

MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

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April 15, 1991

New Mexico Energy & Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: David Catanach

Dear Mr. Catanach,

Enclosed please find our application for authorization to inject for the Humble Hobbs Federal #1 located in Section 24-20S-24E of Eddy County.

The affidavit of publication will be forwarded to you as soon as it becomes available.

Sincerely,

Paul Ragsdale
Petroleum Engineer

PR/sj

Enclosure

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Yates Petroleum Corporation

Address: 105 S. 4th Street Artesia, NM 88210

Contact party: Paul Ragsdale Phone: (505)748-1471

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: Paul Ragsdale Title: Petroleum Engineer

Signature: *Paul Ragsdale* Date: 4-15-91

* 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.

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.

C-108
Application For Authorization To Inject
Yates Petroleum Corporation
Humble Hobbs Federal #1
P 24-20S-24E
Eddy County, New Mexico

- I. The purpose of completing this well is to make a disposal well for produced Dagger Draw water into the Canyon, Morrow, Devonian, and Ellenburger formations.
- II. Operator: Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
Paul Ragsdale (505) 748-1471
- III. Well Data: See Attachment A
- IV. This is not an expansion of an existing project.
- V. See attached map, Attachment B
- VI. Tabulation of all wells within half-mile of well.
(See Attachment C)
- VII.
 1. Proposed average daily rate - 7500 BWPD
Maximum daily rate - 15000 BWPD
 2. This will be a closed system.
 3. Proposed average injection pressure - 2000 psi.
Proposed maximum injection pressure - 3000 psi.
 4. Sources of injection fluid - Dagger Draw
(Attachment D)
 5. Chemical analysis of proposed zone
(Attachment E)
- VIII.
 1. The proposed injection intervals are the Canyon, Morrow, Devonian, and Ellenburger zones from 7500-11580'. The Canyon lime/dolomite will be perforated from 7500-7600'. The Morrow sand is perforated from 9336-9426'. The Devonian and Ellenburger dolomites will be "open-hole" from 9600-11580'.
 2. The known fresh water zone is from the surface to 300 feet from the San Andres Aquifers. There are no underlying fresh water aquifers.

C-108

Application for Authorization to Inject

Humble Hobbs Federal #1

-2-

- IX. The proposed disposal interval may be acidized with 20,000 gallons of 20% HCL acid.
- X. Well logs and DST's have been previously submitted to the NMOCD. If new logs are run, these will be submitted also.
- XI. No windmills exist within a one mile radius of the subject location, however, there is a fresh water well within a one mile radius. The location of this well is indicated on the attached map. (Attachment F) A water analysis is also attached. (Attachment G)
- XII. Yates Petroleum Corporation has examined available engineering and geologic data and has found no evidence of open faults or hydrologic connections between the disposal zone and any underground drinking water.
- XIII. Proof of Notice
 - A. Certified letters sent to the surface owner and offset operators-attached. (Attachment H)
 - B. Copy of legal advertisement attached. (Attachment I)
- XIV. Certification is signed.

Yates Petroleum Corporation
Humble Hobbs Federal #1
P 24-20S-24E

Attachment A

Page 1

III. Well Data

- A. 1. Lease Name/Location:
Humble Hobbs Federal #1
P 24-20S-24E
660' FSL & 660' FEL

2. Casing Strings:

<u>Casing</u>	<u>Depth</u>	<u>Sx Cement</u>	<u>Hole Size</u>	<u>TOC</u>
13-3/8"	423'	425		Circ
9-5/8"	4010'	1400	12-1/4"	*
7"	7768'	500	8-3/4"	3500'
5-1/2"	9600'	350	8-3/4"	**

* 9-5/8" cut off at 804'

** 5-1/2" cut off at 7768'

3. Proposed well condition:
Casing same as above
3 1/2" J55, EVE, 9.3 lb. tubing liner with
plastic coating @ 7450'

4. Propose to use 7" Guiberson UNI-VI nickel-
coated packer set at 7450'.

- B. 1. Injection Formation: Canyon, Morrow, Devonian,
and Ellenburger

2. Injection Interval:

- a. Canyon 7500- 7600' perforated
b. Morrow 9336- 9426' perforated
c. Devonian 10257-11206' open hole
d. Ellenburger 11206-11580' open hole

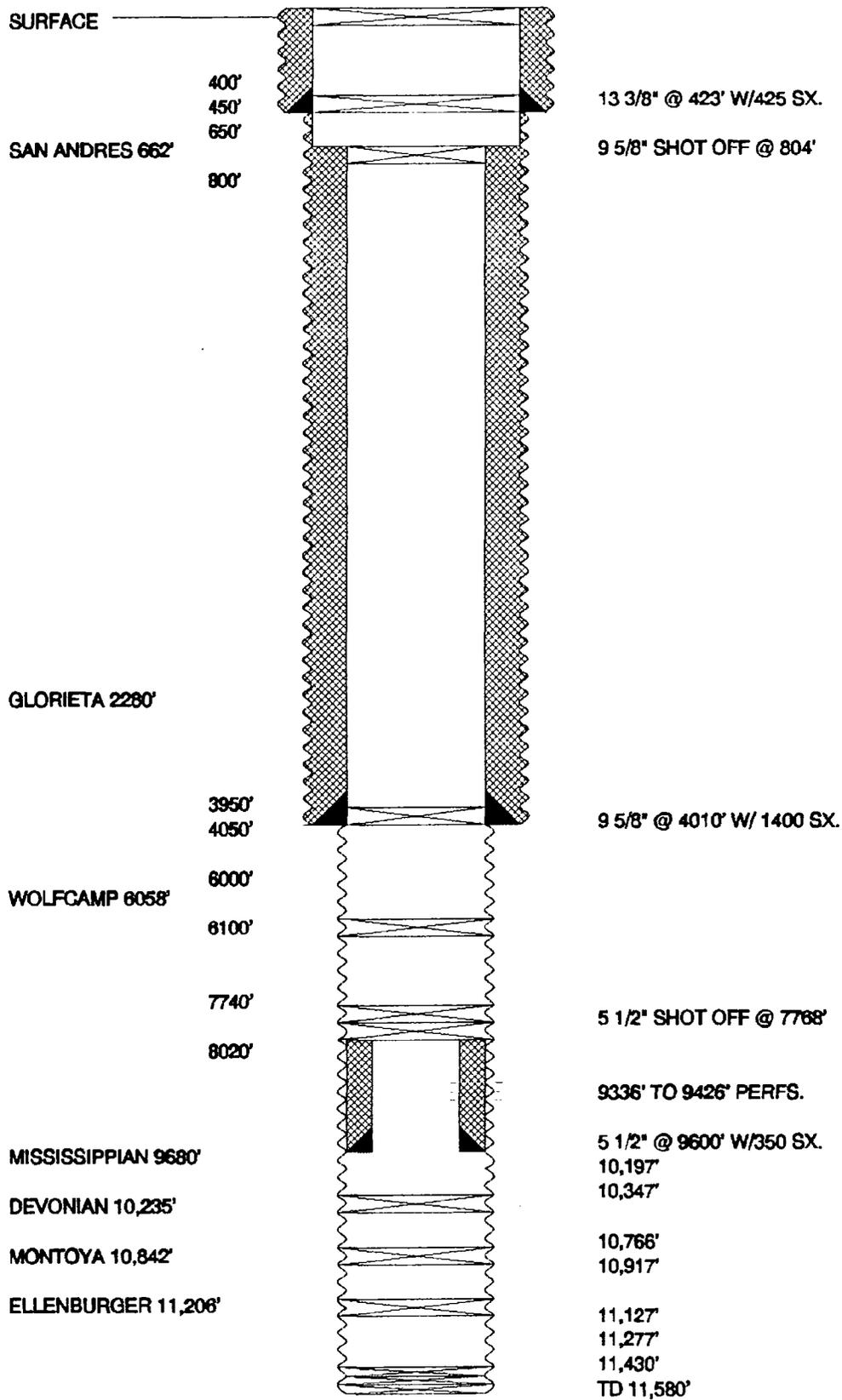
3. Well was originally drilled for production.

4. Perforations:
9336-9426'

5. Next higher (shallower) oil or gas zone within
2 miles--Canyon
Next lower (deeper) oil or gas zone within 1/2
mile--Morrow

YATES PETROLEUM CORP.

HUMBLE HOBBS FED. #1
 SEC. 24-T20S-R24E
 660' FSL & 660' FEL
 DIAGRAMATIC SKETCH OF
 EXISTING WELLBORE COMPLETIONS



YATES PETROLEUM CORP.

HUMBLE HOBBS FED. #1

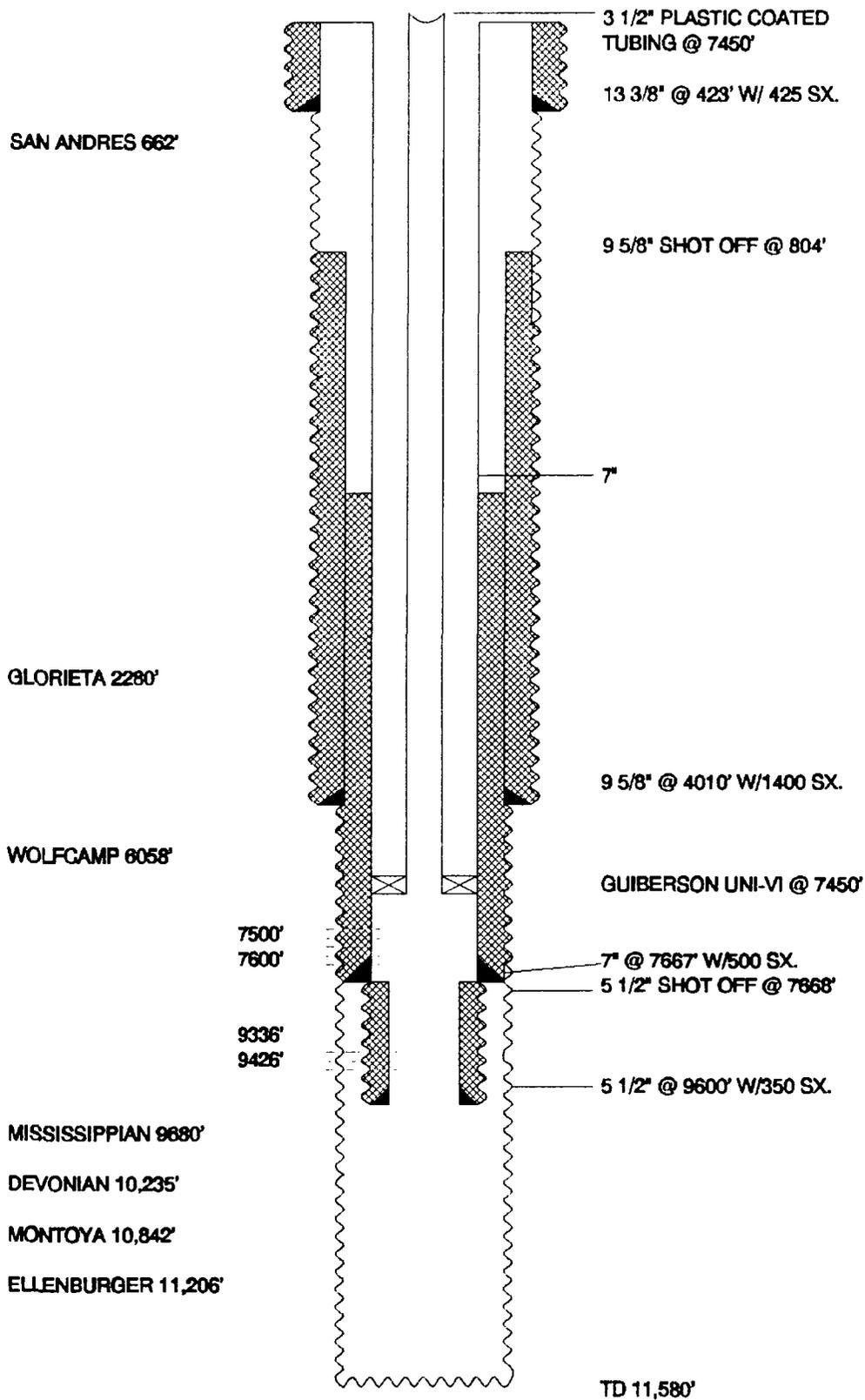
SEC. 24-T20S-R24E

660' FSL & 660' FEL

DIAGRAMATIC SKETCH OF

PROPOSED WELLBORE

COMPLETIONS



ATTACHMENT B

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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ATTACHMENT D

HALLIBURTON DIVISION LABORATORY
 HALLIBURTON SERVICES
 MIDLAND DIVISION
 ARTESIA, NEW MEXICO 88210
 LABORATORY WATER ANALYSIS

No. W65, W66, & W67-88

To Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210

Date _____

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or persons and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. _____

Well No. _____ Depth _____ Formation _____

County _____ Field _____ Source _____

	<u>Ross EC Fed. #2</u>	<u>Foster AN Com. #1</u>	<u>Parish IV Comm.</u>
Resistivity91 @ 60°	.9 @ 60°	.89 @ 60°
Specific Gravity	1.005 @ 60°	1.005 @ 60°	1.005 @ 60°
pH	7.5	7.3	7.0
Calcium (Ca)	1,000	1,000	1,000 *MPL
Magnesium (Mg)	600	500	650
Chlorides (Cl)	4,000	5,000	5,000
Sulfates (SO ₄)	Heavy	Heavy	Heavy
Bicarbonates (HCO ₃)	1,200	1,000	1,100
Soluble Iron (Fe)	Nil	Nil	Nil
.....			
.....			
.....			

Remarks: _____ *Milligrams per liter

Respectfully submitted,

Analyst: Art Carrasco - District Engineer
 cc:

HALLIBURTON COMPANY

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

WATER ANALYSIS REPORT

COMPANY Yates Petroleum Company ADDRESS Artesia, N.M. DATE 4-23-87
 SOURCE State "CO" Disposal DATE SAMPLED 3-18-87 ANALYSIS NO. 168
 Analysis Mg/L *Meq/L

1. pH 7.0
 2. H₂S (Qualitative) Pos.
 3. Specific Gravity 1.005
 4. Dissolved Solids 7,072
 5. Suspended Solids _____
 6. Phenolphthalein Alkalinity (CaCO₃) 40
 7. Methyl Orange Alkalinity (CaCO₃) 0
 8. Bicarbonate (HCO₃) HCO₃ 342 ÷ 61 5.6 HCO₃
 9. Chlorides (Cl) Cl 2,046 ÷ 35.5 58 Cl
 10. Sulfates (SO₄) SO₄ 2,250 ÷ 48 47 SO₄
 11. Calcium (Ca) Ca 368 ÷ 20 18 Ca
 12. Magnesium (Mg) Mg 80 ÷ 12.2 7 Mg
 13. Total Hardness (CaCO₃) 1,250
 14. Total Iron (Fe) 36 ppm
 15. Barium (Qualitative)
 16. Strontium
- *Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
18	Ca (HCO ₃) ₂	81.04		5.6		454
7	Ca SO ₄	68.07		12		817
86	Ca Cl ₂	55.50				
	Mg (HCO ₃) ₂	73.17				
	Mg SO ₄	60.19		7		421
	Mg Cl ₂	47.62				
	Na HCO ₃	84.00				
	Na ₂ SO ₄	71.03		28		1,989
	Na Cl	58.46		58		3,391

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">18</td><td style="text-align: center;">Ca</td><td style="text-align: center;">←</td><td style="text-align: center;">HCO₃</td><td style="text-align: center;">→</td><td style="text-align: center;">5.6</td></tr> <tr><td style="text-align: center;">7</td><td style="text-align: center;">Mg</td><td style="text-align: center;">←</td><td style="text-align: center;">SO₄</td><td style="text-align: center;">→</td><td style="text-align: center;">47</td></tr> <tr><td style="text-align: center;">86</td><td style="text-align: center;">Na</td><td style="text-align: center;">←</td><td style="text-align: center;">Cl</td><td style="text-align: center;">→</td><td style="text-align: center;">58</td></tr> </table>	18	Ca	←	HCO ₃	→	5.6	7	Mg	←	SO ₄	→	47	86	Na	←	Cl	→	58	Saturation Values Distilled Water 20°C Ca CO ₃ 13 Mg/L Ca SO ₄ • 2H ₂ O 2,090 Mg/L Mg CO ₃ 103 Mg/L	
18	Ca	←	HCO ₃	→	5.6															
7	Mg	←	SO ₄	→	47															
86	Na	←	Cl	→	58															

REMARKS Allison (4) - Stenzel - File

ATTACHMENT C

Humble Hobbs Federal #1
Form C-108

Tabulation of Data on Wells Within Area of Review

Well Name	Operator	Type	Spud	Completed	Total Depth	Producing Zone	Perforations	Completion Information
Federal Hobbs Water Well #1 A 25-20S-24E	Humble Oil	Water	11/10/49	11/15/49	240'			8-5/8" @ 240' 4" tubing @ 236'
Charolette McKay #1 H 25-20S-24E	McKay Oil	Gas	12/13/79	2/27/80	9690'	Atoka	8884-8994'	20" @ 35' w/3 yards Redimix 13-3/8" 54.5# @ 355' w/520 sx 8-5/8" 24# @ 2000' w/980 sx 5-1/2" 17# @ 9690' w/650 sx 2-7/8" tubing @ 8840'

PETROLITE OILFIELD CHEMICALS GROUP
ARTESIA, NEW MEXICO
WATER ANALYSIS REPORT

COMPANY NAME : VATES PETROLEUM
LEASE NAME : STATE 1001 SWD
SAMPLE POINT : UPSTREAM OF PUMP
SAMPLE DATE : 10-9-87

PH = 8.00
SAMPLE TEMP. = N/A
H2S (QUALITATIVE) = POS.
SPECIFIC GRAVITY = 1.000

TITRATED AND CALCULATED IONS

HC03 (MG/LTR) =	1025.00	HC03 (MEQ/LTR) =	16.80
CL (MG/LTR) =	3025.00	CL (MEQ/LTR) =	85.21
SO4 (MG/LTR) =	2000.00	SO4 (MEQ/LTR) =	41.66
CA (MG/LTR) =	600.00	CA (MEQ/LTR) =	30.00
MG (MG/LTR) =	131.00	MG (MEQ/LTR) =	10.73
NA (MG/LTR) =	2392.00	NA (MEQ/LTR) =	104.00

IONIC STRENGTH = 0.18
TOTAL HARDNESS = 2009.00
TOTAL DISSOLVED SOLIDS = 3147.31
TOTAL IRON (FE) = 0.0

CA(HC03)2 (MG/LTR) =	1361.73	CA(HC03)2 (MEQ/LTR) =	16.80
CA(S04) (MG/LTR) =	898.30	CA(S04) (MEQ/LTR) =	13.19
CA(CL2) (MG/LTR) =	0.0	CA(CL2) (MEQ/LTR) =	0.0
MG(HC03)2 (MG/LTR) =	0.0	MG(HC03)2 (MEQ/LTR) =	0.0
MG(S04) (MG/LTR) =	646.30	MG(S04) (MEQ/LTR) =	10.73
MG(CL2) (MG/LTR) =	0.0	MG(CL2) (MEQ/LTR) =	0.0
NAHC03 (MG/LTR) =	0.0	NAHC03 (MEQ/LTR) =	0.0
NA2S04 (MG/LTR) =	1259.52	NA2S04 (MEQ/LTR) =	17.73
NACL (MG/LTR) =	4981.45	NACL (MEQ/LTR) =	85.21

CALCULATED SCALING TENDENCIES

SCALING INDEX

CA(C03) @ 80 DEG F = 1.90
CA(C03) @ 120 DEG F = 2.30

SATURATION POINT

CA(S04) @ 70 DEG F (MG/LTR) = 3494.52
CA(S04) @ 110 DEG F (MG/LTR) = 3541.99
THIS SAMPLE CONTAINED 898.30 MG/LTR

PETROLEUM OILFIELD CHEMICALS GROUP
ARTESIA, NEW MEXICO
WATER ANALYSIS REPORT

COMPANY NAME : YATES PETROLEUM
LEASE NAME : STATE 22
SAMPLE POINT : UPSTREAM
SAMPLE DATE : 12-8-87

PH = 8.00
SAMPLE TEMP. = N/A
H2S (QUALITATIVE) = POS.
SPECIFIC GRAVITY = 1.000

TITRATED AND CALCULATED IONS

HCO3 (MG/LTR) =	1135.00	HCO3 (MEG/LTR) =	13.60
CL (MG/LTR) =	3195.00	CL (MEG/LTR) =	90.00
SO4 (MG/LTR) =	2000.00	SO4 (MEG/LTR) =	41.66
CA (MG/LTR) =	632.00	CA (MEG/LTR) =	31.60
MG (MG/LTR) =	126.00	MG (MEG/LTR) =	10.32
NA (MG/LTR) =	2507.00	NA (MEG/LTR) =	100.00

IONIC STRENGTH = 0.19
TOTAL HARDNESS = 2008.52
TOTAL DISSOLVED SOLIDS = 9578.44
TOTAL IRON (FE) = 0.0

CA(HCO3)2 (MG/LTR) =	1507.97	CA(HCO3)2 (MEG/LTR) =	13.60
CA(SO4) (MG/LTR) =	334.46	CA(SO4) (MEG/LTR) =	12.29
CA(CL)2 (MG/LTR) =	0.0	CA(CL)2 (MEG/LTR) =	0.0
MG(HCO3)2 (MG/LTR) =	0.0	MG(HCO3)2 (MEG/LTR) =	0.0
MG(SO4) (MG/LTR) =	621.63	MG(SO4) (MEG/LTR) =	10.32
MG(CL)2 (MG/LTR) =	0.0	MG(CL)2 (MEG/LTR) =	0.0
NAHCO3 (MG/LTR) =	0.0	NAHCO3 (MEG/LTR) =	0.0
NA2SO4 (MG/LTR) =	1303.67	NA2SO4 (MEG/LTR) =	10.34
NACL (MG/LTR) =	5261.48	NACL (MEG/LTR) =	90.00

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F = 1.97
CaCO3 @ 120 DEG F = 2.37

SATURATION POINT

CaSO4 @ 70 DEG F (MG/LTR) = 3433.60
CaSO4 @ 110 DEG F (MG/LTR) = 3481.17
THIS SAMPLE CONTAINED 334.46 MG/LTR

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	: YATES PETROLEUM	Date	: 4-11-91
Address	: ARTESIA, NEW MEXICO	Date Sampled	: 4-10-91
Lease	: S-25-T20S-R24-E	Analysis No.	: 443
Well	: FRESH WATER		
Sample Pt.	: UNKNOWN		

ANALYSIS		mg/L		* meq/L
-----		----		-----
1. pH	7.0			
2. H2S	NEGATIVE			
3. Specific Gravity	1.000			
4. Total Dissolved Solids		3071.2		
5. Suspended Solids				
6. Dissolved Oxygen				
7. Dissolved CO2				
8. Oil In Water				
9. Phenolphthalein Alkalinity (CaCO3)				
10. Methyl Orange Alkalinity (CaCO3)				
11. Bicarbonate	HCO3	244.0	HCO3	4.0
12. Chloride	Cl	277.0	Cl	7.8
13. Sulfate	SO4	1800.0	SO4	37.5
14. Calcium	Ca	952.0	Ca	47.5
15. Magnesium	Mg	272.7	Mg	22.4
16. Sodium (calculated)	Na	-474.5	Na	-20.6
17. Iron	Fe	0.0		
18. Barium	Ba	0.0		
19. Strontium	Sr	0.0		
20. Total Hardness (CaCO3)		3500.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt X meq/L	=	mg/L
-----		-----	-----		-----
48	*Ca <----- *HCO3	Ca (HCO3) 2	81.0	4.0	324
22	*Mg -----> *SO4	CaSO4	68.1	37.5	2551
-21	*Na -----> *Cl	CaCl2	55.5	6.0	334
		Mg (HCO3) 2	73.2		
		MgSO4	60.2		
		MgCl2	47.6	1.8	85
		NaHCO3	84.0		
		Na2SO4	71.0		
		NaCl	58.4		
Saturation Values Dist. Water 20 C					
	CaCO3		13 mg/L		
	CaSO4 * 2H2O		2090 mg/L		
	BaSO4		2.4 mg/L		

REMARKS:

----- L. MALLET / S. BENNETT / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
LEE MALLET


 PETROLITE

 SCALE TENDENCY REPORT

Company	: YATES PETROLEUM	Date	: 4-11-91
Address	: ARTESIA, NEW MEXICO	Date Sampled	: 4-10-91
Lease	: S-25-T20S-R24-E	Analysis No.	: 443
Well	: FRESH WATER	Analyst	: LEE MALLETT
Sample Pt.	: UNKNOWN		

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

S.I. =	0.5	at	60 deg. F	or	16 deg. C
S.I. =	0.5	at	80 deg. F	or	27 deg. C
S.I. =	0.6	at	100 deg. F	or	38 deg. C
S.I. =	0.6	at	120 deg. F	or	49 deg. C
S.I. =	0.6	at	140 deg. F	or	60 deg. C

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

S =	1736	at	60 deg. F	or	16 deg C
S =	1804	at	80 deg. F	or	27 deg C
S =	1825	at	100 deg. F	or	38 deg C
S =	1817	at	120 deg. F	or	49 deg C
S =	1802	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

 Respectfully submitted,
 LEE MALLETT

ATTACHMENT H

MARTIN YATES. III
1912 - 1985
FRANK W. YATES
1936 - 1986



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

S. P. YATES
CHAIRMAN OF THE BOARD
JOHN A. YATES
PRESIDENT
PEYTON YATES
EXECUTIVE VICE PRESIDENT
RANDY G. PATTERSON
SECRETARY
DENNIS G. KINSEY
TREASURER

April 15, 1991

CERTIFIED RETURN RECEIPT

Belco Petroleum Corporation
P.O. Box 2267
Midland, TX 79702

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Humble Hobbs Federal #1 located in Unit P of Section 24-T20S-R24E.

Should you have any questions, please feel free to contact me at (505) 748-1471.

Sincerely,

A handwritten signature in cursive script that reads 'Paul Ragsdale'.

Paul Ragsdale
Petroleum Engineer

PR/sj

Enclosure

MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986



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DENNIS G. KINSEY
TREASURER

April 15, 1991

CERTIFIED RETURN RECEIPT

Coquina Oil Corporation
P.O. Box 27725
Houston, TX 77227-7725

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Humble Hobbs Federal #1 located in Unit P of Section 24-T20S-R24E.

Should you have any questions, please feel free to contact me at (505) 748-1471.

Sincerely,


Paul Ragsdale
Petroleum Engineer

PR/sj

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April 15, 1991

CERTIFIED RETURN RECEIPT

Enron Oil & Gas Co.
P.O. Box 101016
Houston, TX 77212

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Humble Hobbs Federal #1 located in Unit P of Section 24-T20S-R24E.

Should you have any questions, please feel free to contact me at (505) 748-1471.

Sincerely,

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Paul Ragsdale
Petroleum Engineer

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DENNIS G. KINSEY
TREASURER

April 15, 1991

CERTIFIED RETURN RECEIPT

Read & Stevens, Inc.
P.O. Box 1518
Roswell, NM 88201

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Humble Hobbs Federal #1 located in Unit P of Section 24-T20S-R24E.

Should you have any questions, please feel free to contact me at (505) 748-1471.

Sincerely,

Paul Ragsdale
Paul Ragsdale
Petroleum Engineer

PR/sj

Enclosure

ATTACHMENT I

Legal Notice

Yates Petroleum Corporation, 105 South Fourth Street, Artesia, NM 88210, has filed form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well, the "Humble Hobbs Federal #1" located 660' FSL & 660' FEL of Section 24, Township 20 South, Range 24 East of Eddy County, New Mexico, will be used for saltwater disposal. Disposal waters from Dagger Draw will be re-injected into the Canyon, Morrow, Devonian, and Ellenburger at a depth of 7500-11,580 feet with a maximum pressure of 3000 psi and a maximum rate of 15000 BWPD.

All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501, within 15 days. Additional information can be obtained by contacting Paul Ragsdale at (505) 748-1471.

MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

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EXECUTIVE VICE PRESIDENT
RANDY G. PATTERSON
SECRETARY
DENNIS G. KINSEY
TREASURER

April 9, 1991

Artesia Daily Press
503 W. Main
Artesia, NM 88210

Gentlemen,

Yates Petroleum Corporation desires to place a public notice in your newspaper for one day. The notice is enclosed.

Please place this notice in your paper Sunday, April 14, 1991 and forward a copy of it along with your billing as soon as possible to:

Yates Petroleum Corporation
105 S. 4th Street
Artesia, NM 88210
Attn: Stormi Johnson

If you have any questions, please contact me at 748-1471, Ext. 164. Thank you for your cooperation in this matter.

Sincerely,

Stormi Johnson
Stormi Johnson

Enclosure

MARTIN YATES, III
1912-1986
FRANK W. YATES
1936-1986

OIL DIVISION

AUG 1 1991 8 30



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

S. P. YATES
CHAIRMAN OF THE BOARD
JOHN A. YATES
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PEYTON YATES
EXECUTIVE VICE PRESIDENT
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SECRETARY
DENNIS G. KINSEY
TREASURER

August 2, 1991

New Mexico Energy & Minerals Department
OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504

ATTN: David Catanach

RE: Humble Hobbs Federal #1 SWD
Sec 20 - T20S - R24E
Eddy County, New Mexico

Dear David,

Pursuant to our telephone conversation regarding your objection to injecting into the Canyon and Morrow formations, Yates Petroleum wishes to withdraw the request to inject into these formations, and will only inject into the open hole below 9600'. Furthermore, we agree to "tie back" the 9 5/8" casing from the surface to the shot-off joint at 804 feet. Cement would be circulated to the surface.

If you need any further information, please contact me. We appreciate your cooperation in this matter.

Sincerely yours,

Paul Ragsdale
Petroleum Engineer

PR/pbs