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

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

March 28, 1991

Application for SWD Well
Yates Federal "C" Well No. 35
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 operators within one-half mile of proposed conversion well, and the Bureau of Land Management in Roswell is being notified as a surface owner.

Please note that there will be a cement squeeze done for Yates Federal "C" Well No. 19 to raise top of cement on 5-1/2" casing to 2500'.

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

Sincerely,

Marsha Wilson

Marsha Wilson
Environmental and Regulatory Affairs

MMW:srt
Attachments

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

Offset Operators

Bureau of Land Management
Roswell, New Mexico

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

FEB 0 6 91

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, Texas 79702

Contact party: Kevin Jensen Phone: (915) 688-6220

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 R-7408 and R-8050.

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: Kevin P. Jensen Title Senior Engineer

Signature: Kevin P. Jensen Date: 1/21/91

* 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 completion report dated 11/25/85.

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

II. WELL DATA

. 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.

. 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.

IV. 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.

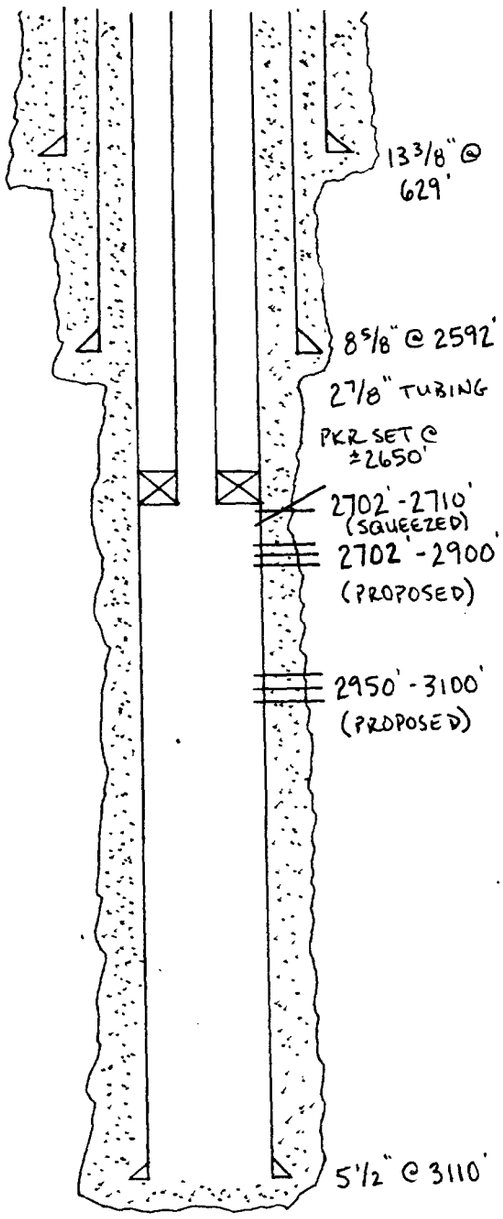
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
Exxon Corporation	Yates "C" Federal			
WELL NO.	**FOOTAGE LOCATION**	**SECTION**	**TOWNSHIP**	**RANGE**
35	563' FNL & 560' FEL	5	21-S	27-E

Eddy County, New Mexico

Schematic



Tubular Data

Surface Casing

Size 13 3/8" Cemented with 950 sx.

TOC Surface feet determined by circ to surface

Hole size 17 1/2"

Intermediate Casing

Size 8 5/8" Cemented with 1300 sx.

TOC Surface feet determined by circ to surface

Hole size 11"

Long string

Size 5 1/2" Cemented with 550 sx.

TOC Surface feet determined by circ to surface

Hole size 7 7/8"

Total depth 3110'

Injection interval

2702 feet to 3100 feet

(perforated or open-hole, indicate which)

Tubing size 2 7/8" lined with plastic (material) set in a

Baker Lok-set (brand and model) packer at ±2650 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Delaware

2. Name of Field or Pool (if applicable) Avalon Delaware

3. Is this a new well drilled for injection? [ ] Yes [X] No

   If no, for what purpose was the well originally drilled? To produce oil from the Delaware formation.

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) perfed 2702-2710' on initial completion, set CIBP at 2632' and topped with 30' cmt., set cmt. plug 2407-2600' with 20 sx, set cmt. plug 507-698' with 20 sx, set cmt plug at 0-411' with 45 sx. Also squeezed perfs from 2702-2710' with 200 sx CI-C cement.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Overlying - Cedar Hills Yates

   Underlying - Avalon Bone Springs

SUPPLEMENT TO APPLICATION FOR AUTHORIZATION TO INJECT

V. Map is attached.

VI. Data on wells within area of review is included on the attached wellbore schematics.

VII. Proposed Operations

1. Average daily rate - 630 BPD
   Maximum daily rate - 1600 BPD
   Volume of fluids to be injected - 3,000,000 Bbls

2. System is closed.

3. Average injection pressure - 540 psig
   Maximum injection pressure - 540 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.

5. The produced water from the Yates Federal "C" #36 is representative of the water to be disposed in this wellbore.

VIII. The proposed injection zones in the Yates Federal "C" #35 occur at depths of 2702' to 2900' (517' to 319' subsea) and 2950' to 3100' (269' to 119 subsea). These zones are in the Cherry Canyon Formation of the Delaware Mountain Group. These intervals total 348' in thickness and consist of fine to very fine grained sandstone, and are composed primarily of quartz, with lesser amounts of feldspar, clay, dolomite, and calcite. Regional dip is to the southeast at 3-6 degrees. The proposed injection zones are stratigraphically equivalent to zones that are productive updip, and will aid in maintenance of reservoir pressure in those updip producers.

Fresh water in this general area has been encountered in the Rustler Formation and in the Capitan Reef. At this specific location, the deepest recorded freshwater occurs at 250' to 285' in the Rustler. However, New Mexico law protects the entire Capitan interval as well, which in this well extends from approximately 755' to 1496'.

The attached cross section shows the general interval of proposed injection. This interval is bounded above by low permeability dolomite of the basal Goat Seep Reef, and is bounded below by several impermeable shale layers. Based on these permeability barriers above and below, we feel that water injected into the proposed injection interval will be stratigraphically confined to this zone and will move updip toward producing wells to the north.

IX. Proposed stimulation program on Exxon Yates Federal "C" #35 SWD; new perforations 2702' - 2900' and 2950' - 3100'.

1. Drill out cement plugs from surface to TD.

2. Perf 2702' - 2900' and 2950' -3100' at 1 sp4f.

3. Frac 2702' - 3100' with 100,000 gals. gelled water and 200,000# 20-40 sand.

4. Run temperature survey.

5. Swab/flow back load.

6. Clean wellbore and prepare to inject.

X. Logs sent with initial completion report dated 11/25/85.

XI. The fresh water analysis from Kay Hood's water well is attached and is the only such well within a one mile radius.

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

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

PETROLITE

SCALE TENDENCY REPORT

Company	: EXXON	Date	: 12-18-90
Address	: HOBBS, NM	Date Sampled	: 12-14-90
Lease	: YATES C FEDERAL	Analysis No.	: 132
Well	: #36	Analyst	: BETTY CROSSLEY
Sample Pt.	: WELLHEAD		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.9	at	60 deg. F	or	16 deg. C
S.I. =	1.0	at	80 deg. F	or	27 deg. C
S.I. =	1.0	at	100 deg. F	or	38 deg. C
S.I. =	1.0	at	120 deg. F	or	49 deg. C
S.I. =	1.1	at	140 deg. F	or	60 deg. C

****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	1105	at	60 deg. F	or	16 deg C
S =	1226	at	80 deg. F	or	27 deg C
S =	1304	at	100 deg. F	or	38 deg C
S =	1340	at	120 deg. F	or	49 deg C
S =	1365	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
BETTY CROSSLEY

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	243
CaSO4	68.1	20.8	1417
CaCl2	55.5	690.0	38287
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	250.2	11911
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2297.3	134256

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

Petrolite Oilfield Chemicals Group

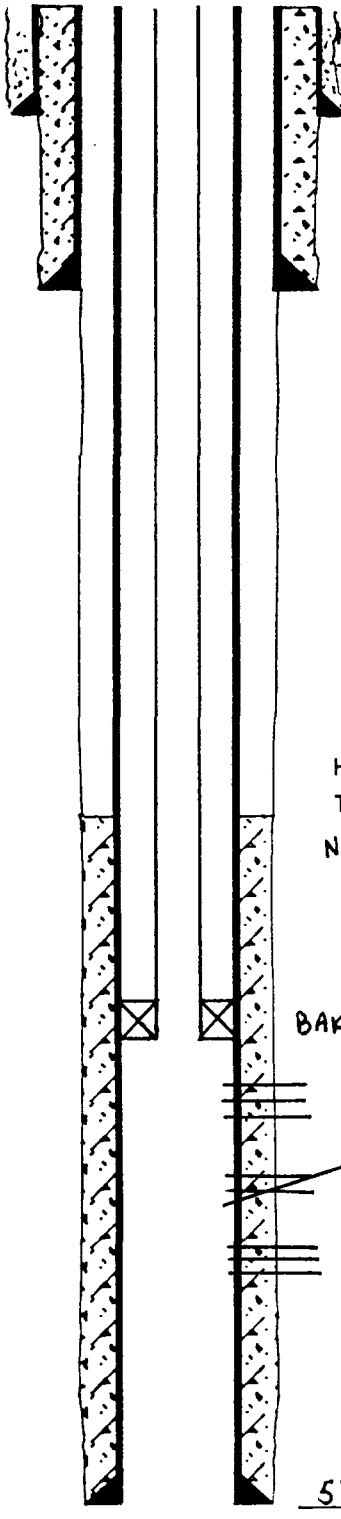
Respectfully submitted,
BETTY CROSSLEY

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 3223 ", 21 ' ABOVE GL

LEASE & WELL NAME: YATES "C" FEDERAL #19
FIELD: _____ COUNTY: EDDY ST.: NM
LOCATION: Unit E of Sec 4, T21S, R27E

DATE: 11/30/90 BY: KPJ REV.: _____ BY: _____



TD: _____ ' PBD: _____ '

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET AT
13 3/8"	54.5	K-55	622'
9 5/8"	36	K-55	3018'

PRODUCTION CASING

5 1/2"	17+20		11650'

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.	SET AT
	2 7/8"	EUE	N80	6.5	N80	10790'

WELL HISTORY:

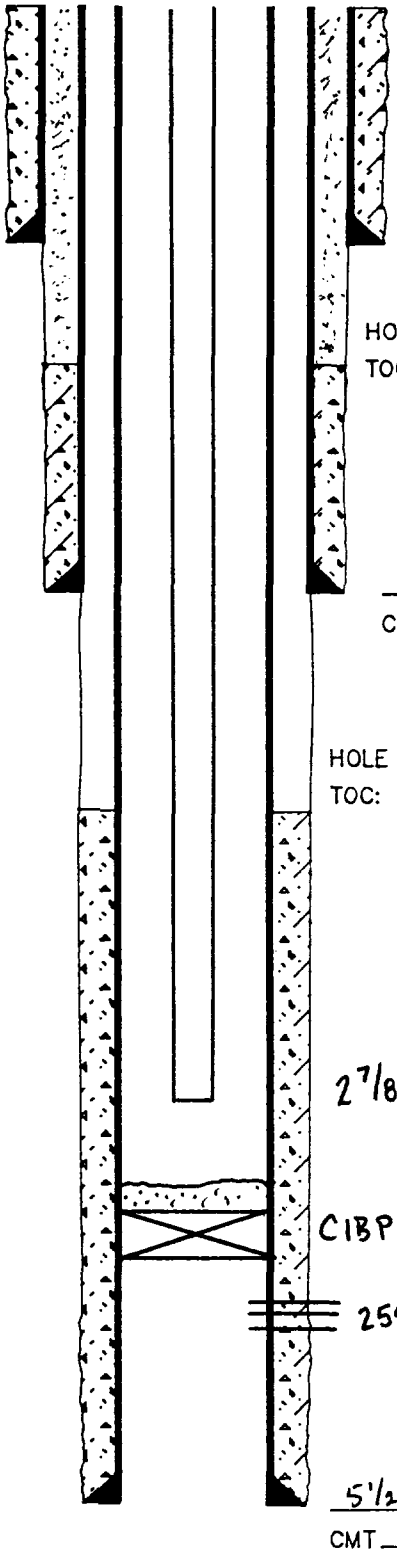
2/83 Perf Morrow 11376 - 11384 (17 shots)
Set CIBP at 11360' + cap w/ 35' of cement.
Perf Morrow 10856 - 11284' w/ 182 shots
Acidize w/ 9000 gals. 7 1/2 % HCL
Frac w/ 100,000 gals. fluid + 140,000 # of 20/40 sand.
Drill out CIBP at 11360'.
Squeeze perfs 11376' - 11384'
Perf Morrow 11442' - 11494' (46 shots)

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 3229 ', 13 ' ABOVE GL

LEASE & WELL NAME: YATES "C" FEDERAL #14
FIELD: AVALON DELAWARE COUNTY: EDDY ST.: NM
LOCATION: 660' FSL & 660' FEL of Sec. 31, T20S, T28E

DATE: 11/30/90 BY: KPJ REV.: BY:



TD: 3891 ' PBD: 2480 '

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET AT
13 3/8	48	K-55	590'
8 5/8	24	K-55	2493'

PRODUCTION CASING

5 1/2	14	K-55	3891'

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.	SET AT
83	2 7/8					2300

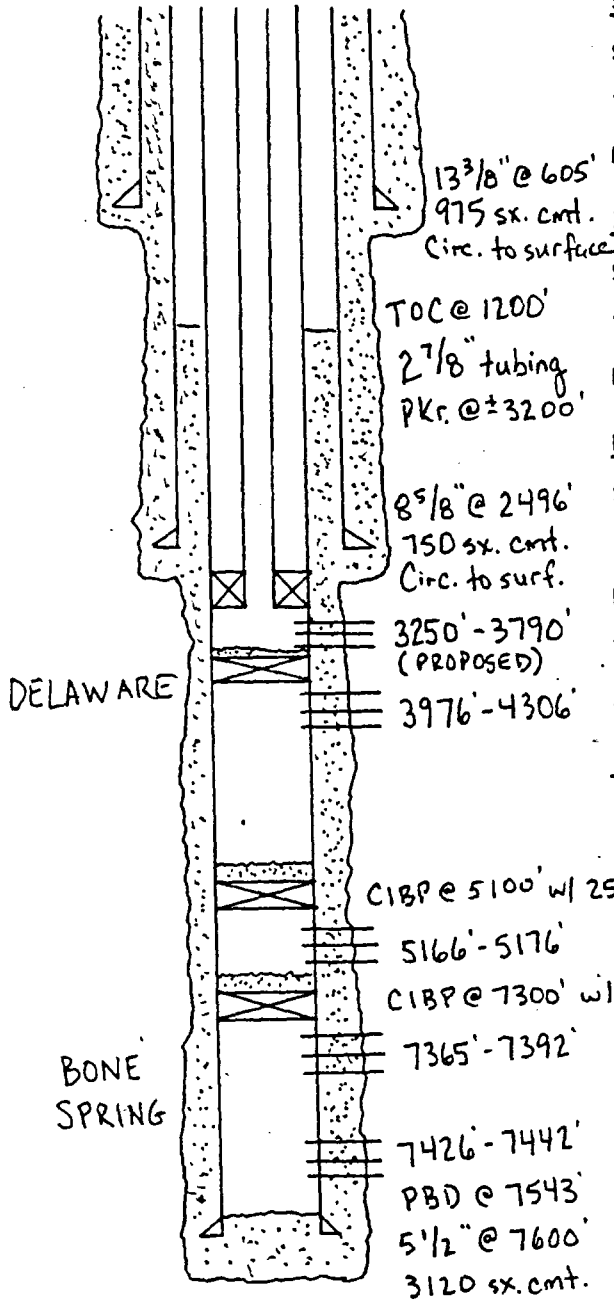
WELL HISTORY:

9/27/83 SPUD
10/16/83 Perf 2598'-2606', 2624'-2636' 1 spf
Break down perfs w/ 1100 gals. 3% KCL
Frac w/ 32,000 gals 75% foam, 18000# 20/40 sand + 16,000# 10/20 sand
4/10/84 Clean out, dissolve gyp scale, inhibit
3/27/90 Unseat pump, lay down rods.
Set CIBP at 2500' w/ 20' cement on top
Temporarily abandon well
2 7/8" tubing to 2300'

INJECTION WELL DATA SHEET

Exxon Corporation	Yates "C" Federal			
OPERATOR	LEASE			
22	5940' FSL & 660' FWL	4	21S	27E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tubular Data

Surface Casing

Size 13 3/8 " Cemented with 975 sx.

TOC Surface feet determined by Circ.

Hole size 17 1/2"

Intermediate Casing

Size 8 5/8 " Cemented with 750 sx.

TOC Surface feet determined by Circ.

Hole size 11"

Long string

Size 5 1/2 " Cemented with 3120 sx.

TOC 1200 feet determined by Temp. Survey

Hole size 7 7/8"

Total depth 7600'

Injection interval

3250 feet to 3790' feet

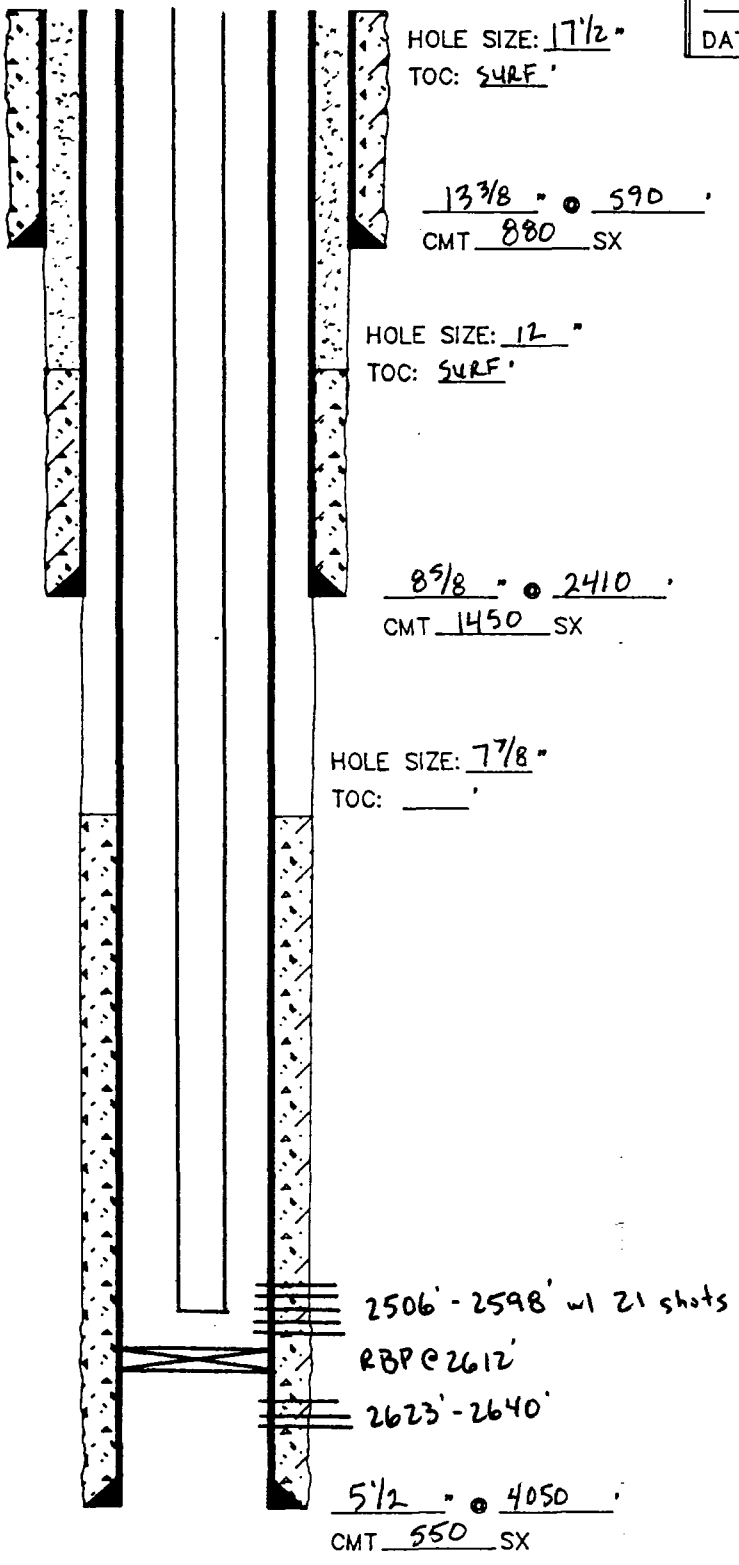
(perforated or open-hole, indicate which)

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 3226', 12' ABOVE GL

LEASE & WELL NAME: Hondo "A" State #3
FIELD: Avalon Delaware COUNTY: Eddy ST.: NM
LOCATION: 1980' FSL + 610' FWL, Sec 32, T20S, R28E

DATE: 11/30/90 BY: KPJ REV.: BY:



TD: 4050' PBD: 2612'

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET AT
13 3/8	48	H-40	590'
8 5/8	28, 32	K-55	2410'

PRODUCTION CASING

5 1/2	14	J-55	4050'

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.	SET AT
	2 7/8					

WELL HISTORY:

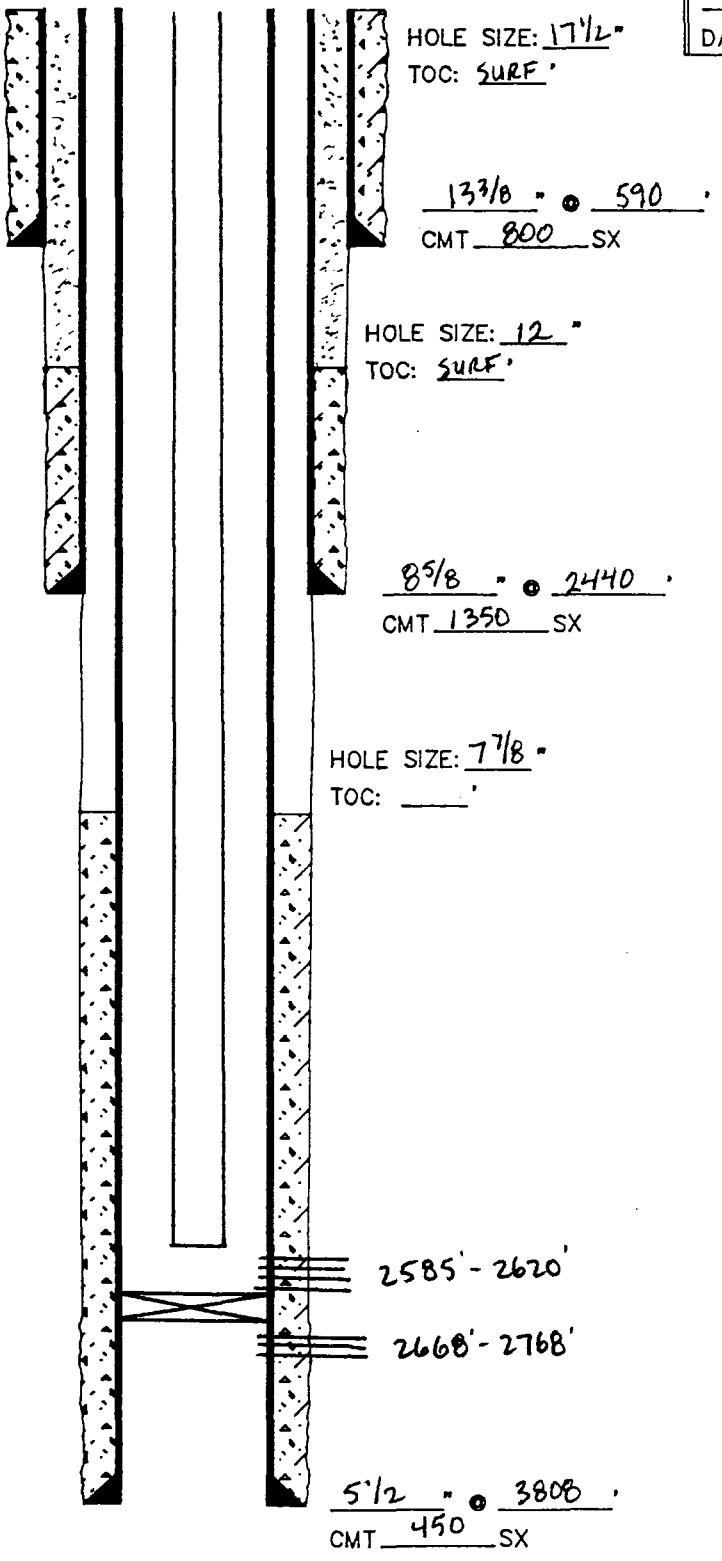
4/19/83 SPUD
5/16/83 Perf 2623'-2640'
Set RBP at 2612'
Perf 2506'-2598' w/ 21 holes
Acidize w/ 2500 gals EQH 152
Frac w/ 60,000 gals of 75 quality foam + 45,000# 20/40 sand + 30,000# of 10/20 sand

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 3212', 12' ABOVE GL

LEASE & WELL NAME: HONDO "A" STATE #4
FIELD: AVALON DELAWARE COUNTY: EDDY ST.: NM
LOCATION: 660' FSL, 330' FWL, SEC. 32, T20S, T28E

DATE: 11/30/90 BY: KPJ REV.: BY:



TD: 3808' PBD: 2650'

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET AT
13 3/8	48	H-40	590'
8 5/8	24	K-55	2440'

PRODUCTION CASING

5 1/2	15.5	K-55	3808'

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.	SET AT
	2 7/8					

WELL HISTORY:

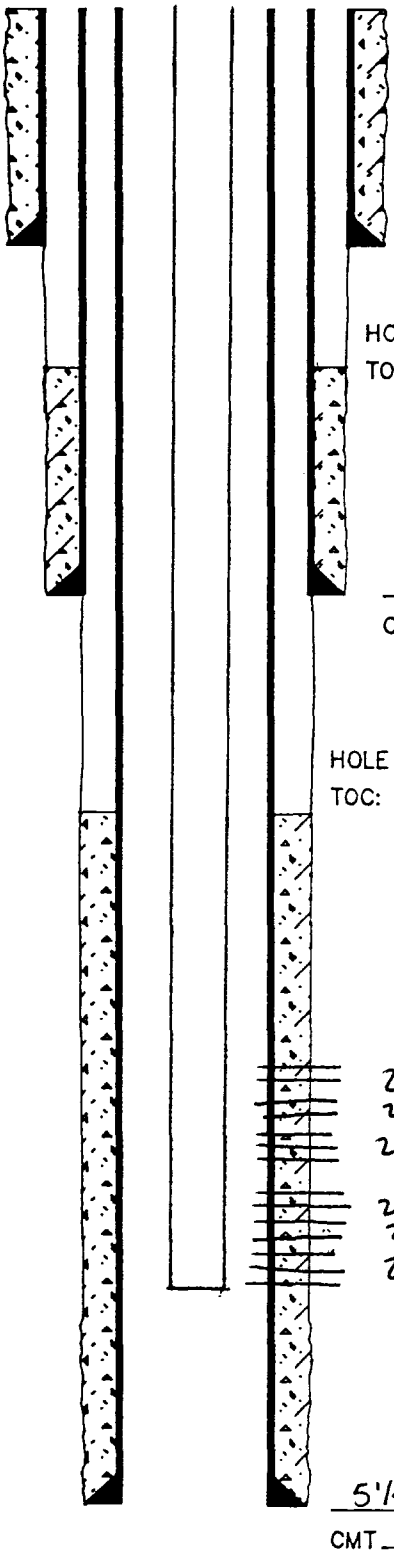
5/3/83 SPUD
6/9/83 Perf 2585'-2620' w/ 14 shots
Acidize w/ 2100 gals. EQH-152
Perf 2668'-2768'
Set CIBP at 2660'

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 3222 ', 12 ' ABOVE GROUND LEVEL

LEASE & WELL NAME: HONDO FEE #2
FIELD: AVALON DELAWARE COUNTY: EDDY ST.: NM
LOCATION: Unit K, Sec 32, T20S, T28E

DATE: 11/30/90 BY: KPJ REV.: BY:



HOLE SIZE: ____ "
TOC: SURF '

13 3/8 " @ 588 '
CMT ____ SX

HOLE SIZE: ____ "
TOC: SURF '

8 5/8 " @ 2422 '
CMT ____ SX

HOLE SIZE: ____ "
TOC: 2120 '

2542' - 2556'
2564' - 2576'
2602' - 2612'
2628' - 2640'
2640' - 2660'
2680' - 2700'

5 1/2 " @ 2813 '
CMT ____ SX

TD: 2813 ' PBD: 2722 '

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET AT
13 3/8	48	K-55	588'
8 5/8	24	K-55	2422'

PRODUCTION CASING

5 1/2	14	K-55	2813'

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.	SET AT
	2 7/8	EUE		6.5	J-55	

WELL HISTORY:

SPUD
7/83 Perf 2602'-2612' + 2628'-2640'
Acidize w/ 15% HCL - 2000 gals.
Frac w/ 18,000 gals. of 50% KCL + 50% Methanol + 6000 gals CO_2 + 12,000 # 20/40 sand + 6000 # 10/20 sand
Perf 2542'-2556'
Acidize w/ 2000 gals. of 15% HCL

9/89 Perf 2680'-2700' w/ 1spf
Acidized w/ 1000 gals 15% HCL
Perf 2564'-2576' + 2640'-2660'
Frac w/ 228 bbls

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

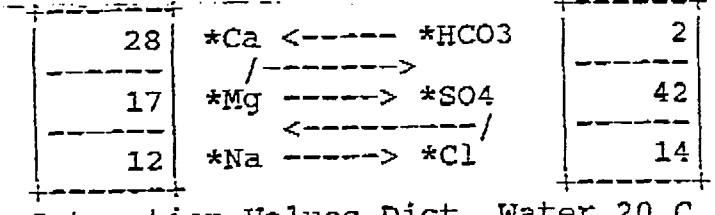
Company : EXXON
Address : HOBBS, NM
Lease : YATES C FEDERAL
Well :
Sample Pt. : KAY HOOD'S WATER WEL

Date : 12-03-90
Date Sampled : 11-30-90
Analysis No. : 91

	ANALYSIS		mg/L		* meq/L
1.	pH	7.1			
2.	H2S	NEGATIVE			
3.	Specific Gravity	1.005			
4.	Total Dissolved Solids		3624.9		
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2				
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		80.0		
11.	Bicarbonate	HCO3	97.6	HCO3	1.6
12.	Chloride	Cl	482.0	Cl	13.6
13.	Sulfate	SO4	2000.0	SO4	41.6
14.	Calcium	Ca	557.1	Ca	27.8
15.	Magnesium	Mg	201.8	Mg	16.6
16.	Sodium (calculated)	Na	286.1	Na	12.4
17.	Iron	Fe	0.2		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		2222.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter



Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	1.6	130
CaSO4	68.1	26.2	1783
CaCl2	55.5		
Mg(HCO3)2	73.2		
MgSO4	60.2	15.4	930
MgCl2	47.6	1.2	55
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	12.4	727

Saturation Values Dist. Water 20 C
CaCO3 13 mg/L
CaSO4 * 2H2O 2090 mg/L
BaSO4 2.4 mg/L

REMARKS: 1 MILE RADIUS OF DISPOSAL WELL
CC: JIM McBEE / S. BENNETT / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
B. CROSSLEY

PETROLITE

SCALE TENDENCY REPORT

Company	: EXXON	Date	: 12-03-90
Address	: HOBBS, NM	Date Sampled	: 11-30-90
Lease	: YATES C FEDERAL	Analysis No.	: 91
Well	:	Analyst	: B. CROSSLEY
Sample Pt.	: KAY HOOD'S WATER WEL		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	-0.0	at	60 deg. F or	16	deg. C
S.I. =	0.0	at	80 deg. F or	27	deg. C
S.I. =	0.0	at	100 deg. F or	38	deg. C
S.I. =	0.1	at	120 deg. F or	49	deg. C
S.I. =	0.1	at	140 deg. F or	60	deg. C

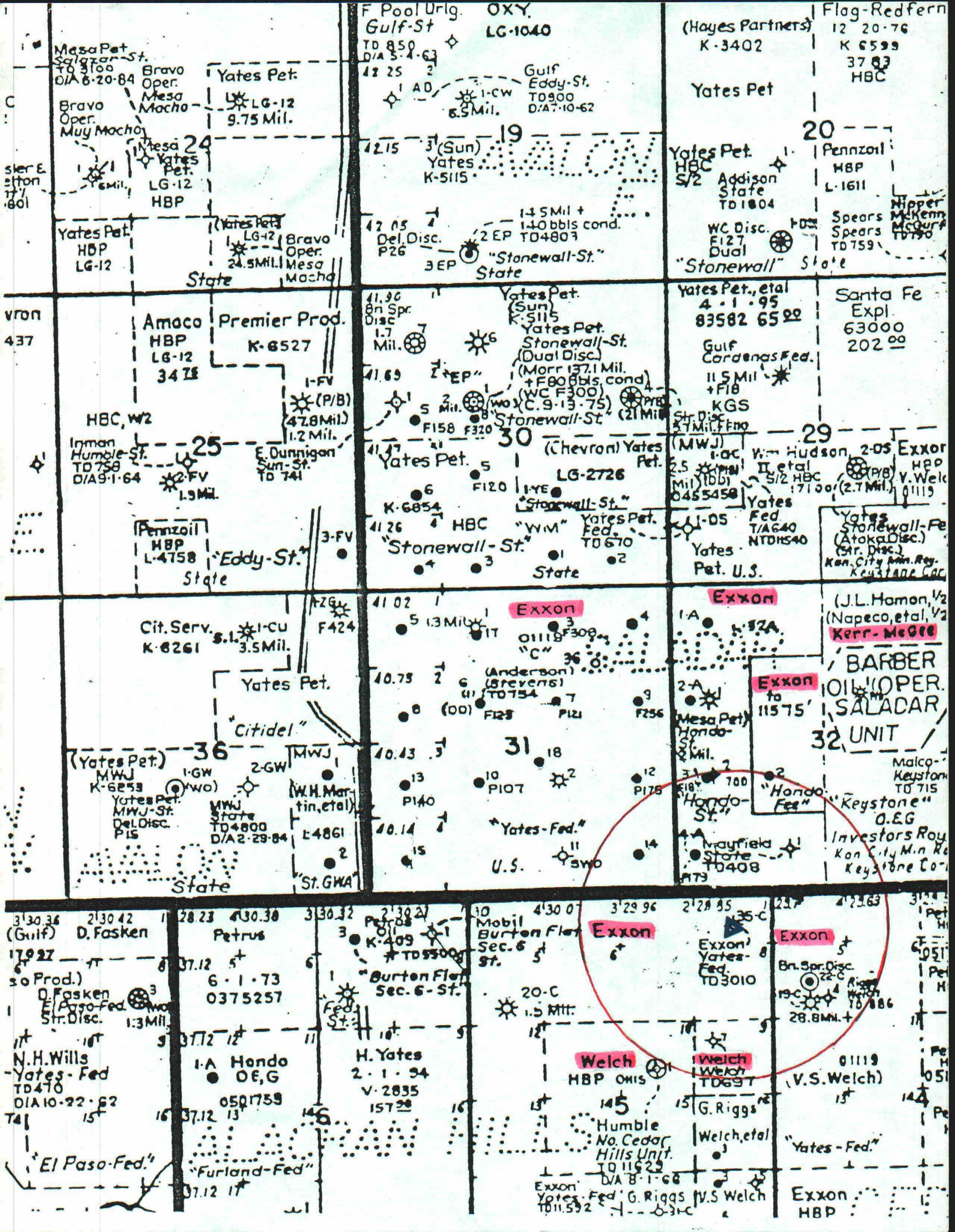
****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	1606	at	60 deg. F or	16	deg C
S =	1671	at	80 deg. F or	27	deg C
S =	1691	at	100 deg. F or	38	deg C
S =	1683	at	120 deg. F or	49	deg C
S =	1668	at	140 deg. F or	60	deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
B. CROSSLEY



F Pool Urlg.
Gulf-St
OXY
LG-1040
Flag-Redfern
(Hayes Partners)
K-3402
12 20-76
K 6599
HBC
Mesa Pet
Salazar-St.
D/A 6-20-84
Bravo Oper.
Mesa Macho
Yates Pet.
LG-12
9.75 Mil.
Bravo Oper.
Muy Macho
Mesa Yates Pet.
LG-12
HBP
Gulf
Eddy-St.
TD900
D/A 7-10-62
6.5 Mil.
Yates Pet
19
20
(Sun)
Yates
K-5115
Yates Pet.
HBC
S/2
Addison State
TD 1804
Pennzoil
HBP
L-1611
Yates Pet.
HBP
LG-12
Bravo Oper.
Mesa Macho
24.5 Mil.
State
Del. Disc.
P26
2 EP TD4807
1.45 Mil + 140 bbls cond.
"Stonewall-St."
State
WC Disc.
F127
Dual
"Stonewall"
State
Spears
TD 759
Amoco
HBP
LG-12
Premier Prod.
K-6527
Yates Pet.
(Sun)
K-5115
Yates Pet.
Stonewall-St.
(Dual Disc.)
(Morr 137.1 Mil. + F80 bbls cond.)
(WC F300)
(C. 9-13-75)
Stonewall-St.
Yates Pet., etal
4-1-95
83582 65.00
Santa Fe Expl
63000
202.00
Gulf
Cardenas Fed.
11.5 Mil
+F18
KGS
Bn. Spr. Disc
1.7 Mil.
HBC, W/2
1-FV
(P/B)
(47.8 Mil.)
1.2 Mil.
F158
F320
30
25
29
Inman
Humble-St.
TD 758
D/A 9-1-64
2-FV
1.9 Mil.
E. Dunnigan
Sun-St.
TD 741
Yates Pet.
K-6854
HBC
(Chevron) Yates Pet.
LG-2726
"Stonewall-St."
"WM"
Yates Pet.
Fed.
TD 670
State
(MWJ)
1-OC
0455458
Yates Fed.
T/A 640
NTD 11540
Yates Pet. U.S.
Wm Hudson, II, etal
S/2 HBC
(2.7 Mil.)
2-05
Exxon
HBP
V. Welch
Yates
Stonewall-Fed
(Atoka Disc.)
(Str. Disc.)
Kan. City Min. Roy.
Keystone Co.
Pennzoil
HBP
L-4758
"Eddy-St."
State
3-FV
"Stonewall-St."
Exxon
Exxon
Cit. Serv.
K-6261
1-CU
3.5 Mil.
F424
1.3 Mil.
0119
F300
"C"
36
(J.L. Hamon, 1/2)
(Napeco, etal, 1/2)
Kerr-McGee
BARBER OIL OPER.
SALADAR UNIT
Yates Pet.
"Citidel"
(Anderson)
(Stevens)
TD 754
F123
P121
F256
Exxon
to 11575'
(Mesa Pet)
Hondo-St.
2 Mil.
32
31
(Yates Pet.)
MWJ
K-6253
1-GW
(WO)
2-GW
Yates Pet.
MWJ-St.
Del Disc.
P15
MWJ
State
TD 4800
D/A 2-29-84
MWJ
(W.H. Martin, etal)
L 4861
P140
P107
P175
"Yates-Fed."
U.S.
SWD
"Hondo-St."
"Hondo Fed"
Mayfield State
TD 408
Malco-Keystone
TD 715
"Keystone"
O.E.G
Investors Roy.
Kan City Min Ro
Keystone Co.
State
"St. GWA"
(Gulf)
D. Fasken
Petrus
6-1-73
0375257
Pet. Oil
K-409
TD 5500
"Burton Flat
Sec. 6-St."
Mobil
Burton Flat
Sec. 6
St.
Exxon
Exxon
Yates-Fed.
TD 3010
Exxon
Bn. Spr. Disc.
Riggs
Welch
TD 886
28.8 Mil.
D. Fasken
El Paso-Fed.
Str. Disc.
1.3 Mil.
20-C
1.5 Mil.
N.H. Wills
Yates-Fed
TD 410
D/A 10-22-62
1-A
Hondo
OE,G
0501759
H. Yates
2-1-94
V-2835
157.38
Welch
HBP
Welch
Welch
TD 697
0119
(V.S. Welch)
5
6
G. Riggs
Humble
No. Cedar Hills Unit
TD 11623
D/A 8-1-68
Welch, etal
"Yates-Fed."
"El Paso-Fed."
"Furland-Fed"
Exxon
Yates-Fed
TD 11,592
G. Riggs
V.S. Welch
Exxon
HBP

Copies of NMOCD Form C-108 were sent to the following by Certified mail on 3-27-91.

Offset Operators

Kerr-McGee Corp.
3 NorthPoint Dr., Ste. 100
Houston, TX 77060

J. M. Welch
P. O. Box 4596
Artesia, NM 88210

Exxon Corporation
Houston, Texas

Surface Owner

Bureau of Land Management
Roswell Area Resource Office
P. O. Box 1397
Roswell, NM 88201

Marsha Wilson
Environmetal and Regulatory Affairs

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

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

April 12, 1991

Salt Water Disposal Application
Yates Federal "C" #35
Eddy County, New Mexico

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

Attention Mike Catanach

Attached are the newspaper clipping and affidavit of publication for the Yates Federal "C" #35 injection application previously submitted to you on March 28, 1991.

If there are any questions, please call (915) 688-7552.

Sincerely,

Marsha Wilson

Marsha Wilson
Regulatory Affairs

\mw
Attachment

№ 13160

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:

April 3 , 19 91

, 19 ____

, 19 ____

, 19 ____

that the cost of publication is $ 9.41 , and that payment thereof has been made and will be assessed as court costs.

E C Cantwell

Subscribed and sworn to before me this

3rd day of April , 19 91

Donella Taylor

My commission expires 06-01-92
Notary Public

April 3, 1991

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" #36. The well is located 563' FNL and 560' FEL of Section 5, T21S, R27E, Eddy County, New Mexico. The disposal zone will be the Delaware formation from 2702' to 3100'. The maximum injection rate will be 1600 barrels per day; the maximum pressure will be 540 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

APR 12 91

NMOCD Permits

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