

WFX

7/22/96

689

F & M OIL AND GAS COMPANY

P. O. BOX 891
MIDLAND, TEXAS 79702-0891
(915) 682-7714
FAX 682-7700

July 1, 1996

State of New Mexico
Oil Conservation Division
2040 Pacheo Street
Santa Fe, New Mexico 87505

Attn: David Catanach

**Re: Form, C-108
Wallen-Tonto #7
Sec 30, T19S, R33E
Lea County, NM**

Dear Mr. Catanach:

F&M Oil and Gas Company, as Operator of the Wallen-Tonto Lease, hereby submits the above referenced form with all attachments, please see exhibits A thru K, for the noted Waterflood Project. This would be a re-activation of the previously approved the Waterflood Project by **Case No. 9736, Order No. R-9082, (see enclosed)** in the name of Wallen Production Company.

We further ask that this application receive administrative approval.

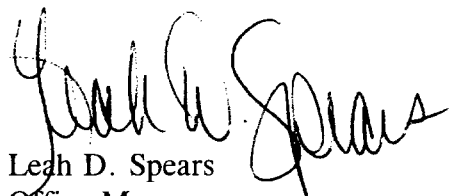
Notices have been mailed to the surface owners and off-set operators. The copies of the receipts for the certified mailing of these notices are enclosed.

We have also enclosed a proof of publication of the notice required.

We hope that the enclosed provides/meets all of the requirements necessary for F&M to proceed with this project. If you need further information, please do not hesitate to contact me at the above.

Thank you for your help and consideration with this matter.

Sincerely,



Leigh D. Spears
Office Manager

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: F&M Oil Company Well: WALLEN-TONTO No. 7

Contact: LEAH SPEARS Title: OH. MGR. Phone: (915) 682-7714

DATE IN 7.5.96 RELEASE DATE 7.22.96 DATE OUT 8.6.96

Proposed Injection Application is for: ☒ **WATERFLOOD** ☒ Expansion ☐ Initial

Original Order: R- 9082 ☒ Secondary Recovery ☐ Pressure Maintenance

SENSITIVE AREAS

☐ **SALT WATER DISPOSAL** ☐ Commercial Well

☐ WIPP ☐ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

16 Total # of AOR

0 # of Plugged Wells

YES Tabulation Complete

☒ Schematics of P & A's

YES Cement Tops Adequate

☒ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) 4165 / SEVEN RIVERS ^{2900-3113'} Compatible Analysis YES

Source of Water or Injectate 4165 / SEVEN RIVERS

PROOF of NOTICE

YES Copy of Legal Notice

YES Information Printed Correctly

YES Correct Operators

YES Copies of Certified Mail Receipts

NO Objection Received

N/A Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

| | | | | |
|--------------|-------------------------------------|---------------------------------|------------|----------------------------|
| 1st Contact: | <input type="checkbox"/> Telephoned | <input type="checkbox"/> Letter | _____ Date | Nature of Discussion _____ |
| 2nd Contact: | <input type="checkbox"/> Telephoned | <input type="checkbox"/> Letter | _____ Date | Nature of Discussion _____ |
| 3rd Contact: | <input type="checkbox"/> Telephoned | <input type="checkbox"/> Letter | _____ Date | Nature of Discussion _____ |

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. OPERATOR: F&M Oil and Gas Company
ADDRESS: P. O. Box 891, Midland, Texas 79702
CONTACT PARTY: Randall Foster PHONE: (915) 682-7714
- III. WELL DATA: Complete the data required on the reverse side of this form for each well processed 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 reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological 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 source 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: Randall Foster TITLE: Vice-President
SIGNATURE: *Randall Foster* DATE: June 24, 1996
- * 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 circumstance of the earlier submittal. _____

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 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, PO Box 2088, Santa Fe, NM 87504-2088 within 15 days.

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

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.

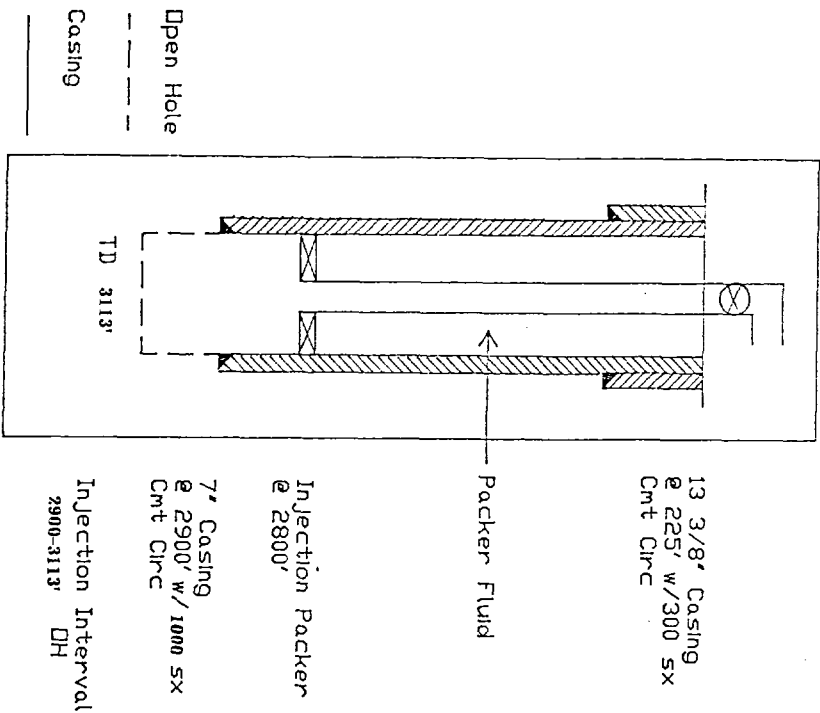
INJECTION WELL DATA SHEET

OPERATOR F&M Oil and Gas Company LEASE Wallen-Tonto

WELL NO. 7 990' FEL & 1650' FSL SECTION 30 TOWNSHIP 19 South RANGE 33 East

FOOTAGE LOCATION

Schematic



Well Construction Data

Surface Casing

Size 13 3/8 * Cemented with 300 sx.

TOC circ. feet determined by circ.

Hole Size 15"

Intermediate Casing

Size * Cemented with sx.

TOC feet determined by

Hole Size

Long String

Size 7 * Cemented with 1000 sx.

TOC circ feet determined by circ

Hole Size 8"

Total Depth 3113'

Injection Interval

2900 feet to 3113 feet

(perforated or open-hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size 2 3/8" lined with Seal-Tite PVC set in a
 (type of internal coating)
Baker Loc-Set Nickel Plated packer at 2800 feet

Other type of tubing / casing seal if applicable _____

Other Data

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

If no, for what purpose was the well originally drilled? As a producer
well was D&A.

2. Name of the Injection formation Yates-Seven Rivers

3. Name of Field or Pool (if applicable) Tonto Yates-Seven Rivers, South

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. No perfs. P&A w/ 210 sx
on 7-15-78

5. Give the names and depths of any over or underlying oil of gas zones (pools) in this area.

Geronimo Fld. Delaware @ 7700', Gem Fld. Delaware @ 7700' & Bone Spring @ 8800'

Gem Fld. Morrow @ 13,200' (no overlying)

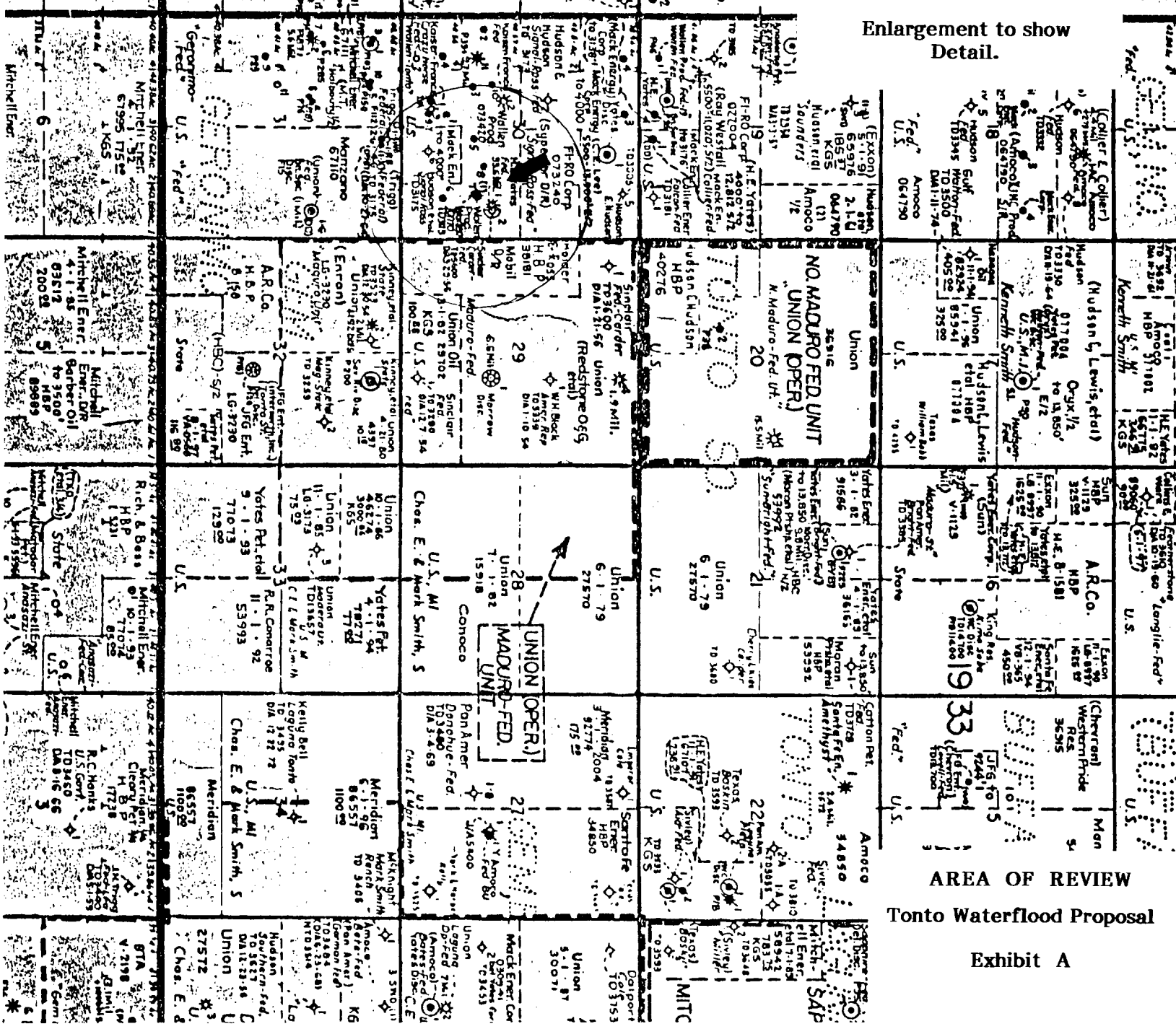
F&M OIL AND GAS COMPANY

**Proposed Wallen Tonto Waterflood
Wallen Tonto #7 WIW
Sec 30, T19S, R33E
Lea County, New Mexico**

**List of Exhibits
Form C-108**

| | |
|------------------|---|
| Exhibit A | Map required by Paragraph V |
| Exhibit B | Tabular Summary required by Paragraph VI |
| Exhibit C | Data Sheet required by Paragraph VII |
| Exhibit D | Geological Data - Paragraph VIII |
| Exhibit E | Log of Injection Well |
| Exhibit F | Data Sheet on Proposed Injection Well |
| Exhibit G | Schematic of Proposed Injection Well |
| Exhibit H | Schematic of P&A Wells within Area of Review (1/2 mile) |
| Exhibit I | Water Analysis Produced Water to be re-injected |
| Exhibit J | Statement per Paragraph XII |
| Exhibit K | Notice Requirements |

**Enlargement to show
Detail.**



AREA OF REVIEW
Tonto Waterflood Proposal

Exhibit A

| Operator Well Name, Number | Location Unit, Sec., Twp., Range | Type | Date Spudded | Completed | Depth TD | PBD | Record of Completion Zone(s) | Perfs and Well Construction | TOC |
|---|--|------|-----------------|-----------|-------------|-------|---------------------------------------|---|-------------------------------------|
| Harvey E. Yates Federal 30 Well No. 1 API 30-025-27069 | I, Sec 30, T19S, R33E 1980' FSL & 760' FEL | Gas | 6/19/81 | 9/21/81 | 13712 | 13670 | Morrow | Perfs:13744-561 Casing:13 3/8 @ 1276'/775 sx 9 5/8 @ 5310'/3440 sx 5 1/2 @ 13712'/2150sx | surf-calc surf-calc 2038-calc |
| Kaiser-Francis Federal 30 Well No. 2 API 30-025-27671 | K, Sec 30, T19S, R33E 2310' FSL & 1980' FWL | Gas | 12/18/81 | 3/4/83 | 13800 | 13753 | Morrow | Perfs:13372-440 Casing:13 3/8 @ 1315'/1050sx 9 5/8 @ 5315'/3181 sx 5 1/2 @ 13800'/2360sx | surf-calc surf-calc 1263-calc |
| Edward Hudson Signal Ross-Fed Well No. 6 API 30-025-20560 | O, Sec 30, T19S, R33E 660' FSL & 1980' FEL | D&A | 2/10/64 | - | 3127 | - | Yates Svn Rvrs | Perf:Not reported Casing:13 3/8 @ 65'/100 sx 5 1/2 @ 3115'/30 sx | surf-calc 2810-sub |
| Sinclair O&G Co. Carder-Federal Well No. 2 API 30-025-01699 | I, Sec 30, T19S, R33E 1980' FSL & 660' FEL | P&A | 2/14/56 | - | 5600 | - | Delaware | Perfs:Open Hole Casing:10 3/4 @ 305'/250 sx | surf-calc |
| John H. Trigg Federal RB 31 Well No. 1 PA Schematic on File | B, Sec 31, T19S, R33E 330' FNL & 2310' FEL | J&A | 9/18/64 | - | 700 | - | Perfs: NA Casing:13 3/8 @ 85'/50sx | surf-calc | |
| Manzano Oil Corp. Federal 31-G Well No. 4 API 30-025-21116 | B, Sec 31, T19S, R33E 335' FNL & 2223' FEL | Oil | 10/3/64 | - | 3225 | 3139 | Yates Svn Rvrs | Perfs:2884-3104 Casing:8 5/8 @ 500'/300 sx 4 1/2 @ 3225'/1000sx | circ circ |
| F&M Oil and Gas Co. Wallen-Tonto Well No. 7 API 30-025-25897 | I, Sec 30, T19S, R33E 1650' FSL & 990' FEL | D&A | 5/17/78 | - | 3113 | - | Svn Rvrs | Perfs: NA Casing:13 3/8 @ 225'/330 sx 7 @ 2900'/1000sx | circ circ |
| F&M Oil and Gas Co. Wallen-Tonto Well No. 8 API 30-025-27435 | J, Sec 30, T19S, R33E 1790' FSL & 1710' FEL | Oil | 10/16/81 | 2/20/82 | 3120 | 3115 | Yates Svn Rvrs | Perfs:2980-3110 Casing:13 3/8 @ 115'/500 sx 7 @ 2940'/1000sx 4 1/2 @ 2612-3120'/60sx | circ circ 2625-temp |
| F&M Oil and Gas Co. Wallen-Tonto Well No. 5 API 30-025-25584 | J, Sec 30, T19S, R33E 1650' FSL & 2310' FEL | Oil | 6/30/77 | 8/25/77 | 3094 | 3094 | Svn Rvrs | Perfs:Open Hole Casing:13 3/8 @ 277'/300 sx 7 @ 2884'/1000sx | circ circ |

| Operator | Location | Type | Date | Depth | Record of Completion | TOC |
|---|-------------------------|------|-------------|-------|----------------------|------------------------------|
| Well Name, Number | Unit, Sec., Twp., Range | | Spudded | TD | Zone(s) | Perts and Well Construction |
| F&M Oil and Gas Co. | K. Sec 30, T19S, R33E | Oil | 8/31/77 | 3073 | Syn Rvrs | Perts:Open Hole 2850-3073 |
| Wallen-Tonto | 1650' FSL & 1650' FWL | | 10/21/77 | 3073 | | Casing: 13 3/8 @ 220'/300 sx |
| Well No. 3 | | | | | | 7 @ 2850'/1000 sx |
| API 30-025-25589 | | | | | | circ |
| F&M Oil and Gas Co. | P. Sec 30, T19S, R33E | Oil | 2/8/78 | 3096 | Yates | Perts:2986-3080 |
| Wallen Tonto | 990' FSL & 990' FEL | | 4/28/78 | 3085 | Syn-Rvrs | Casing: 13 3/8 @ 210'/300 sx |
| Well No. 6 | | | | | | 7 @ 2901'/1420 sx |
| API 30-025-25591 | | | | | | 4 1/2 @ 2600-3096'/60sx |
| F&M Oil and Gas Co. | N. Sec 30, T19S, R33E | Oil | 10/15/76 | 3082 | Yates | Perts:Open Hole 2996-3082 |
| Wallen-Tonto | 990' FSL & 2310' FWL | | 12/5/76 | 3082 | Syn-Rvrs | Casing: 13 3/8 @ 225'/100 sx |
| Well No. 1 | | | | | | 7 @ 2896'/1000 sx |
| API 30-025-25371 | | | | | | circ |
| F&M Oil and Gas Co. | N. Sec 30, T19S, R33E | J&A | 9/20/80 | 570 | ---- | Perts: NA |
| Wallen-Tonto | 600' FSL & 2300' FWL | | - | | | Casing: 13 3/8 300 sx |
| Well No. 9 | | | P&A 10/8/80 | | | |
| API 30-025-26343 | | | | | | |
| F&M Oil and Gas Co. | N. Sec 30, T19S, R33E | Oil | 10/12/80 | 3086 | Yates | Perts:2970-3080 |
| Wallen-Tonto | 660' FSL & 2300' FWL | | 3/18/81 | 3086 | Syn-Rvrs | OH 3084-86 |
| Well No. 9Y | | | | | | Casing:10 3/8 @ 225/450 sx |
| API 30-025-27190 | | | | | | 7 @ 2800'/1100sx |
| | | | | | | 4 1/2 @ 2617-3083'/60sx |
| | | | | | | circ |
| | | | | | | circ |
| | | | | | | 2617-circ |
| Manzano Oil Corp. | B. Sec 31, T19S, R33E | Oil | 11/30/91 | 9400 | BS-Del | Perts:5130-5237 |
| Federal 31-G | 400' FNL & 2310' FEL | | 2/15/92 | 5530 | | Casing: 13 3/8 @ 365'/370sx |
| Well No. 2 | | | | | | 8 5/8 @ 4200'/1620sx |
| API 30-025-31354 | | | | | | 5 1/2 @ 5915/400sx |
| | | | | | | circ |
| Kaiser-Francis Oil Co. | N. Sec 30, T19S, R33E | Oil | 6/7/92 | 9450 | BS-Del | Perts: 7536-7682,8978-9124 |
| Crazy Horse 30 Federal 660' FSL & 1980' FWL | | | 12/4/92 | 8915 | | Casing: 13 3/8 @ 450'/430 sx |
| Well No. 1 | | | T/A | | | 8 5/8 @ 3400/2155sx |
| API 30-025-31591 | | | | | | 5 1/2 @ 9450/725 sx |
| | | | | | | D. V. @ 6945'/860sx |
| | | | | | | circ |

F&M OIL AND GAS COMPANY

**Proposed Wallen Tonto Waterflood
Wallen Tonto #7 WIW
Sec 30, T19S, R33E
Lea County, New Mexico**

Exhibit C

Data on Proposed Operation

1. Proposed average and maximum daily rate and volume of fluids to be injected:

Average daily rate of 250 BWIPD
Maximum daily rate of 500 BWIPD

2. System is closed.

3. Proposed Average Injection Pressure: 580 psig.
Proposed Maximum Injection Pressure: 580 psig.

The proposed average and maximum injection pressures are to be determined from step rate tests to be run after the well is re-entered.

4. (A) Source of injection fluid:
Produced water from Tonto Yates Seven Rivers, South Pool.
(B) Analysis of formation fluid:
Not applicable - re-injected produced water.
5. Zone of disposal is productive of oil and gas within one mile of proposed disposal well.

F&M OIL AND GAS COMPANY

**Proposed Wallen Tonto Waterflood
Wallen Tonto #7 WIW
Sec 30, T19S, R33E
Lea County, New Mexico**

Exhibit D

Geological Data on Injection Zone

Pool: Tonto Yates Seven Rivers, South

Formation: Yates Seven Rivers

Geological Name: Yates

Thickness: @ 200 feet

Depth: @ 2900 feet

Injection Interval: 2900 to 3113 feet



Nuclear Log

FILE NO.

COMPANY **WALLEN PRODUCTION COMPANY**

WELL **TONTO NO. 7**

FIELD **TONTO**

COUNTY **LEA**

STATE **N. MEXICO**

LOCATION: **890' FEL & 1650' PSL**

OTHER LOGS:

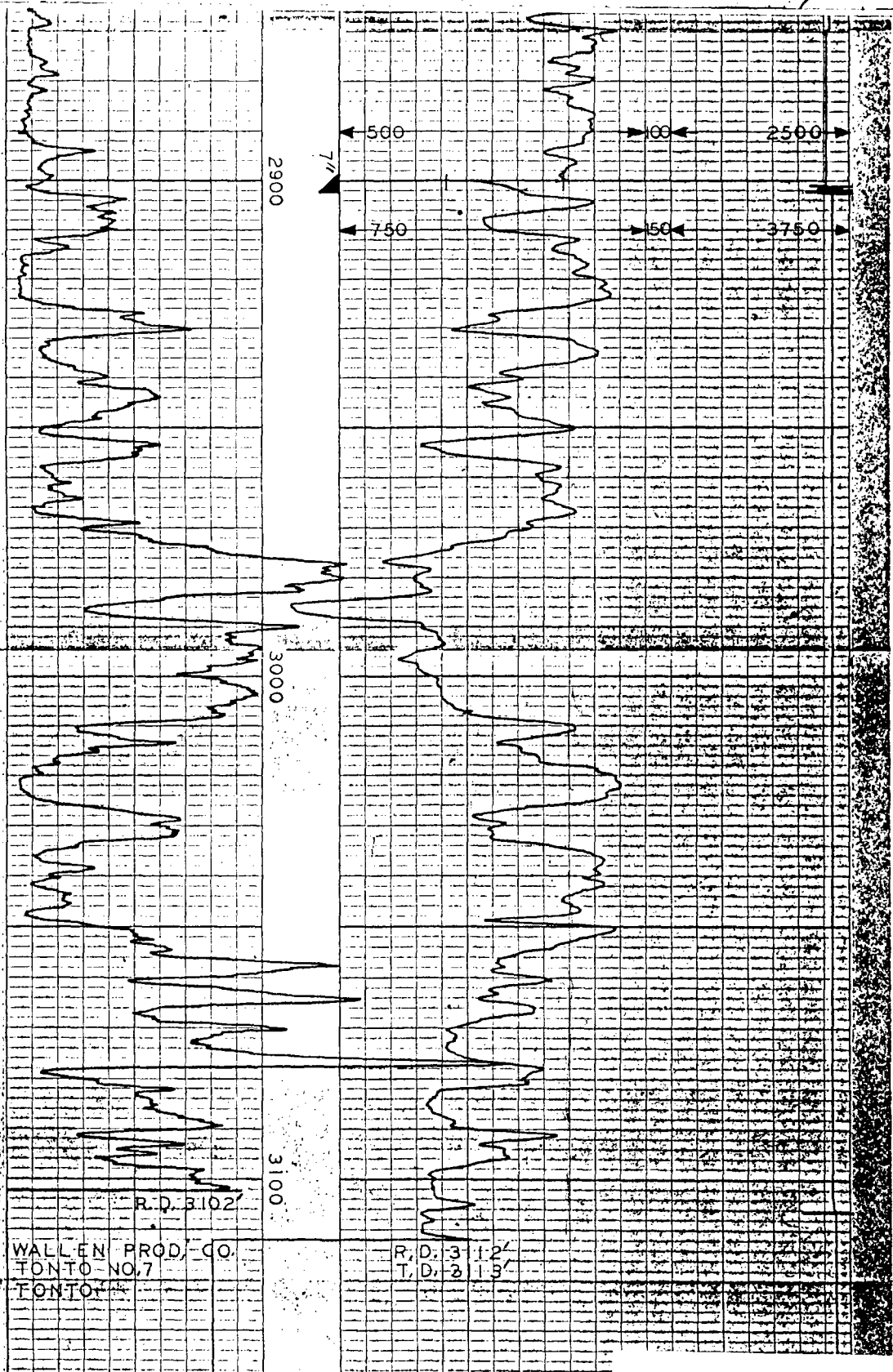
B/LK

SEC. **30** TWP. **19-S** RGE. **33-E**
PERMANENT DATUM GROUND LEVEL ELEV. **3589** KB. **3591**
LOG MEASURED FROM **2' ABOVE GROUND LEVEL** DF. **3599**
DRILLING MEASURED FROM **2' D. S.** GL. **3599**

DATE **7-14-78** **7-14-78**
RUN NO. **1-N.W.** **1-N.W.**
TYPE LOG **GAMMA RAY** **NEUTRON**
DEPTH-DRILLER **3123** **3123**
DEPTH-LOGGER **3113** **3113**
BOTTOM LOGGED INTERVAL **3102** **3112**
TOP LOGGED INTERVAL **2450** **2450**
TYPE FLUID IN HOLE **WATER**
SALINITY PPM CL. **---**
DENSITY LB./GAL. **---**
LEVEL **ABOVE LOG**
MAX. REC. TEMP. DEG. F. **---**
OPR. RIG TIME **1 HR.**
RECORDED BY **MURRAY**
WITNESSED BY **MR. KRUEH**

| BORE HOLE RECORD | | | CASING RECORD | | |
|------------------|------------|----------------|---------------|--------------|----------------|
| RUN NO. | BIT NO. | FROM | TO | SIZE | WGT. FROM TO |
| 13 | 3/8 | SURFACE | 225 | | |
| 8 | | 834 | 2850 | 7 | SURFACE |
| 6 1/4 | | 2900 | 3123 | 0. H. | 2900 |

THIS HEADING CONFORMS TO API STANDARD PRACTICE RP-33



WALLEN PROD. CO.
TONTO NO. 7
TONTO

R.D. 3123
T.D. 313

F&M OIL AND GAS COMPANY

**Proposed Wallen Tonto Waterflood
Wallen Tonto #7 WIW
Sec 30, T19S, R33E
Lea County, New Mexico**

Exhibit F

Well Data on Injection Well

| | |
|-----------------------------|---|
| Stimulation Program: | 2000 gallons 15% NEFE Acid |
| Location: | 990' FEL & 1650' FSL Sec 30, T19S, R 33E Lea County, New Mexico |
| Casing: | 13 3/8" @ 225' cmtd w/ 300 sx 7" @ 2900' cmtd w/200 sx |
| Tubing: | 2 3/8" @ 2800' - Plastic Coated |
| Packer: | Baker Loc-Set Nickel Plated |
| Injection Formation: | Yates in the Tonto Yates Seven Rivers, South Pool. |
| Injection Interval: | 2900' to 3113' Open Hole |

Well was originally drilled as oil producer. Currently P&A.

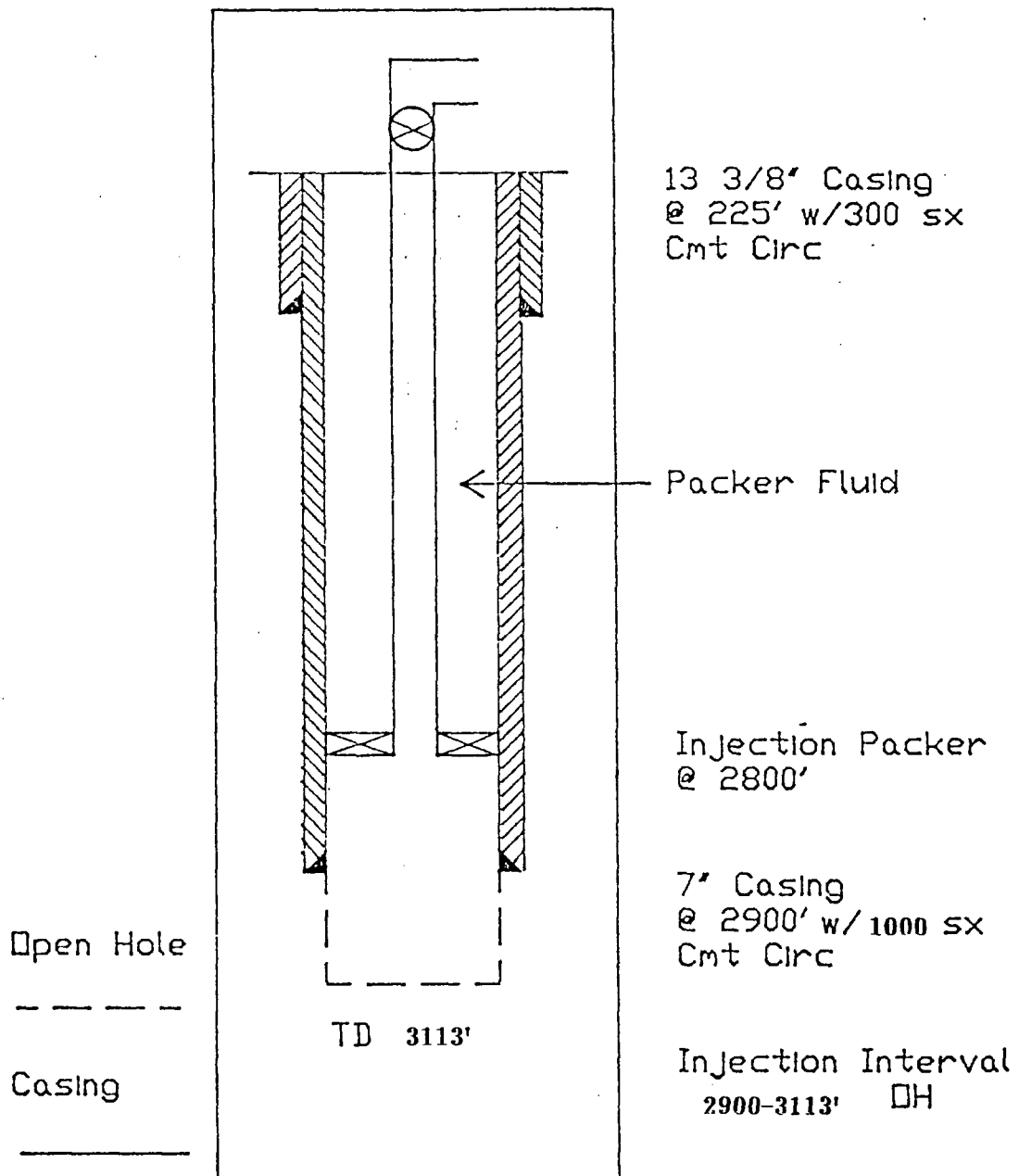
F&M OIL AND GAS COMPANY

Wallen Tonto #7 WIW

990' FEL & 1650' FSL

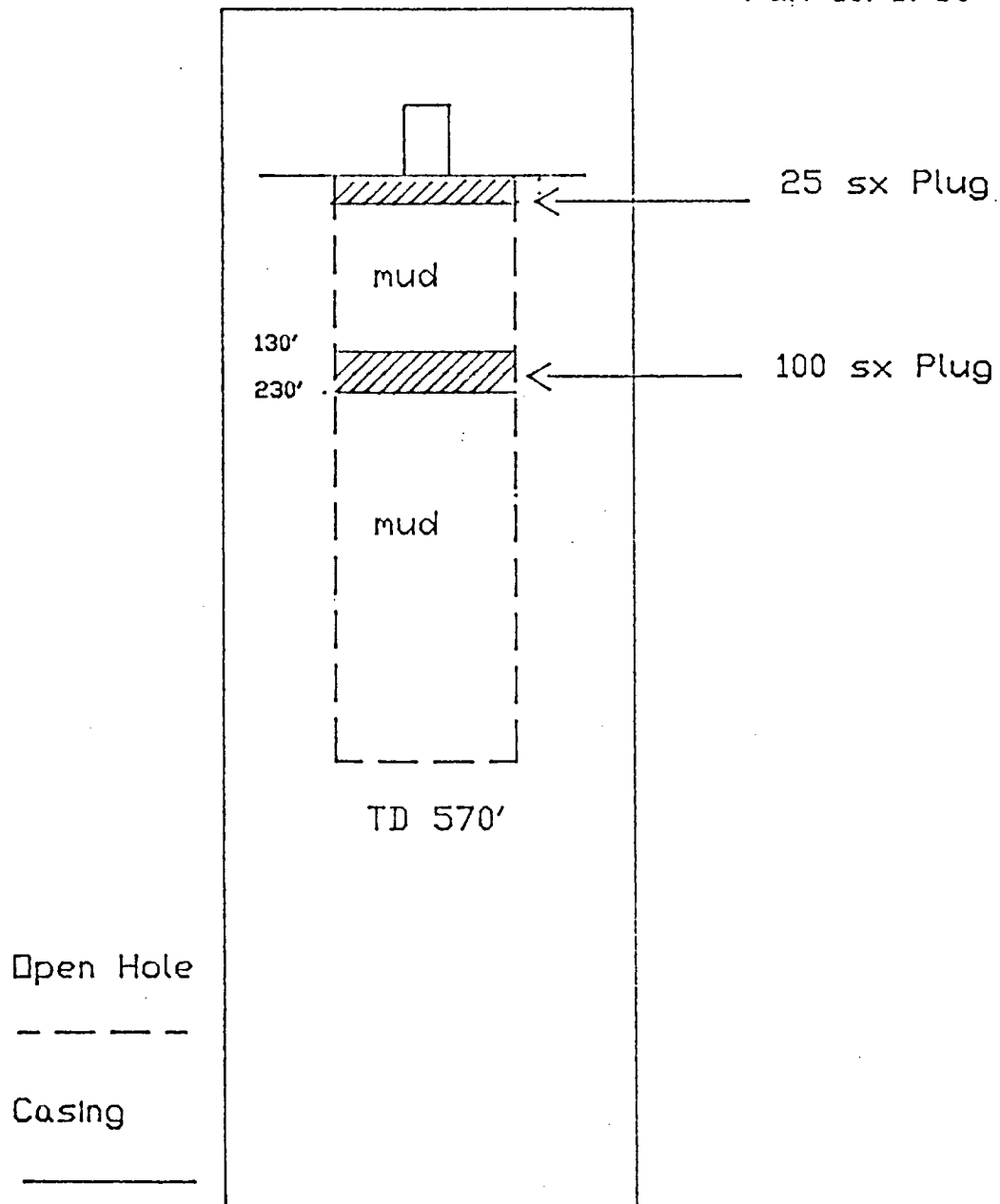
Sec 30, T19S, R33E

Lea County, New Mexico



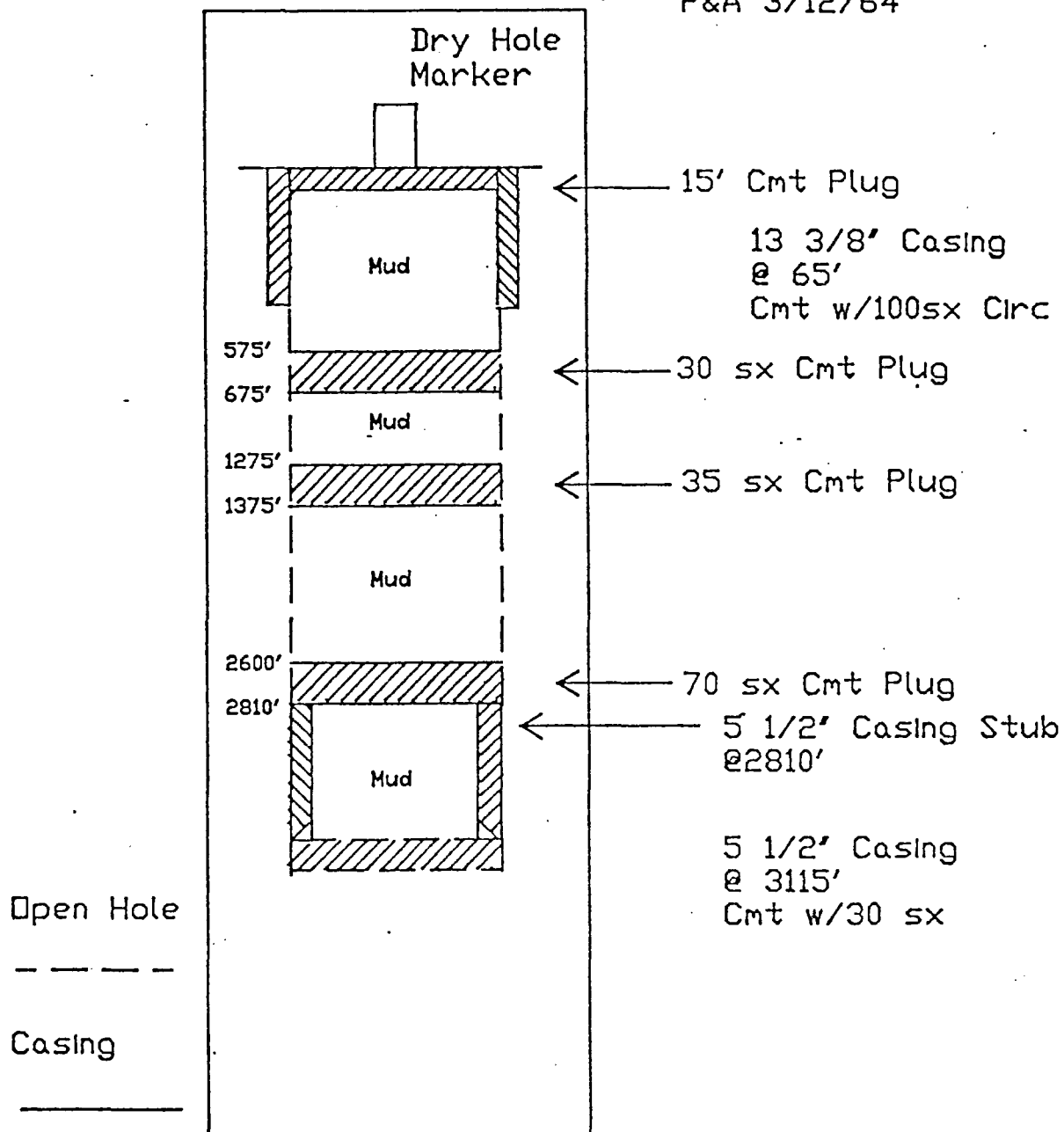
F&M OIL AND GAS COMPANY
Wallen Tonto #9
2300' FWL & 600' FSL
Sec 30, T19S, R33E
Lea County, New Mexico

P&A 10/8/80



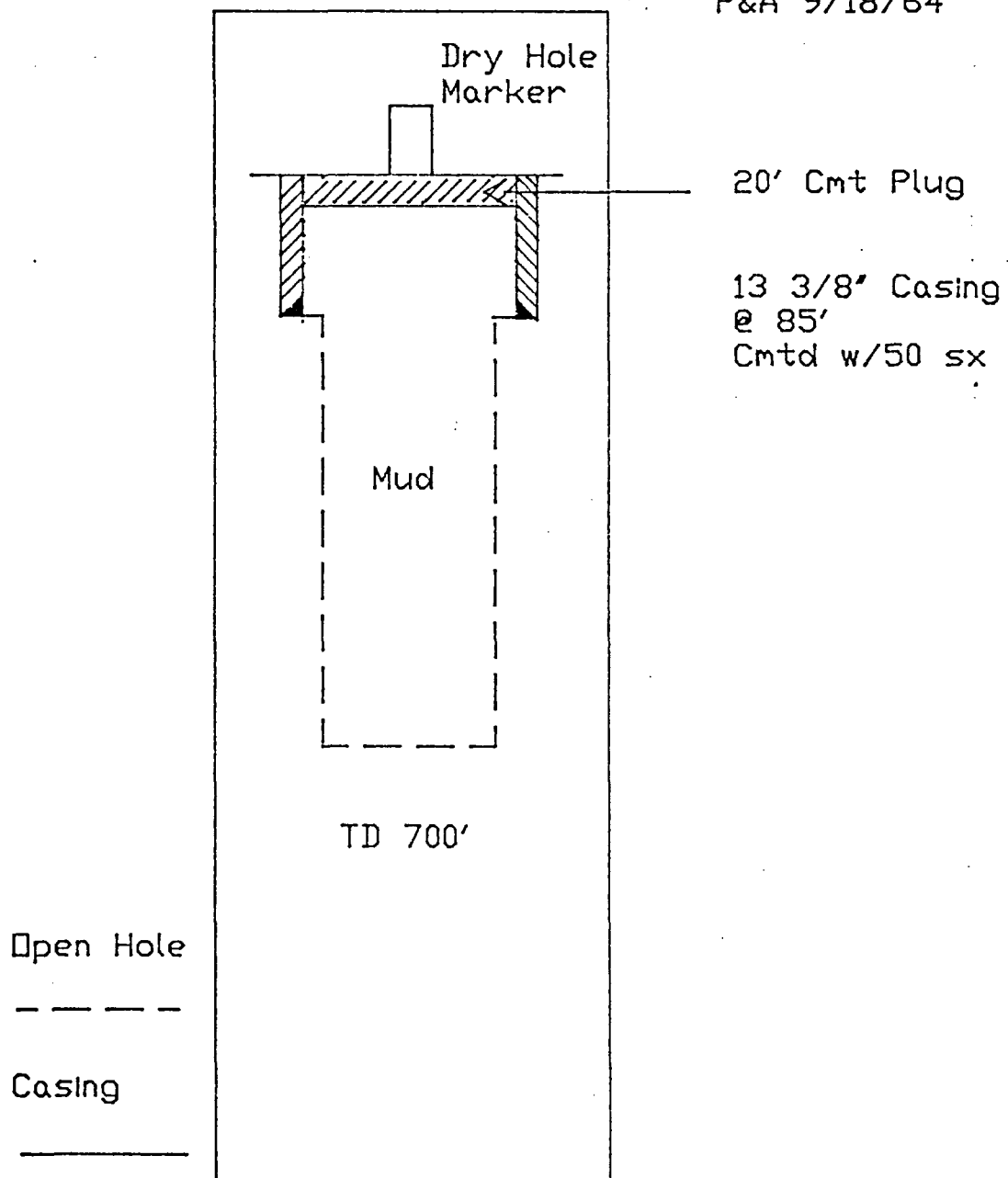
Edward Hudson
Signal Ross_Fed. Well No. 6
660' FSL & 1980' FEL
Sec. 30, T19S, R33E

P&A 3/12/64



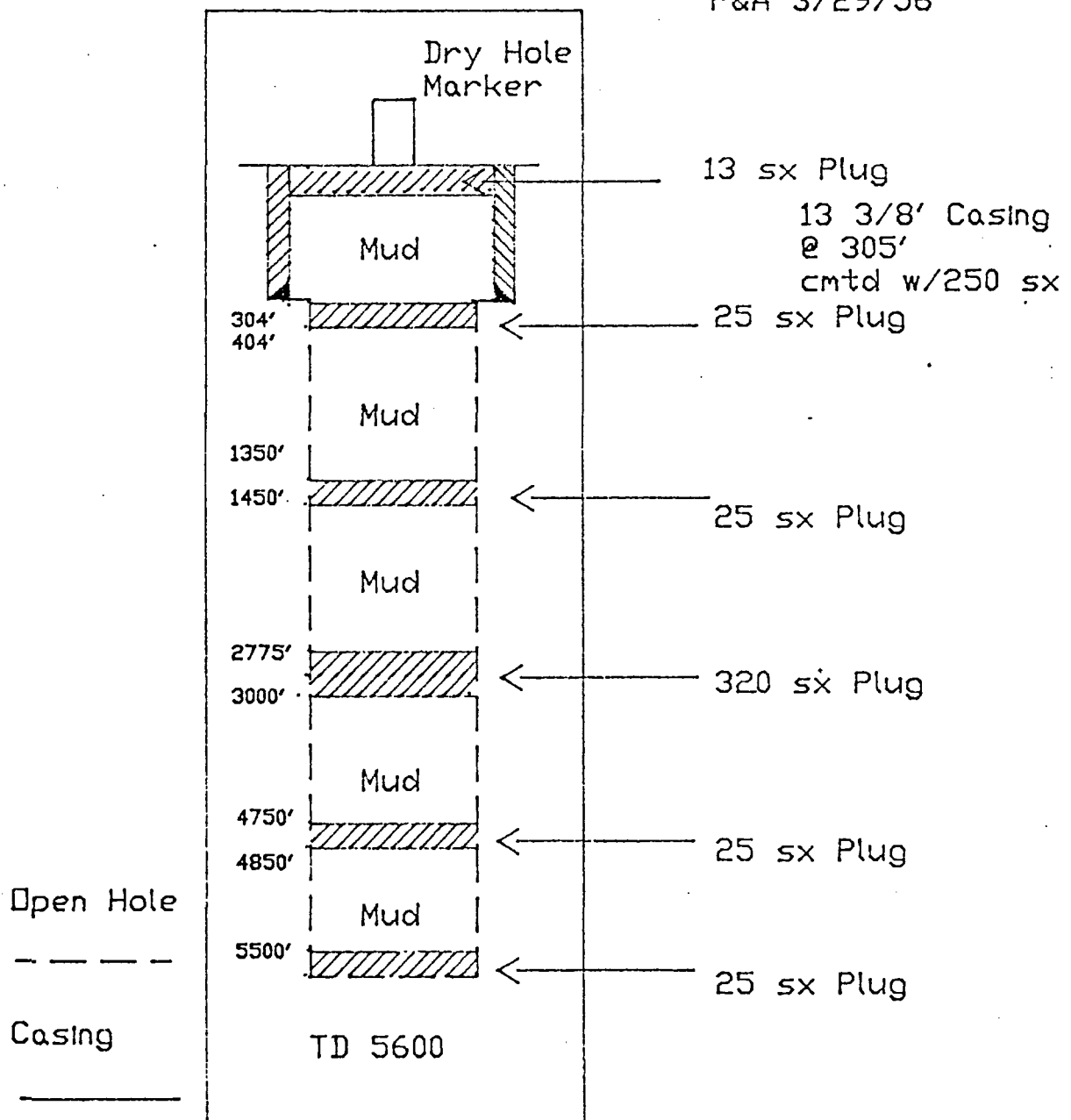
John H. Trigg
Federal 'RB' 31 Well No. 1
330' FNL & 2310' FEL
Sec. 31, T19S, R33E

P&A 9/18/64



Sinclair Oil & Gas Company
 Carder-Federal Well No. 2
 330' FNL & 2310' FEL
 Sec. 31, T19S, R33E

P&A 3/29/56



WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: WALLEN PRODUCTION
LEASE: TONTO
SAMPLE POINT: HEATER TREATER
SAMPLE DATE: 5-27-87
SAMPLE TEMP.:

pH: 6.5
H₂S: 500
SPECIFIC GRAVITY: 1.025

TITRATED AND CALCULATED IONS

| | MILLIGRAMS PER LITER | MILLIEQUIVALENTS PER LITER |
|------------------|-------------------------|-------------------------------|
| HCO ₃ | 915.00 | 15.00 |
| Cl | 11210.00 | 315.77 |
| SO ₄ | 1250.00 | 26.04 |
| Ca | 2800.00 | 140.00 |
| Mg | 0.00 | 0.00 |
| Na | 4986.78 | 216.82 |

IONIC STRENGTH = 0.44
TOTAL HARDNESS = 6000.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 21155.5 mg/ltr.
TOTAL IRON (Fe) = 3.0 ppm

PROBABLE MINERAL COMPOSITION AND ION PAIRING

| | MILLIEQUIVALENTS PER LITER | MILLIGRAMS PER LITER |
|------------------------------------|-------------------------------|-------------------------|
| Ca(HCO ₃) ₂ | 15.00 | 1215.60 |
| CaSO ₄ | 26.04 | 1772.66 |
| CaCl ₂ | 98.96 | 5492.19 |
| Mg(HCO ₃) ₂ | 0.00 | 0.00 |
| MgSO ₄ | 0.00 | 0.00 |
| MgCl ₂ | 0.00 | 0.00 |
| NaHCO ₃ | 0.00 | 0.00 |
| Na ₂ SO ₄ | 0.00 | 0.00 |
| NaCl | 216.82 | 12675.08 |

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = 0.5
CaCO₃ @ 120 DEG F. = 1.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 1996.5 MG/LTR.
CaSO₄ @ 110 DEG F. = 2020.2 MG/LTR.

(THIS SAMPLE CONTAINED 1772.7 MG/LTR. CaSO₄)

F&M OIL AND GAS COMPANY

**Proposed Wallen Tonto Waterflood
Wallen Tonto #7 WIW
Sec 30, T19S, R33E
Lea County, New Mexico**

Exhibit J

Affirmative Statement

F&M Oil and Gas Company has examined available geologic and engineering data and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

F&M OIL AND GAS COMPANY

**Proposed Wallen Tonto Waterflood
Wallen Tonto #7 WIW
Sec 30, T19S, R33E
Lea County, New Mexico**

Exhibit K

Notice

Pursuant to Section XIV of Form C-108,

Applicant has mailed copies of the application to the following:

Surface Owners:

Bureau of Land Management
Carlsbad Resource Area Headquarters
620 E. Greene Street
Carlsbad, New Mexico 88220-6292

Attn: Paul R. Evans

Leasehold Operators within One-half mile:

Kaiser-Francis
11722 W. HWY 80 EAST
Odessa, Texas 79765

Mitchell Energy Corporation
Box 4000
The Woodlands, Texas 77387-4000

Mack Energy
P. O. Box 960
Artesia, New Mexico 88211

Manzano Oil Corporation
P. O. Box 2107
Roswell, New Mexico 88202

TABLE 2

QUATERNARY WELLS WITH NON POTABLE WATER

| LOCATION | OWNER | ELEV. | WATER LEVEL | TOTAL DEPTH | USE OF WELL | CHEMICAL ANALYSES (In Milligrams/Liter or Parts/Million) | | | | DATE OF ANALYSIS | SAMPLED BY |
|---|--------------|-------|----------------|----------------|-------------------|--|-------------|------------------------------|---------------------------------|----------------------|--------------------------|
| | | | | | | CHLORIDES | SULFATES | TOTAL DISSOLVED SOLIDS | ELECTRICAL CONDUCTI- VITY | | |
| SW of SE/4 Scarbauer Sec 4 T20S Cattle R33E | Co. | 3556' | 33' 1968 | 58' | Abd. Stock | 2,382 12,978 | - 16,068 | - - | 10,175 - | 11/17/65 10/24/68 | State United Chem. |
| NW NW Sec 21 T20S R33E | - | 3536' | 35' 1981 | 52' | Abd. Stock | 3,518 | 905 | - | - | 10/24/68 | United Chem. |
| SE NW/4 Sec 12 T20S R32E | - | 2540' | - | 130' | Abd. Stock | 9,744 | 1,878 | - | - | 1968 | United Chem. |
| NE SW/4 Sec 1 T20S Lake R32E | Salt Rch. | 3510' | 21.7 1954 | 30' | Abd. Stock | Reported Salty - 1954 and Dry in 1972 | | | | | State |

TABLE 1

QUATERNARY WELLS WITH POTABLE WATER

CHEMICAL ANALYSIS (In Milligrams/Liter or parts/Million)

TOTAL DISSOLVED SOLIDS

CHLORIDES SULFATES

IN 1969 (reported good quality water)

2560

2134

1861

837

750

290

42

362

DATE OF ANALYSIS

SAMPLED BY

11/17/65

1/16/78

1969

9/18/72

5/12/82

State

Reed

State

State

Reed

LOCATION

OWNER

ELEV.

WATER LEVEL

TOTAL DEPTH

USE OF WELL

CHLORIDES

SULFATES

TOTAL DISSOLVED SOLIDS

ELECTRICAL CONDUCTIVITY

Snyder Ranch

3650'

116'

131'

Abd. Stock

R33E

Smith

90.9

100'

Active Domestic Stock

298

996

2134

2560

SE NE/4 Sec. 26 T19S R33E

Old Helway Bar

3551'

36.7'

1981

78'

Abd. Dom.

362

309

SE SE/4 Sec. 23 T20S R32E

NW NW Sec. 25 T20S R32E

Smith?

3555'

39

1982

65'

Stock

42

82

1930

Birmingham Ranch

3501'

44'

1972

50'

Domestic

SE NE/4 Sec. 36 T20S R32E

SW/4 Sec. 23 T20S R32E

3541'

39.8

1981

Stock

Data

No Data (Field check - Fresh water)

No Data (Field check - Fresh water)

SE NW/4 Sec. 36 T20S R32E

No Data

F & M OIL AND GAS COMPANY

P. O. BOX 891
MIDLAND, TEXAS 79702-0891
(915) 682-7714
FAX 682-7700

July 1, 1996

Oil Conservation Division
District Office
P. O. Box 1980
Hobbs, Nm 88240

Re: **Form, C-108**
Wallen-Tonto #7
Sec 30, T19S, R33E
Lea County, NM

Dear OCD:

Please find enclosed the district copy of the above referenced form filed in duplicate with Santa Fe.

If you have any questions, please do not hesitate to contact me at the above.

Thank you for your time and attention.

Sincerely,

Leah D. Spears
Office Manager

enclosures

David
F.Y.I.

AFFIDAVIT OF PUBLICATION

RECEIVED JUN 28 1996

State of New Mexico,
County of Lea.

I, Kathi Bearden

Publisher

of the Hobbs Daily News-Sun, a
daily 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 _____

1

weeks.

Beginning with the issue dated

June 25

, 1996

and ending with the issue dated

June 25

, 1996

Kathi Bearden
Publisher

Sworn and subscribed to before

me this 27 day of

June, 1996

Sandra Catlett

Notary Public.

My Commission expires
August 29, 1999

(Seal)

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

LEGAL NOTICE

June 25, 1996

F & M Oil and Gas Company proposes to re-enter and put the
following well into water injection service:

Wallen-Tonto #7

1650' FSL & 990' FEL, Sec. 30, T19S, R33E

Tonto-Yates Seven Rivers, South Pool

Lea County, New Mexico

1) Name address, phone number and contact party for the ap-
plicant:

F&M Oil and Gas Company

P. O. Box 891

Midland, Texas 79702

Attn: Randall R. Foster

2) The intended purpose of the injection well is to begin a wa-
terflood project.

3) Depth of injection interval is 2,900' to 3,113'. Maximum in-
jection rates and pressures are 500 barrels per day at 580
psig.

4) Interested parties must file objections or requests for hear-
ing with the following within 15 days:

Oil Conservation Division

2040 South Pacheco

Santa Fe, NM 87505

#14638

STICK
CERTIFIED MAIL

1. If you want to leave the return receipt with your rural carrier, attach this form to the front of the mailpiece, or on the back if space does not permit.
2. If you do not want the return receipt, attach this form to the back of the mailpiece.
3. If you want the return receipt, attach this form to the front of the mailpiece, or on the back if space does not permit.
4. If you want the return receipt, attach this form to the front of the mailpiece, or on the back if space does not permit.
5. Enter fees for return receipt and restricted delivery.
6. Save this form.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Manzano Oil Corp.
P.O. Box 2107
Roswell, N.M.
88202

4a. Article Number

Z 781 093 902

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

Z 781 093 902



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

| | |
|---|---------|
| Sent to MANZANO OIL CORP. | |
| Street and No. P.O. Box 2107 | |
| R.O. State and ZIP Code ROSWELL, N.M. 88202 | |
| Postage | \$.32 |
| Certified Fee | 1.10 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, Date, and Addressee's Address | |
| OTM Postage & Fees | \$ 2.52 |
| Postmark or Date MAY 1996 USPO | |

PS Form 3800, March 1993

**STICK POSTAGE STAMPS
CERTIFIED MAIL FEE, AND CHARGE**

1. If you want this receipt postmarked leaving the receipt attached and press your rural carrier (no extra charge).
2. If you do not want this receipt postmarked leaving the receipt attached, detach address of the article, date, detach
3. If you want a return receipt, write return receipt card, Form 3811, and send it space permits. Otherwise, affix **REQUESTED** adjacent to the number
4. If you want delivery restricted to addressee **RESTRICTED DELIVERY**
5. Enter fees for the services requested; return receipt is requested, check the
6. Save this receipt and present it

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

KAISER-FRANCIS Oil Company
11722 W. Hwy 80 EAST
ODESSA, TX. 79765

4a. Article Number

Z 781 093 905

4b. Service Type

- | | |
|--|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input checked="" type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

Z 781 093 905



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

| | |
|---|---------|
| Sender's Name KAISER-FRANCIS Oil Co. | |
| Street and No. 11722 W. Hwy 80 EAST | |
| City, State and ZIP Code ODESSA, TX 79765 | |
| Postage | \$.32 |
| Certified Fee | 1.10 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, City, and Addressee's Address | |
| TOTAL Postage & Fees | \$ 2.52 |
| Postmaster's Date | |

PS Form 3800, March 1993

CERTI
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2. If y
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3. If y
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4. If y
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5. Ent
return
6. Sa

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

*Mitchell Energy Corp.
Box 4000
The Woodlands, Tx.
77387-4000*

4a. Article Number

Z 781 093 904

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

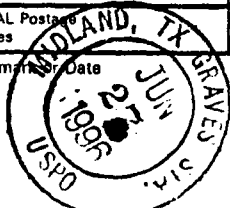
Z 781 093 904



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

| | |
|--|---------|
| Sept. 10 <i>Mitchell Energy Corp.</i> | |
| Street and No. <i>Box 4000</i> | |
| P.O., State and ZIP Code <i>The Woodlands, TX. 77387-4000</i> | |
| Postage | \$.32 |
| Certified Fee | 1.10 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, Date, and Addressee's Address | |
| TOTAL Postage & Fees | \$ 2.52 |
| Postmaster's Date | |



PS Form 3800, March 1993

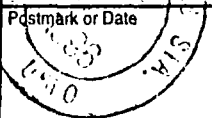
Is your RETURN ADDRESS completed on the reverse side?

| | | | |
|---|--|---|--|
| SENDER: <ul style="list-style-type: none">• Complete items 1 and/or 2 for additional services.• Complete items 3, and 4a & b.• Print your name and address on the reverse of this form so that we can return this card to you.• Attach this form to the front of the mailpiece, or on the back if space does not permit.• Write "Return Receipt Requested" on the mailpiece below the article number.• The Return Receipt will show to whom the article was delivered and the date delivered. | | I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee. | |
| 3. Article Addressed to: <i>Mack Energy</i> <i>P.O. Box 960</i> <i>Artesia, N.M. 88211</i> | | 4a. Article Number <i>P 329 341 928</i> | |
| 5. Signature (Addressee) | | 4b. Service Type: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input checked="" type="checkbox"/> Return Receipt for Merchandise | |
| 6. Signature (Agent) | | 7. Date of Delivery | |
| | | 8. Addressee's Address (Only if requested and fee is paid) | |

Thank you for using Return Receipt Service

P 329 341 928

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

| | |
|---|----------------|
| Sent to <i>Mack Energy</i> | |
| Street & Number <i>P.O. Box 960</i> | |
| Post Office, State, & ZIP Code <i>Artesia, N.M. 88211</i> | |
| Postage | \$ <i>-.32</i> |
| Certified Fee | <i>1.10</i> |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | <i>1.10</i> |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| TOTAL Postage & Fees | \$ <i>2.52</i> |
| Postmark or Date  | |

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Bureau of Land Management

Carlsbad Resource Area Headquarters
620 E. Greene Street
Carlsbad, N.M. 88220-6292

ATTN: Paul R. Evans

4a. Article Number

P 329 341 918

4b. Service Type

- | | |
|--|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input checked="" type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 329 341 918

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

| | |
|--|---------------------------|
| Sent to | BLM |
| Street & Number | 620 E. GREENE ST. |
| Post Office, State, & ZIP Code | CARLSBAD, N.M. 88220-6292 |
| Postage | \$.32 |
| Certified Fee | 1.10 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom Date, & Addressee's Address | |
| TOTAL Postage & Fees | \$ 2.52 |
| Postmark or Date | APR 1995 |

PS Form 3800, April 1995

