EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

March 17, 1992

Application for SWD Well
Yates Federal "C" Well No. 2
Eddy County, New Mexico

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Exxon Corporation respectfully requests administrative approval of the enclosed application to convert the subject well to salt water disposal. In support of this request, Form C-108 and its attachments are enclosed. The proof of publication of a legal notice will be forwarded to you as soon as I receive it. Copies of this application are being sent by certified mail to the leasehold operator within one-half mile of proposed conversion well, and the Bureau of Land Management in Carlsbad is being notified as the surface owner.

If you have any questions concerning this application, please call me at (915) 688-7552.

Sincerely,

Marsha Wilson

Marsha Wilson
Environmental and Regulatory Affairs

/mw
Attachments

c: New Mexico OCD
District 2 Office
Drawer DD
Artesia, New Mexico

Offset Operator

Bureau of Land Management
Carlsbad, New Mexico

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, P. O. Box 2088, Santa Fe, New Mexico 87501 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.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

MAR 05 92

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: Exxon Corporation

Address: P.O. Box 1600 Midland, TX 79702

Contact party: Tricia Plemons Phone: 915 688-6732

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 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 source 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: Patricia Plemons Title Sr. Project Engineer

Signature: Patricia Plemons Date: 3-5-92

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Logs sent with initial completion 10/82.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
Exxon Corporation	Yates Federal C			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
2	1980' FEL, 1980' FSL	31	20S	28E

Schematic

Attached

Tubular Data

Surface Casing

Size 13-3/8 " Cemented with 600 sx.

TOC Surface feet determined by Circulate 120 SXS

Hole size 17-1/2"

Intermediate Casing

Size 9-5/8 " Cemented with 1250 sx.

TOC Surface feet determined by circ. 150 SX

Hole size 12-1/4"

Long string

Size 5-1/2 " Cemented with 1680 sx.

TOC 3980 feet determined by temp. survey

Hole size 8-3/4"

Total depth 11901'

Injection interval

9004 feet to 9130 feet

(perforated) or open-hole, indicate which)

Proposed:

Tubing size 2-7/8" lined with cement lined tubing (material) set in a

Baker TSN or lockset (brand and model) packer at 8900 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Wolfcamp
2. Name of Field or Pool (if applicable) Burton Flat
3. Is this a new well drilled for injection? /7 Yes /X7 No

   If no, for what purpose was the well originally drilled? gas production in the Wolfcamp
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) NO
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Underlying - Canyon 9650' Overlying - Dean 8300' Bone Springs 4750'

SUPPLEMENT TO APPLICATION FOR DISPOSAL AUTHORIZATION

V. Map is attached.

VI. None of the wells in the area of review penetrate the proposed disposal zone.

VII. Proposed Operations

1. Average daily rate - 1300 BPD
   Maximum daily rate - 2300 BPD
   Volume of fluids to be injected - 500,000 Bbls

2. System is closed.

3. Average injection pressure - 1000 psig
   Maximum injection pressure - 1800 psig

4. The source of water that will be disposed of is from the Delaware Mountain Group. The water is being produced from the following wells: Exxon Yates Federal "C" numbers 3, 4, 5, 6, 7 ,8, 9, 10, 12, 13, 14, 15, 17, and 18 in Section 31, T-20-S, R-28-E, Eddy County, New Mexico; Exxon Hondo "A" State numbers 1, 2, 3, and 4 in Section 32, T-20-S, R-28-E, Eddy County, New Mexico; and Hondo Fee #2 in Section 32, T-20-S, R-28-E, Eddy County, New Mexico. Attached is the chemical analysis of the produced water from the Yates Federal "C" #36. Also attached is a letter from Martin Water Labs stating their findings that there is no evidence of incompatibility between the Delaware and the Wolfcamp.

5. Attached is a water analysis from the Yates Federal "C" #2.

VIII. The proposed injection zone in the Yates Federal "C" #2 is at a depth from 9,004' to 9,130' (-5,755 to -5,881 subsea). This 126 foot zone is in a limestone in the upper Wolfcamp Series of the Lower Permian System. Overall, the Wolfcamp Series is composed mainly of calcareous, cherty shales interbedded with very fine to finely crystalline limestones. Minor, very fine to fine grained, shaley, calcareous sandstone lenses may also be present. The proposed disposal zone in the Exxon Yates "C" #2 well is within a very fine to finely crystalline limestone containing intercrystalline and fracture porosity. Regional dip is to the southeast at approximately 3 degrees. The proposed injection zone has been produced in this well, but does not produce in any offset wells in the section.

Fresh water in this general area has been encountered in the Rustler Formation and in the Capitan Reef. The deepest recorded freshwater in this area occurs at 250' to 285' in the Rustler. However, New Mexico law protects the entire Capitan interval as well, which extends down to approximately 1,500'.

The attached cross section shows the general interval of proposed injection. This interval is bounded above by the low porosity and permeability 3rd Bone Springs sand and shales. The injection interval is bounded below by the low permeability, middle and lower Wolfcamp shales and limestones. Based on the permeability barriers above and below, we feel that water injected into the proposed interval will be

stratigraphically contained in this zone.

IX. There is no proposed stimulation program.

X. Logs sent with initial completion report dated 10/82.

XI. The fresh water analysis from Kay Hood's water well was submitted with the Yates Federal "C" #35 permit request. It is the only water well within a one mile radius.

XII. There are no indications of open faults or other hydrological connections between the proposed disposal interval and the shallower fresh water zones.

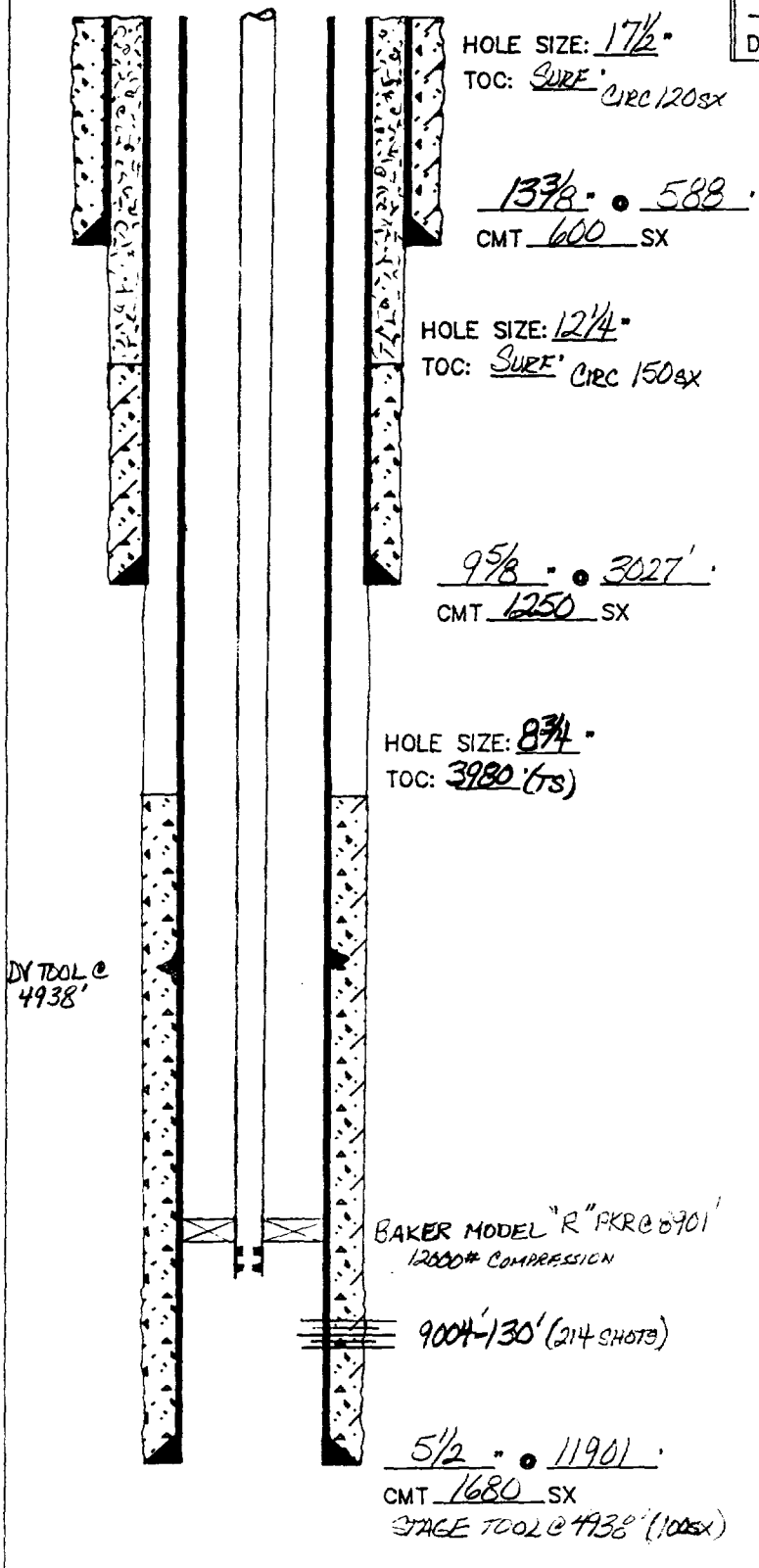
XIII. A signed statement of mailing of notice is attached, along with proof of publication.

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 3249', 18' ABOVE GL

LEASE & WELL NAME: YATES FEDERAL "C" #2
FIELD: BURTON FLAT COUNTY: EDDY ST.: NM
LOCATION: 1980' FEL, 1980' FSL, SEC 31, T20S, R28E

DATE: 10-28-91 BY: RS BOSE REV.: BY:



TD: 11901' PBD: 11769'

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET AT
13⅜	54.5	K-55	588
9⅝	36	K-55	3027

PRODUCTION CASING

5½	20	L-80	0-40'
5½	17	K-55	40-3701
5½	17	L-80	3701-9261
5½	20	L-80	9261-11901

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.	SET AT
282	2⅞	8RD	EUE	6.5	N-80	8901

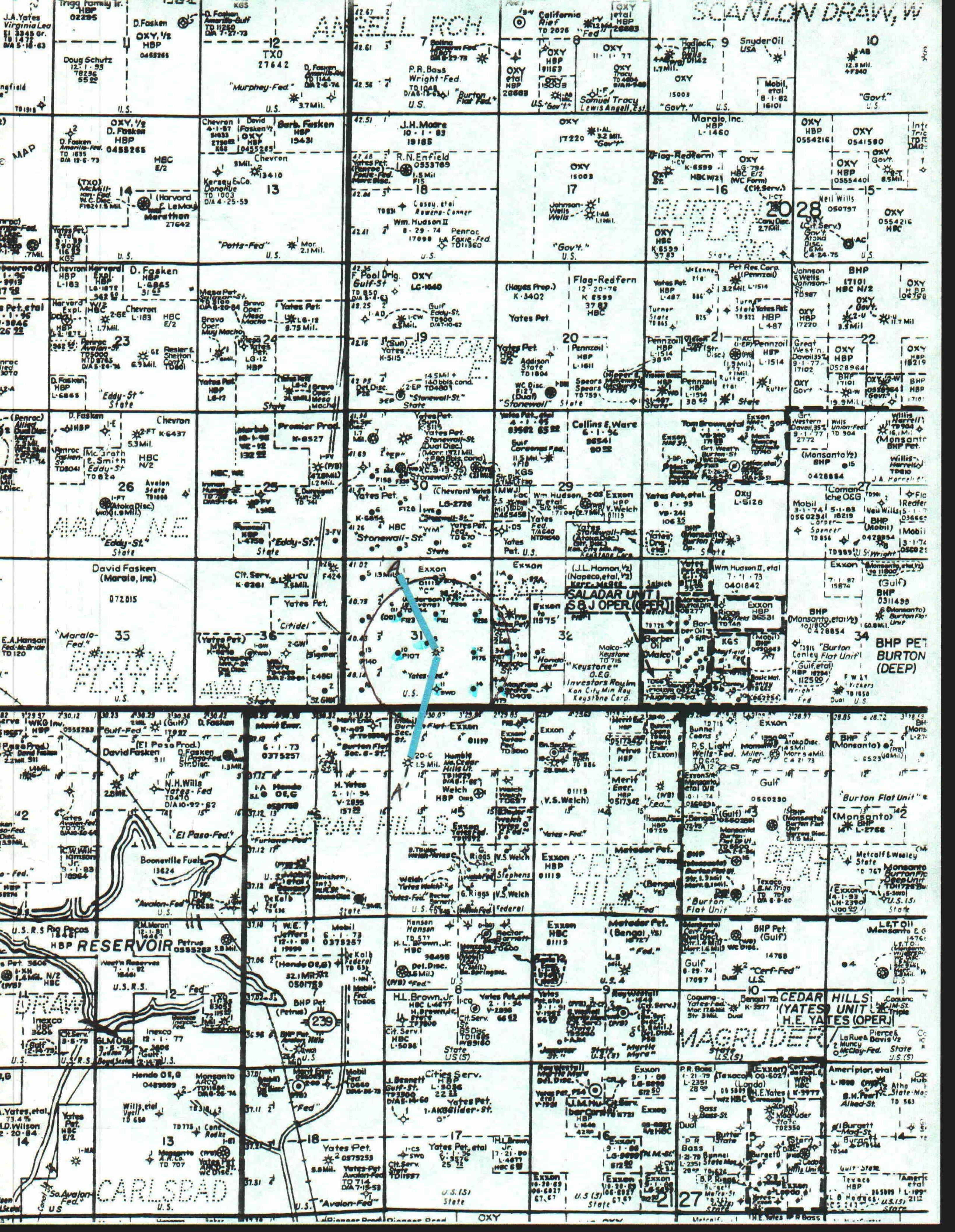
WELL HISTORY:

10/82 DEC PERF 9004'-57, 72-102, 109-130 (2SPF) 214 SHOTS TOTAL

7/83 SI BHP = 4386 PSI

8/89 SI BHP = 247 PSI SITP = 179 PSI
10 DAY SI TIME BHT @ 9130' = 148°F

BHA: MODEL "R" PKR
2.25" "R" NIPPLE
PERFORATED SUB
1.87" F NIPPLE
1 JT
1.25/2.2" SEATING NIPPLE


SCANLON DRAW, W
ANGELL RCH.
BURTON FLAT NO.
AVALON E.
AVALON N.E.
BURTON FLAT, W.
AVALON
SALADAR UNIT
S&J OPER (OPER)
BHP PET BURTON (DEEP)
AVALON HILLS
CEDAR HILLS
BURTON FLAT
RESERVOIR
CEDAR HILLS (YATES) UNIT H.E. YATES (OPER)
MAGRUDER
CARLSBAD
"Burton Flat Unit"
"Stonewall-St."
"Eddy-St."
"Potts-Fed"
"Murphey-Fed."
"Avalon-Fed"
"El Paso-Fed."
"Keystone"
A
A'

Martin Water Laboratories, Inc.
WATER CONSULTANTS SINCE 1953
BACTERIAL AND CHEMICAL ANALYSES

P.O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 or 563-1040

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

October 9, 1991

Mr. Gill Beuhler
Exxon Company, U.S.A.
P.O. Box 1600
Midland, TX 79702

RE: Avalon Field Area

Dear Mr. Beuhler:

The objective of this letter is to review an evaluation of compatibility between waters that would be involved in disposing of Delaware into either the Wolfcamp or Morrow. We have no specific records to rely on for this evaluation but rather have cataloged records of a natural Wolfcamp in this field with the nearest record available being in the East Carlsbad field. It would be decidedly preferable if we had records of Wolfcamp in this field, but in its absence we provide the interpretations below with this in mind.

A careful review of the records available as described above has revealed no evidence of any incompatibility condition. This is to say that based on the records available, we have identified no implication that injecting Delaware into either the Morrow or the Wolfcamp would result in any precipitation or scaling deposits in the disposal interval. Therefore, we have identified no evidence that there is any reason why the Delaware water cannot be injected into either of these other zones.

Yours very truly,

Waylan C. Martin

WCM/mo

PETROLITE

Petrolite Oil Field Chemicals Group
16010 Barker's Point Lane • Houston, Texas 77079
(713) 558-5200 • Telex 4620346 • Fax (713) 589-4737

Reply to: P.O. Box 5250
Hobbs, New Mexico 88241

Phone: (505) 392-6711
Fax: (505) 392-3759

WATER ANALYSIS REPORT

Company : EXXON
Address : HOBBS, NM
Lease : YATES C FEDERAL
Well : #36
Sample Pt. : WELLHEAD

Date : 12-18-90
Date Sampled : 12-14-90
Analysis No. : 132

	ANALYSIS		mg/L		* meq/L
1.	pH	6.7			
2.	H2S	POSITIVE			
3.	Specific Gravity	1.125			
4.	Total Dissolved Solids		186113.7		
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2				
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		150.0		
11.	Bicarbonate	HCO3	183.0	HCO3	3.0
12.	Chloride	Cl	114769.4	Cl	3237.5
13.	Sulfate	SO4	1000.0	SO4	20.8
14.	Calcium	Ca	14304.6	Ca	713.8
15.	Magnesium	Mg	3041.2	Mg	250.2
16.	Sodium (calculated)	Na	52815.5	Na	2297.3
17.	Iron	Fe	0.1		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		48243.4		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

714	*Ca <----- *HCO3	3
	/------->	
250	*Mg -----> *SO4	21
	<----------/	
2297	*Na -----> *Cl	3237

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	3.0	2
CaSO4	68.1	20.8	14
CaCl2	55.5	690.0	382
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	250.2	119
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2297.3	1342

REMARKS: UPPER BRUSHY CANYON WATER
RESISTIVITY - .056 OHMS - METERS @ 70 F

Petrolite Oilfield Chemicals Group

Respectfully submitted
BETTY CROSSLEY

WELL FILE

P O BOX 1468
MONAHANS TEXAS 79756
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 1183226

TO: Mr. Ralph King
1700 W. Broadway, Andrews, Texas 79714

SAMPLE RECEIVED 11-16-83

RESULTS REPORTED 11-22-83

COMPANY Exxon Company, U.S.A. LEASE Yates Fed. "C"

FIELD OR POOL Burton Flat

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Eddy STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Produced water - taken from Yates Federal "C" #2

NO. 2

NO. 3

NO. 4

REMARKS: Wolfcamp

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1843			
pH When Sampled				
pH When Received	6.00			
Bicarbonate as HCO_3	37			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	2,750			
Calcium as Ca	840			
Magnesium as Mg	156			
Sodium and/or Potassium	112,711			
Sulfate as SO_4	3,278			
Chloride as Cl	173,286			
Iron as Fe	38.0			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	290,310			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.060			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: The above results show no correlation with our nearby records of Wolfcamp water. We generally consider the characteristics of this water to be comparable to commercial brine.

Form No. 3

By Waylan C. Martin, M. A.

cc: Mr. O. W. Davenport, Midland

EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

March 16, 1992

Carlsbad Current - Argus
620 South Main
Carlsbad, NM 88220

Please publish notice of the following application in your newspaper for one day and return an affidavit of publication along with a clipping of the published notice, to the attention of M.M. Wilson:

Applicant - Exxon Corporation
P. O. Box 1600
Midland, TX 79702
Contact Person - Marsha Wilson
Phone - (915) 688-7552

Item - Application to the New Mexico Oil Conservation Division for approval to dispose into the Yates "C" #2. The well is located 1980' FSL and 1980' FEL of Section 31, T20S, R28E, Eddy County, New Mexico. The disposal zone will be the Wolfcamp formation from 9004' to 9130'. The maximum injection rate will be 2300 barrels per day; the maximum pressure will be 1800 psig. Interested parties must file objections or requests for hearing with the Oil Conservation Division, 310 Old Santa Fe Trail, Rm. 206, Santa Fe, New Mexico, 87503, within 15 days.

Marsha Wilson
Marsha Wilson
Environmental and Regulatory Affairs

\mw

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Copies NMOCD Form C-108 were sent to the following by certified mail on 3-17-92.

Offset Operators

Exxon Corporation
c/o Sharon Hall
Midland, TX 79702

Surface Owners

Bureau of Land Management
Carlsbad Resource Area
P. O. Box 1778
Carlsbad, NM 88220

Marsha Wilson
Marsha Wilson
Environmental and Regulatory Affairs

EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

March 27, 1992

Application for SWD Well
Yates Federal "C" #2
Eddy County, New Mexico

State of New Mexico
Energy and Minerals Department
P. O. Box 2088
Santa Fe, NM 87501

Attention: David Catanach

Attached is the newspaper clipping and affidavit for the salt water disposal application previously submitted to you on March 17, 1992.

If there is any additional information you need concerning this matter, please call me at (915) 688-7552.

Sincerely,

Marsha Wilson

Marsha Wilson
Environmental and Regulatory Affairs

\mw
Attachment

№ 13878

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

E. C. Cantwell, being first duly sworn, on oath says:

That he is publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

MARCH 20 , 19 92

, 19 ____

, 19 ____

, 19 ____

that the cost of publication is $ 9.98 , and that payment thereof has been made and will be assessed as court costs.

E C Cantwell

Subscribed and sworn to before me this

20 day of MARCH , 19 92

Notary Public

My commission expires 6/01/92

March 20, 1992

Applicant:
Exxon Corporation
P.O. Box 1600
Midland, TX 79702
Contact Person-Marsha Wilson
Phone-(915) 688-7552

Item:
Application to the New Mexico Oil Conservation Division for approval to dispose into the Yates "C" #2. The well is located 1980' FSL and 1980' FEL of Section 31, T2OS, R28E, Eddy County, New Mexico. The disposal zone will be the Wolfcamp formation from 9084' to 9130'. The maximum injection rate will be 2300 barrels per day; the maximum pressure will be 1800 psig. Interested parties must file objections or requests for hearing with the Oil Conservation Division, 310 Old Santa Fe Trail, Rm. 206, Santa Fe, New Mexico, 87503, within 15 days.

Marsha Wilson
Environmental and
Regulatory Affairs

MAR 26 92

EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

April 8, 1992

Fluid Injection Application
Yates Federal "C" Well No. #2

State of New Mexico
Energy and Minerals Department
P. O. Box 2088
Santa Fe, New Mexico 87501

Attn: Ben Stone

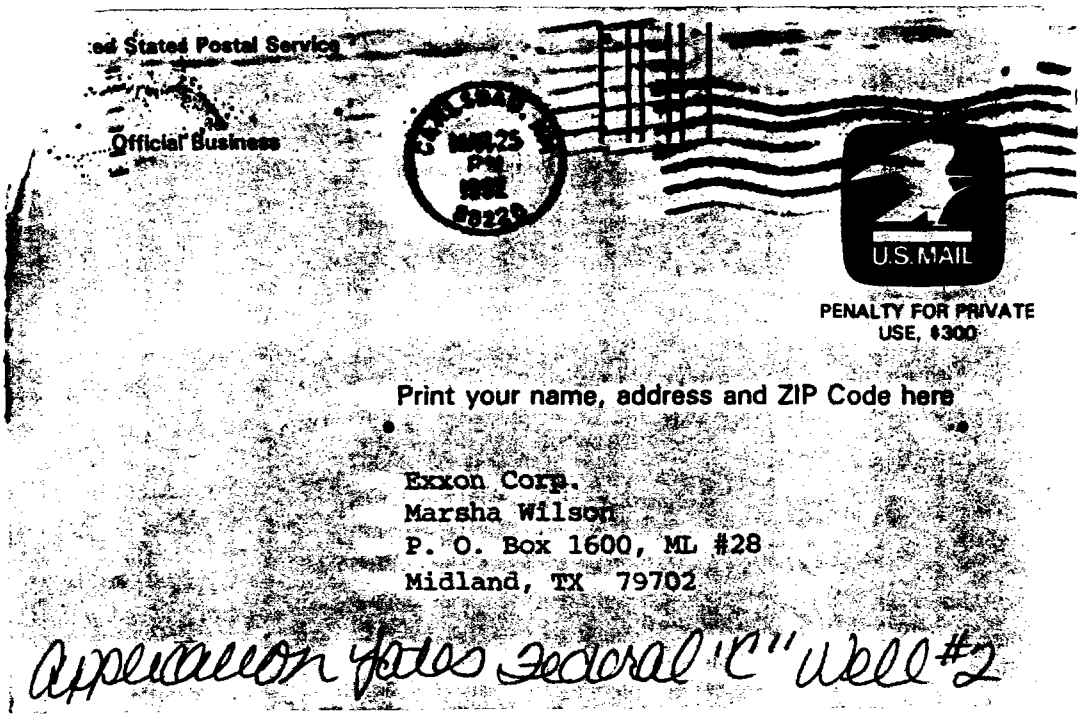
Attached is a copy of the certified mail card showing proof that the application copy was sent to the Bureau of Land Management. This is sent per your request. If there are any questions, please give me a call at (915) 688-7552.

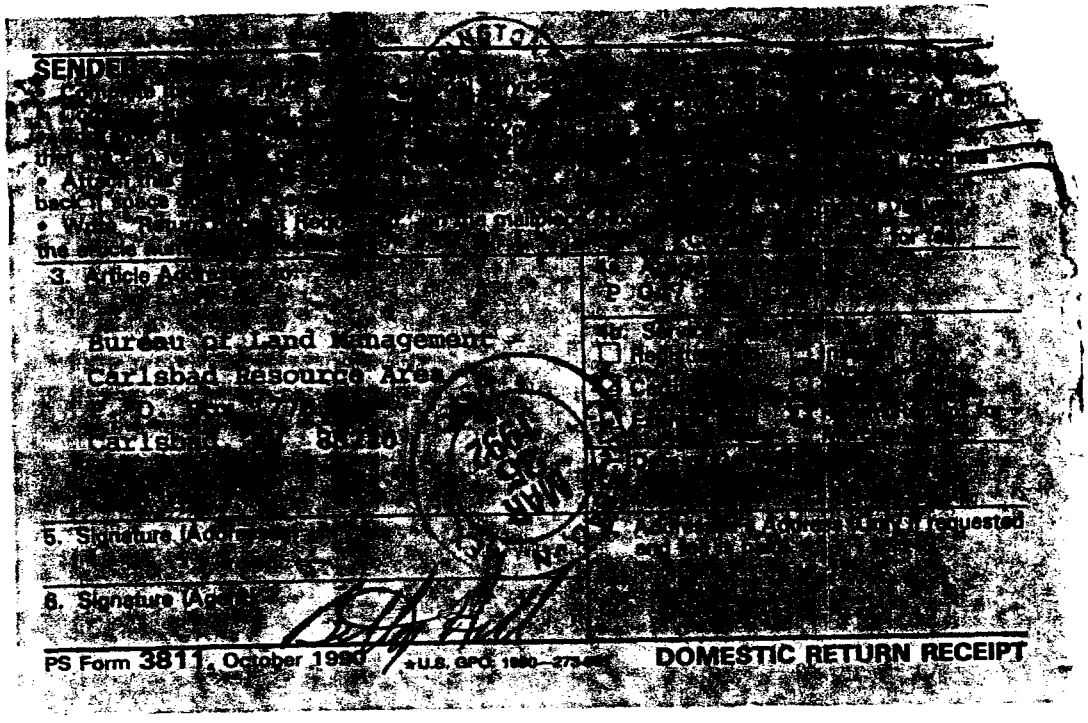
Sincerely,

Marsha Wilson

Marsha Wilson
Environmental and Regulatory Affairs

\mw
Attachment


ed States Postal Service
Official Business
U.S. MAIL
PENALTY FOR PRIVATE USE, $300
Print your name, address and ZIP Code here
Exxon Corp.
Marsha Wilson
P. O. Box 1600, ML #28
Midland, TX 79702
Application for Federal "C" Well #2


SENDER
3. Article Addressed to:
Bureau of Land Management
Carlsbad Resource Area
5. Signature (Addressee)
8. Signature (Agent)
PS Form 3811, October 1990
DOMESTIC RETURN RECEIPT

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE