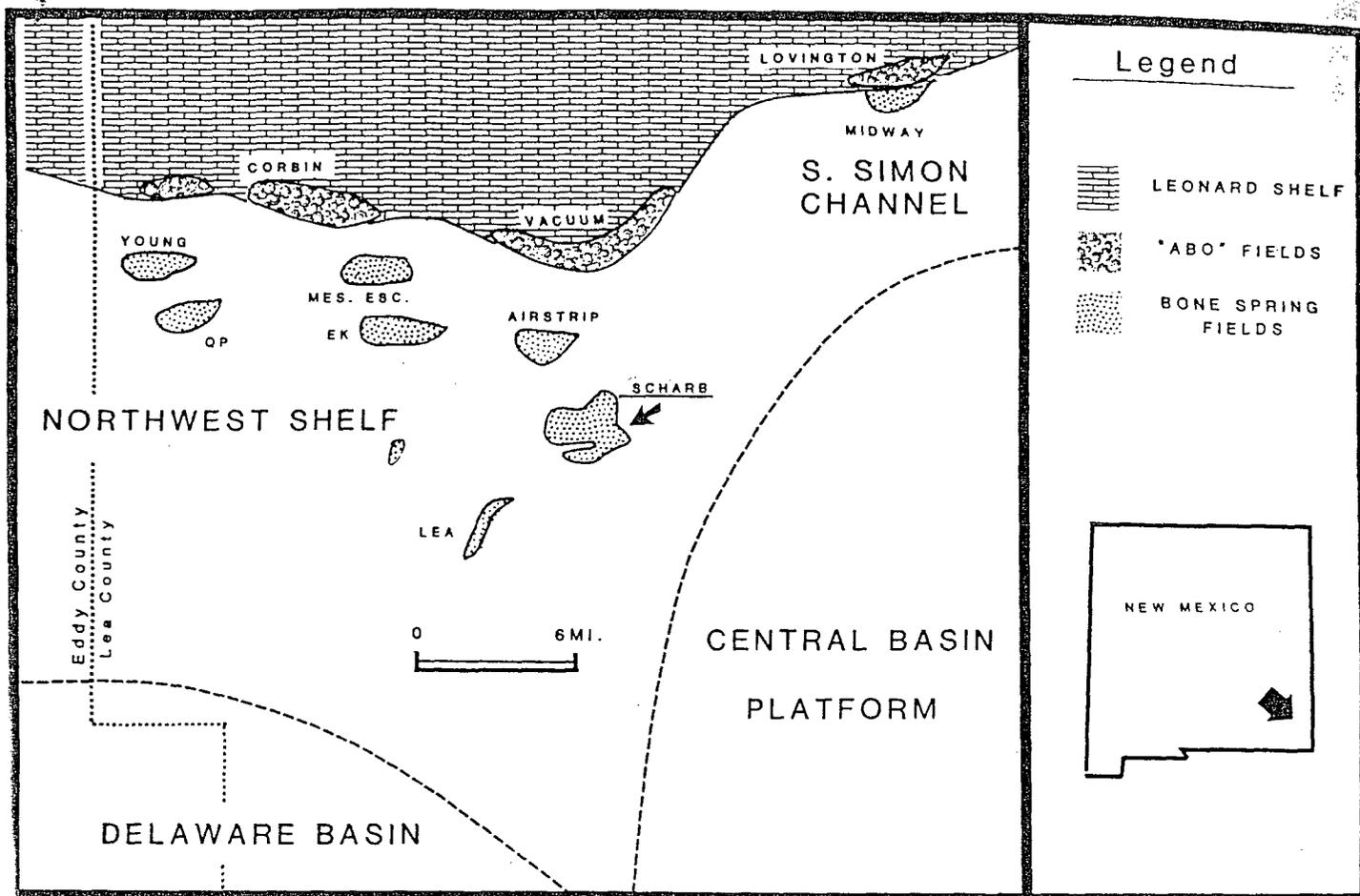


Figure 1. Location of the Scharb Field and Bone Spring trend of Lea County, New Mexico. Dashed lines are outlines of Late Permian structural subdivisions.

### THE SCHARB FIELD

The Scharb Field pays from three zones indicated by the different patterns on the type log in Figure 2. As of early 1986, this field has produced in excess of 11,500,000 barrels of oil from 61 active wells. Production was first established in the field in 1962 in the Marathon #1 State "NPA" in Sec. 6, T.19S-5E (Luff, 1967). Reservoirs are all solution gas-drive types and are stratigraphic traps developed by the encasement of porous carbonates in tight, basinal, and slope carbonates and shales.

The Scharb Field is by far the most complex in the Bone Spring trend in terms of the number of different zones from which it pays. The two most important pay zones contributing to total oil reserves are immediately above the top of the Second Bone Spring sandstone and immediately below this same sandstone (the latter is referred to by some operators as the Scharb Zone<sup>TM</sup>). The third and least important zone is what has been called the Wolfcamp, located immediately below the Third Bone Spring sandstone. It has traditionally been assumed that the carbonate unit below the Third Bone Spring sandstone was the upper part of the Wolfcamp, but the fusulinid stratigraphy now puts the Wolfcamp contact further down in the section (fig. 3) (S. J. Mazzullo et al., 1987). Although Wolfcamp fusulinids have been identified in carbonate clasts within the Lowest Leonard section, they represent reworked material deposited with lower Bone Spring detritus.

The pay sections beneath the First and Third Bone Spring sandstones in the Scharb Field are sequences of foreshelf carbonate debris flows interbedded with basinal shales and dark, micritic carbonates. This conclusion is based upon examination of well

cuttings from several wells in the field and comparison to well cuttings and core descriptions (Wiggins and Harris, 1985) from the neighboring Airstrip Field (fig. 1). Lithologies in these pay zones range from shaly to cherty dolomite wackestones. The Scharb Zone appears to be a single major debris flow up to 65 feet thick and is comprised of vugular, dolomitized limestone with visible oxidized clasts. Most of the clasts in the Airstrip Field and presumably in the Scharb Field represent reworked shelf carbonates (Wiggins and Harris, 1985 and Friedman et al., 1986).

Figure 3 is a structure map drawn on top of the Second Bone Spring sandstone in the Scharb Field, showing the wells which pay from the three gross pay zones (using the same patterns as in Figure 2). Many wells pay from two or more of the zones as indicated (fig. 3) where the patterns overlap. The structure contours are sub-parallel to the western margin of the Central Basin Platform on the east side of the field, but parallel the Leonardian shelf on the north side of the field. The subtle nosing of structure on the west side of the field corresponds to the stratigraphic buildup of detritus in the underlying "Scharb Zone." Isopachs of individual detrital units within the various pay zones indicate transport directions of detritus from the shelf to the south-southwest.

The change in strike of the structural contours on top of the Second Bone Spring sandstone (fig. 3) is believed to reflect the influence of a topographic trough which persisted throughout much of Leonardian time. Figure 4 is a structure map of the underlying "Atoka shale." It shows steep southwesterly dip with no obvious change in structural strike on the north side of the

(Type well of Scharb Field)

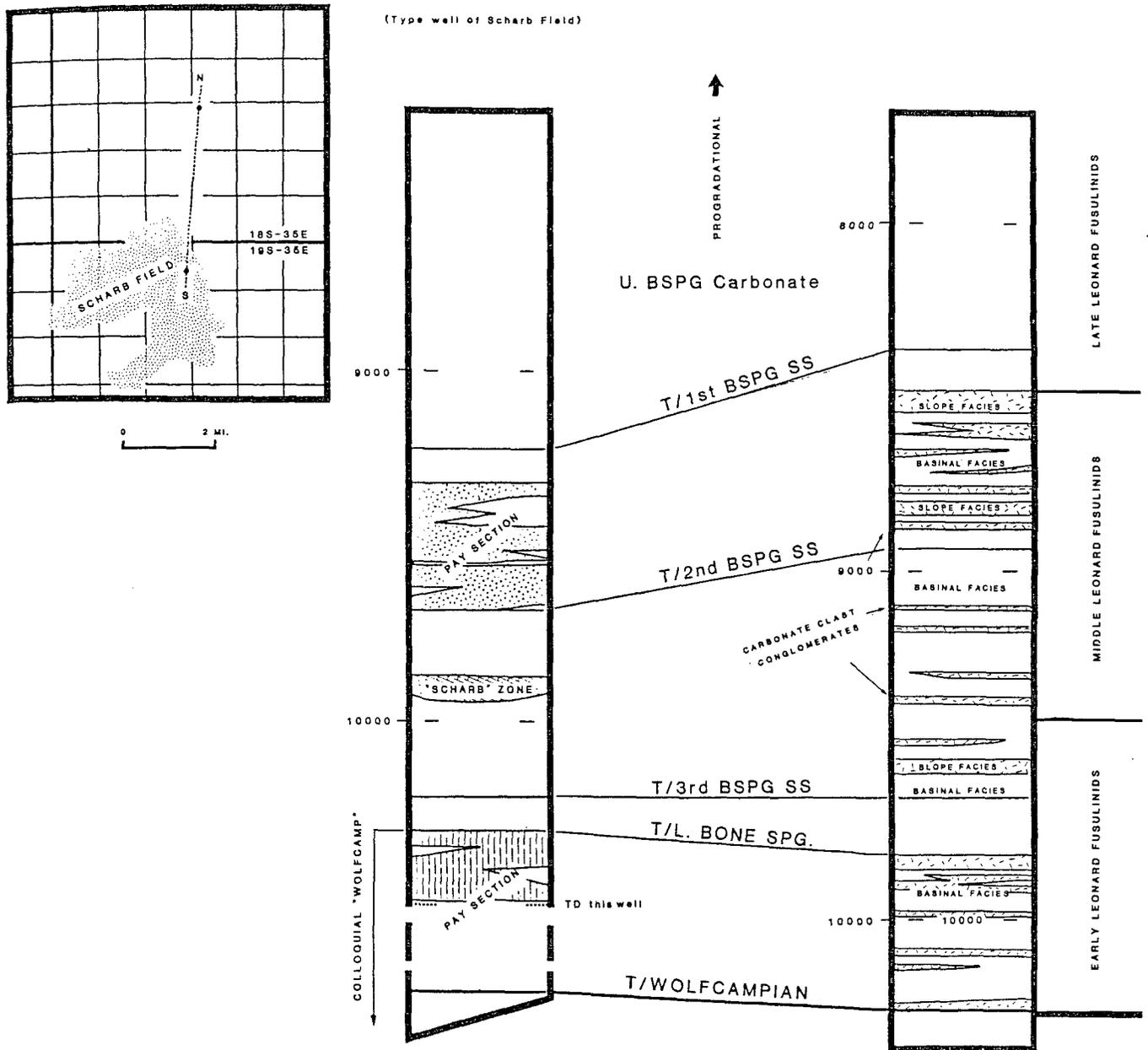


Figure 2. Leonardian fusulinid stratigraphy in the Scharb Field area, determined from the Sinclair #1-403 State. Footages are log depth in each well.

Scharb Field. The Leonardian trough may have served as a conduit for detritus which was periodically deposited at the site of the Scharb Field. This trough could have been a continually reactivated zone of weakness which was originally established during the Early Wolfcampian uplift of the adjacent Central Basin Platform. Detrital sediment was probably shed from the shelf from sites northeast of the Vacuum Field (fig. 1) and deposited at the site of the Scharb Field.

#### DEPOSITIONAL HISTORY OF THE SCHARB FIELD

At various times during deposition of the Bone Spring Formation, debris flow deposits from the Leonardian shelf were deposited in what has become known as the Scharb trend in Lea and eastern Eddy counties. Lithoclastic debris was transported into the basin and deposited in a discontinuous trend (Friedman et al., 1986). With the exception of the deposits of the Scharb

Field, the fields along the trend are located fairly close to the shelf edge. The results of our study indicate that the detritus of the Scharb Field may have been largely derived from the shelf as much as 12 miles to the north.

The debris flow facies of the various Bone Spring fields along the trend are all encased in basinal micritic carbonates, shales, and sandstones. The vertically sporadic occurrence of these carbonates may indicate periods when sea level dropped, with resultant erosion of the shelf edge and mass wasting on to the slope (Friedman et al., 1986). These processes are similar to those invoked for some Wolfcampian and Leonardian deposits of the Midland Basin (S. Mazzullo, A. Reid, and S. Reid, 1988). In the case of the Scharb Field, transport of detritus was along a gentler slope from greater distances away from the shelf edge along the persistent topographic trough (fig. 3). Changes in relative sea level may have been caused by tectonic events which periodically affected this area, most especially in the Scharb

area because of its proximity to the western margin of the Central Basin Platform (Font, 1985).

Figure 5 is a schematic block diagram (not to scale) showing the depositional settings proposed for the major Bone Spring carbonate fields along the Lea County trend. It shows that the debris flow units of Airstrip, Mescalero Escarpe, Young, and Midway (erroneously termed an Abo field) Fields are all situated close to their respective shelf edges. Wiggins and Harris (1985) postulated that there was approximately 1500-2000 feet of shelf-to-basin topographic relief during deposition of the uppermost debris flow units (immediately below the First Bone Spring sandstone) in the Airstrip Field. Our studies indicate similar settings for the carbonate debris flow units of the Mescalero Escarpe, Young, and Midway Fields (with slightly less relief around the Midway Field) (fig. 1), indicating that those carbonates were deposited as a series of detrital wedges at the base of the foreslope.

In contrast to these fields, the Scharb detrital units are displaced farther from the shelf edge. Figure 2 shows that intervals equivalent to the various pays in the Scharb Field in the Sinclair #1-403 State are all comprised of slope to basinal facies which contain numerous interbeds of carbonate conglomerate. This well is 3½ miles north of the Scharb Field and 9 miles south of the Leonardian shelf on the gently dipping Leonardian slope. It is situated on the west side of the basin trough defined on the Second Bone Spring structure map (fig. 3) within the depositional bypass zone of the Scharb sediments.

Figures 1 and 5 show that the Leonardian shelf-edge contains

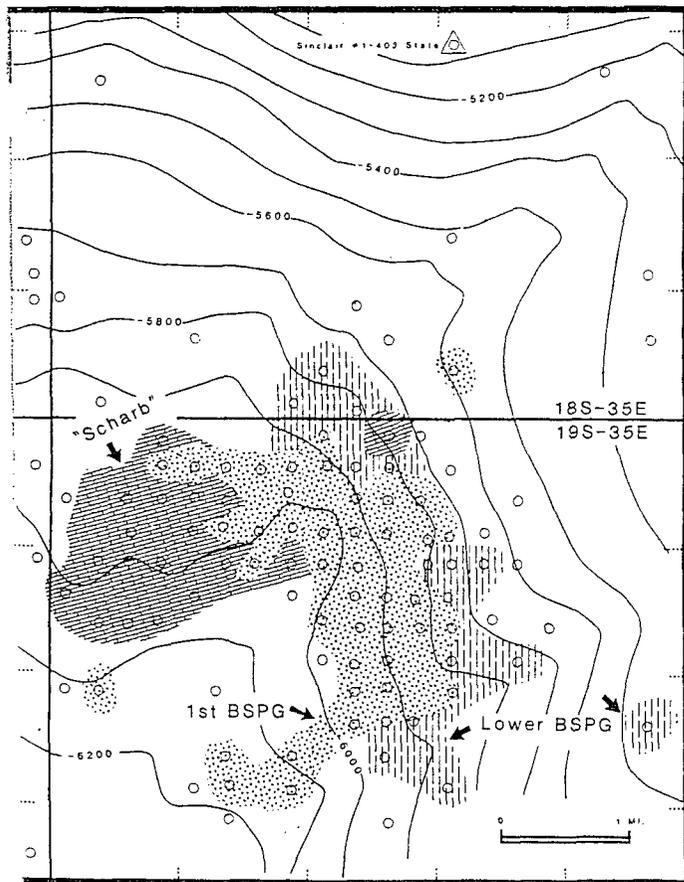


Figure 3. Structure map, top of the Second Bone Spring sandstone, Scharb Field. Contour interval 100 feet. Open circles denote structural control wells, triangle indicates fusulinid control well. Patterns of various producing zones same as in Figure 2.

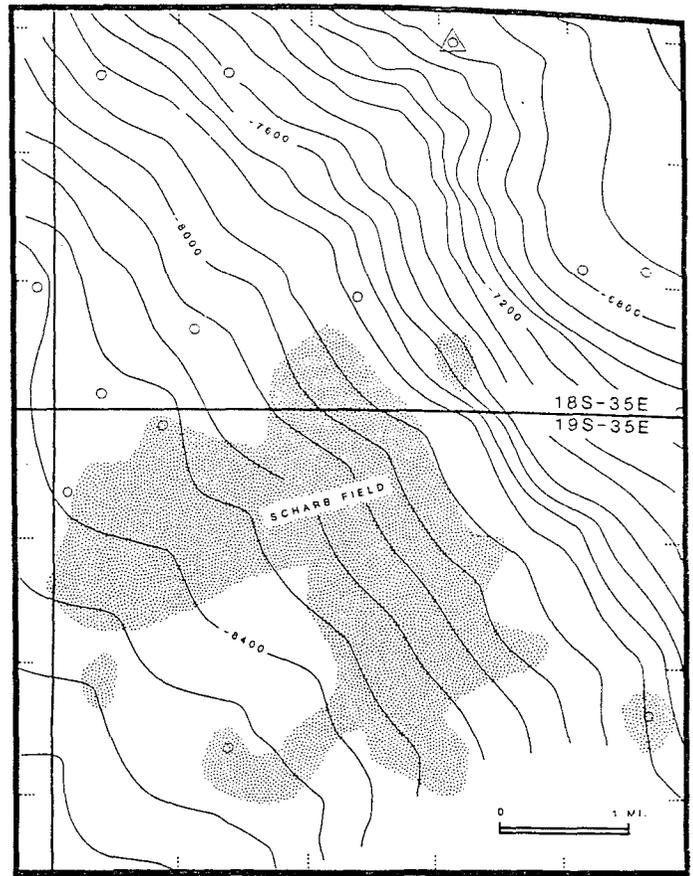


Figure 4. Structure map, top of "Atoka shale," Scharb Field, contour interval 100 feet. Open circles denote control wells.

a discontinuous trend of productive carbonate reservoirs colloquially referred to as "Abo" fields, and that the shelf-edge trend abruptly turns northward east of the Airstrip and Vacuum Fields. There is a wide gap of non-productive shelf carbonates between the Vacuum and Lovington Fields. The abrupt change in the trend of the Leonardian shelf corresponds to the appearance of the basinal trough described in Figure 3. The change in trend of the shelf and the location of the trough are possibly functions of tectonic instability along the western margin of the Central Basin Platform and near the San Simon Channel, and these features influenced the profile of the submarine slope north of the Scharb Field, creating a relatively wide depositional bypass zone at various times throughout Leonardian time. The lack of productive shelf-edge carbonate may be related to intense erosion of the shelf which contributed detritus to the Scharb site.

Deposition of major Bone Spring carbonate debris wedges becomes increasingly limited in the Leonardian section westward along the Bone Spring trend, specifically to the interval between the First and Second Bone Spring sandstones (fig. 5), which indicates that the depositional basin had undergone greater subsidence towards the east (this study and Friedman et al., 1986). The Scharb Field contains three major pulses of debris flow units, indicating that its source and general depositional area were relatively unstable throughout the Leonardian. Instability in the shelf source and depositional areas of the Scharb carbonates caused numerous periods of detrital influx further down the slope relative to the other fields along the trend.

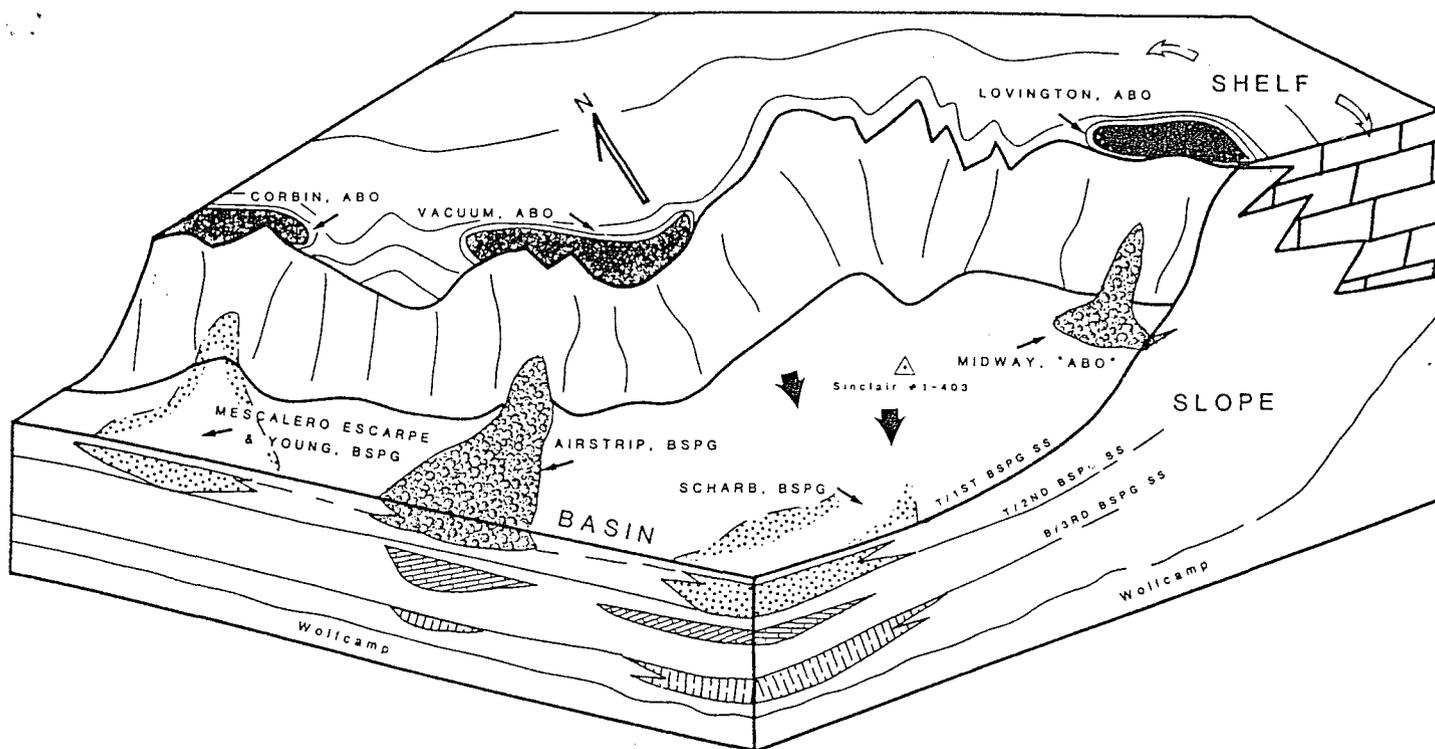


Figure 5. Schematic block diagram of Leonardian depositional environments along the Scharb trend, Lea County. Not to scale. Large black arrows denote sediment dispersal directions into Scharb area.

#### ACKNOWLEDGEMENTS

Most of the subsurface correlations and sample analyses were performed by the senior author as part of a larger study for Nearburg Producing Company. We wish to thank Charles E. Nearburg, President, for permission to publish some of the results of our work and B. G. Arrant for his assistance in compiling data. S. J. Mazzullo kindly reviewed the manuscript, and Sara Robbins prepared the oriented thin sections for the fusulinid work.

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**Jones, William V., EMNRD**

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**From:** Jones, William V., EMNRD  
**Sent:** Wednesday, September 12, 2007 6:23 PM  
**To:** 'lrsco@leaco.net'  
**Cc:** Ezeanyim, Richard, EMNRD  
**Subject:** RE: SWD Application: Sprinkle Federal #3 API No: 30-025-28521

Hello Larry: (RULE 40 PROBLEMS)

Just did a quick check of the inactive well status for Lynx Petro. Consultants Inc. OGRID 13645 and it has 3 out of 55 wells as inactive. Rule 40 only allows 2 inactive unless you operate more than 100 wells - and prohibits injection permits until then.

To remedy this - call or email Attorney: Gail MacQuesten (476-3451) to schedule when to return enough wells to active status and thereby get an "agreed compliance" order - I am told you can get this in a hurry if you really want to.

I have to wait until the web site comes up clean to release the SWD - so you must first get the ACO worked out with Gail and then get Hobbs district office to process the ACO for each well in the ACO.

If you think everything has been worked out - then let me know and I will check it often.

Sorry about the hitch - but thanks again for your professional reply.

William V. Jones PE  
New Mexico Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505  
505-476-3448

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**From:** Jones, William V., EMNRD  
**Sent:** Wednesday, September 12, 2007 4:56 PM  
**To:** 'lrsco@leaco.net'  
**Cc:** Ezeanyim, Richard, EMNRD  
**Subject:** RE: SWD Application: Sprinkle Federal #3 API No: 30-025-28521

Hello Mr. Larry Scott

Thank You for the prompt and thorough reply to my data requests.

Releasing your permit to Mark Fesmire as SWD-426-A

Take Care,

William V. Jones PE  
New Mexico Oil Conservation Division  
1220 South St. Francis  
Santa Fe, NM 87505  
505-476-3448

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**From:** Jones, William V., EMNRD  
**Sent:** Wednesday, August 29, 2007 4:49 PM

9/12/2007

# Inactive Well List

**Total Well Count: 55 Inactive Well Count: 3 Since: 6/19/2006**  
**Printed On: Wednesday, September 12 2007**

District	API	Well	ULSTR	OCD Unit	OGRID	Operator	Lease Type	Well Type	Last Production	Formation/Notes	Status	TA Exp Date
1	30-025-04196	REED SANDERSON UNIT #016	A-9 -20S-36E	A	13645	LYNX PETROLEUM CONSULTANTS INC	F	I	12/1992			
1	30-025-28221	SPRINKLE FEDERAL #001	H-9 -19S-35E	H	13645	LYNX PETROLEUM CONSULTANTS INC	F	O	05/2006			
2	30-015-10397	SWEENEY FEDERAL COM #001	M-13-19S-31E	M	13645	LYNX PETROLEUM CONSULTANTS INC	F	O	03/1982		T	3/8/2007

WHERE Ogrid:13645, County:All, District:All, Township:All, Range:All, Section:All, Production(months):15, Excludes Wells Under ACOI, Excludes Wells in Approved TA Period

*9/11/07 check STILL not good*  
*9/12/07 check*  
*10/1/07 check still BAD*

## Inactive Well List

**Total Well Count: 55 Inactive Well Count: 2 Since: 7/11/2006**

**Printed On: Thursday, October 04 2007**

District	API	Well	ULSTR	OCD Unit	OGRID	Operator	Lease Type	Well Type	Last Production	Formation/Notes	Status	TA Exp Date
1	30-025-28221	SPRINKLE FEDERAL #001	H-9 -19S-35E	H	13645	LYNX PETROLEUM CONSULTANTS INC	F	O	05/2006			
2	30-015-10397	SWEENEY FEDERAL COM #001	M-13-19S-31E	M	13645	LYNX PETROLEUM CONSULTANTS INC	F	O	03/1982		T	3/8/2007

WHERE Ogrid:13645, County:All, District:All, Township:All, Range:All, Section:All, Production(months):15, Excludes Wells Under ACOI, Excludes Wells in Approved TA Period

**Injection Permit Checklist 2/8/07**

**SWD Order Number** 426-A Dates: Division Approved \_\_\_\_\_ District Approved \_\_\_\_\_

Well Name/Num: SPRINKLE Fld #3 Date Spudded: 7/18/84

API Num: (30-) 025-28521 County: Lea

Footages 1650 FNL / 46 FEL Sec 9 Tsp 19S Rge 35E

Operator Name: LYNX Petroleum Consultants INC Contact Larry Scott

Operator Address: P.O. Box 1708 Hobbs NM 88241

Current Status of Well: BS. Producer Planned Work: Commercial SWD Inj. Tubing Size: 2 7/8

	Hole/Pipe Sizes	Depths	Cement	Top/Method
Surface	17 1/2 13 3/8	350'	400	CIRC
Intermediate	11 8 5/8	3526'	1500	CIRC
Production	7 7/8 5 1/2	19,800'	600	7600 calc.
Last DV Tool				
Open Hole/Liner				
Plug Back Depth				

Diagrams Included (Y/N): Before Conversion  After Conversion

Checks (Y/N): Well File Reviewed \_\_\_\_\_ ELogs in Imaging \_\_\_\_\_

*(Bone Springs) attempt*  
HSL-228-A  
7/19/06

Intervals:	Depths	Formation	Producing (Yes/No)
Salt/Potash			
Capitan Reef			
Cliff House, Etc:			
Formation Above			
Top Inj Interval	9544	Bone Springs	1909 PSI Max. WHIP
Bottom Inj Interval	19,800	Wolfcamp	Open Hole (Y/N)
Formation Below			Deviated Hole (Y/N)

*Was a WC injector SWD-426 (10567-10680) 6/12/91*  
HISTORY?

*1394  
19088*

**Fresh Water:** Depths: 0-300' Wells (Y/N)  Analysis Included (Y/N):  Affirmative Statement

**Salt Water Analysis:** Injection Zone (Y/N/NA) \_\_\_\_\_ Disp Waters (Y/N/NA) \_\_\_\_\_ Types: \_\_\_\_\_

**Notice:** Newspaper (Y/N)  Surface Owner (BLM) Mineral Owner(s) \_\_\_\_\_

Other Affected Parties: Yata, Chrysalis, Nabal Energy, Mountain Energy, Fossil, XION HOLD

**AOR/Repairs:** Num Active Wells 5 Repairs? \_\_\_\_\_ Producing in Injection Interval in AOR \_\_\_\_\_

AOR Num of P&A Wells 7 Repairs? \_\_\_\_\_ Diagrams Included? \_\_\_\_\_ RBDMS Updated (Y/N) \_\_\_\_\_

Well Table Adequate (Y/N) \_\_\_\_\_ AOR STRs: Sec \_\_\_\_\_ Tsp \_\_\_\_\_ Rge \_\_\_\_\_ UIC Form Completed (Y/N) \_\_\_\_\_

New AOR Table Filename \_\_\_\_\_ Sec \_\_\_\_\_ Tsp \_\_\_\_\_ Rge \_\_\_\_\_ This Form completed \_\_\_\_\_

**Conditions of Approval:** Sec \_\_\_\_\_ Tsp \_\_\_\_\_ Rge \_\_\_\_\_ Data Request Sent \_\_\_\_\_

AOR Required Work: \_\_\_\_\_

Required Work to this Well: \_\_\_\_\_