STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

1-23-92

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

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

RE: Proposed:
MC
DHC
NSL
NSP
SWD X
WFX
PMX

Gentlemen:

I have examined the application for the:

Yates Petroleum Corp. Union ST Fed #4-A 1-8-31
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed

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

January 9, 1992

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 Union SI Federal #4 located in Section 1-T8S-R31E of Chaves County.

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

Enclosures

ENERGY AND MINERALS DEPARTMENT

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

Revised 7-1-81

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 Str. Artesia, NM 88210

Contact party: Chuck Morgan 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: Chuck Morgan Title Petroleum Engineer

Signature: Chuck Morgan Date: 1/14/92

* 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. _____

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

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
Union "SI" Federal #4
A 1-T8S-R31E
Chaves County, New Mexico

I. The purpose of converting this well is to make a disposal well for produced San Andres water into the San Andres formation.

II. Operator: Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
Chuck Morgan (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. Wells within the area of review penetrate the proposed injection zone. (Attachment C)

VII. 1. Proposed average daily injection volume approximately 800 BWPD. Maximum daily injection volume approximately 1200 BWPD.

2. This will be a closed system.

3. Proposed average injection pressure--950 psi.
Proposed maximum injection pressure--1050 psi.

4. Sources of injected water would be produced water from the San Andres. Primarily from Yates' Union SI wells #1-8. (Attachment D)

5. Chemical analysis of proposed zone. (Attachment E)

VIII. 1. The proposed injection interval is the portion of the San Andres formation consisting of dolomite from estimated depths of 4034' to 4269'.

2. There are no fresh water wells within one mile.

There are no fresh water zones underlying the formation.

IX. The proposed disposal interval may be acidized with 20% HCL acid.

X. Logs were filed at your office when the well was drilled in 1982.

XI. No windmills or fresh water wells exist within a one mile radius of the subject

XII. Yates Petroleum Corporation has examined geologic and engineering data and has found that there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Proof of Notice

A. Certified letters sent to the surface owner and offset operators. (Attachment F)

B. Copy of legal advertisement. (Attachment G)

XIV. Certification is signed.

Yates Petroleum Corporation
Union "SI" Federal #4
A 1-T8S-R31E

Attachment A
Page 1

III. Well Data

A. 1. Lease Name/Location:
Union "SI" Federal #4
A 1-T8S-R31E
330' FNL & 330' FWL

2. Casing Strings:
a. Present Well Condition
14" Conductor pipe @ 40'
8-5/8" 24# J-55 @ 1700' w/750 sx (circ)
4-1/2" 10.5# K-55 @ 4300' w/250 sx
TOC - 3100'
Present Status: Producing

3. Proposed well condition:
Casing same as above
2-3/8" J55 plastic-coated injection tubing @ 3930'

4. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 3930'.

B. 1. Injection Formation: San Andres

2. Injection Interval will be through perforations from approximately 4034-4269'.

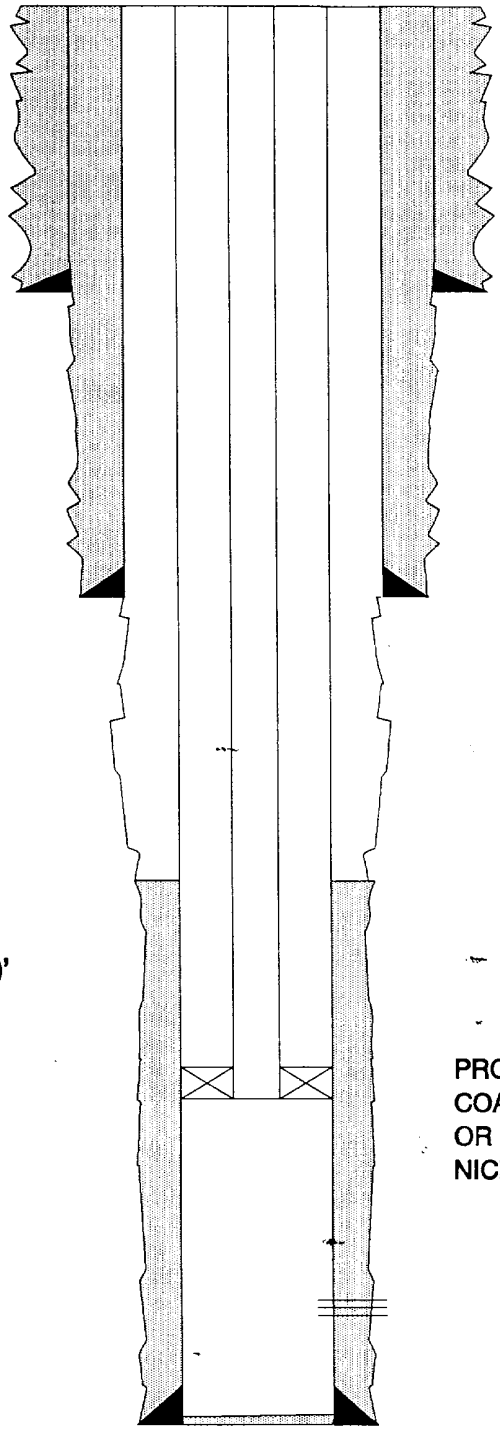
3. Well was originally drilled as a San Andres oil well. Well will be San Andres water disposal well (4034-4269') when work is completed.

4. Perforations:
a. 4034-4269.5' San Andres

5. Next higher (shallower) oil or gas zone within 2 miles--None
Next lower (deeper) oil or gas zone within 1/2 mile--Penn

YATES PETROLEUM CORPORATION
UNION SI FEDERAL #4

PROPOSED SALT WATER DISPOSAL WELL
SEC. 1-T8S-R31E
CHAVES COUNTY, NEW MEXICO



14" CONDUCTOR @ 40'

12-1/4" HOLE

8-5/8" @ 1700'
W/750 SX (CIRC)

7-7/8" HOLE

YATES 2139'

QUEEN 2656'

TOC 3100' (CBL)

SAN ANDRES 3300'

PROPOSED 2-3/8" J-55 PLASTIC-COATED TUBING AND GUIBERSON OR BAKER PLASTIC-COATED OR NICKEL-PLATED PACKER @ 3930'

P1 4003'

P2 4081'

P3 4191'

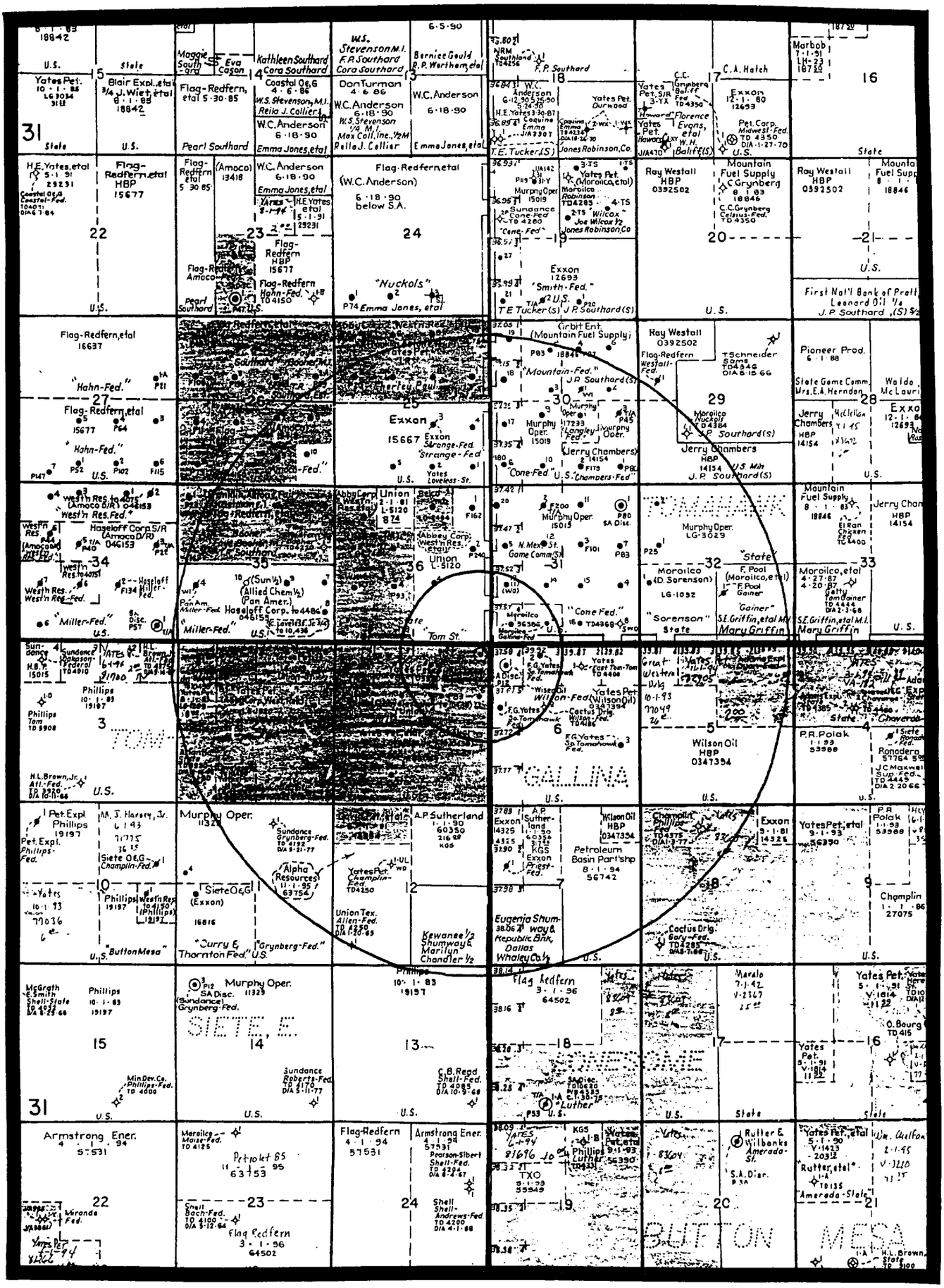
PERFS 4034-4269.5'

PBTD 4291'

4-1/2" @ 4300' W/250 SX

TD 4300'

ATTACHMENT B



YATES PETROLEUM CORPORATION

PROPOSED SALT WATER DISPOSAL WELL

UNION "SI" FEDERAL #4

SEC. 1-T8S-R31E

330' FNL & 330' FWL

CHAVES COUNTY, NEW MEXICO

ATTACHMENT C

Union "SI" Federal #4
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
Tom "36" State #4 J 36-7S-31E	Union Oil of California	Oil	3/02/85	4/17/85	4395'	San Andres	3994-4300'	8-5/8" @ 1670' w/800 sx 5-1/2" @ 4395' w/400 sx 2-3/8" @ 4010'
Shell Federal #1 L 31-7S-32E	Calco, Inc	D&A	9/21/67	10/03/67	4295'			8-5/8" @ 330' w/250 sx
Cone Federal #13 L 31-7S-32E	Sundance Oil	Oil	6/29/79	8/26/79'	4300'	San Andres	4147-4232'	8-5/8" @ 330' w/150 sx 4-1/2" @ 4300' w/760 sx
Gallina Federal #1 M 31-7S-32E	Moroilco Inc	Oil	11/24/83	12/09/83	4260'	San Andres	4119-4205.5'	8-5/8" @ 1741' w/575 sx 4-1/2" @ 4260' w/230 sx 2-3/8" @ 4080'
Gallina Federal #2 N 31-7S-32E	Moroilco Inc	Oil	2/13/84	2/25/84	4286'	San Andres	4071-4258'	8-5/8" @ 1723' w/575 sx 4-1/2" @ 4286' w/250 sx 2-3/8" @ 4256'
Union "SI" Federal #5 H 1-8S-31E	YPC	Oil	9/26/83	11/12/83	4300'	San Andres	4014-4177.5'	8-5/8" @ 1672' w/600 sx 4-1/2" @ 4300' w/325 sx 2-3/8" @ 4140'
Union "SI" Federal #6 G 1-8S-31E	YPC	Oil	8/21/83	9/21/83	4275'	San Andres	3991-4168'	8-5/8" @ 1666' w/750 sx 4-1/2" @ 4270' w/300 sx 2-3/8" @ 4127'
Union "SI" Federal #3 B 1-8S-31E	YPC	Oil	5/15/82	6/17/82	4280'	San Andres	3987-4038'	8-5/8" @ 1700' w/650 sx 4-1/2" @ 4280' w/250 sx 2-3/8" @ 3944'
Wilson Federal #1 D 6-8S-32E	Cactus Drlg Corp of TX	Oil	6/09/66	10/07/66	4340'	San Andres	4053-4069'	8-5/8" @ 375' w/200 sx 4-1/2" @ 4340' w/150 sx
Wilson Federal #2 F 6-8S-32E	Cactus Drlg Corp of TX	D&A	12/04/66	12/16/66	4186'			8-5/8" @ 356' w/200 sx
S. Tomahawk Federal #1 E 6-8S-32E	Fred G. Yates	Oil	12/14/83	1/24/84	4240'	San Andres	4030-4124'	8-5/8" @ 1701' w/600 sx 4-1/2" @ 4232' w/275 sx 2-3/8" @ 4163'
S. Tomahawk Federal #2 C 6-8S-32E	Fred G. Yates	Oil	5/01/84	5/30/84	4299'	San Andres	4066-4163'	8-5/8" @ 1725' w/625 sx 4-1/2" @ 4299' w/300 sx
Center "XI" Federal #5 J 1-8S-31E	YPC	Oil	11/28/83	1/02/84	4300'	San Andres	4132-4181'	8-5/8" @ 1548' w/675 sx 4-1/2" @ 4299' w/350 sx 2-3/8" @ 4088'
Center "XI" Federal #6 I 1-8S-31E	YPC	Oil	6/10/84	7/31/84	4300'	San Andres	4069-4197'	8-5/8" @ 1656' w/600 sx 4-1/2" @ 4300' w/250 sx 2-3/8" @ 4200'

ATTACHMENT D - Pg. 1

PETROLITE CORPORATION

TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY Yates Petroleum Corp. ADDRESS Artesia, NM DATE: 1/23/85

SOURCE Union SI Federal #1 DATE SAMPLED 1/15/85 ANALYSIS NO. 124

Analysis	Mg/L	*Meq/L	
1. pH	5.0		
2. H_2S (Qualitative)	80 ppm		
3. Specific Gravity	1.190		
4. Dissolved Solids	296,427		
5. Suspended Solids			
6. Phenolphtholein Alkalinity ($CaCO_3$)			
7. Methyl Orange Alkalinity ($CaCO_3$)	50		
8. Bicarbonate (HCO_3)	61	÷61 1	HCO_3
9. Chlorides (Cl)	184,870	÷35.5 5208	Cl
10. Sulfates (SO_4)	425	÷48 9	SO_4
11. Calcium (Ca)	34,040	÷20 1702	Ca
12. Magnesium (Mg)	4180	÷12.2 343	Mg
13. Total Hardness ($CaCO_3$)	102,300		
14. Total Iron (Fe)	trace		
15. Barium (Qualitative)			
16. Strontium			

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

1702	Ca	HCO_3
343	Mg	SO_4
3173	Na	Cl

1	HCO_3	
9	SO_4	
5208	Cl	

Saturation Values Distilled Water 20°C

$CaCO_3$	13 Mg/L
$CaSO_4 \cdot 2H_2O$	2,090 Mg/L
$MgCO_3$	103 Mg/L

Compound	Equiv. Wt.	X Meq/L	= Mg/L
$Ca(HCO_3)_2$	81.04	1	81
$CaSO_4$	68.07	9	613
$CaCl_2$	55.50	1692	93,906
$Mg(HCO_3)_2$	73.17	-	-
$MgSO_4$	60.19	-	-
$MgCl_2$	47.62	343	16,334
$NaHCO_3$	84.00	-	-
Na_2SO_4	71.03	-	-
NaCl	58.46	3173	185,494

REMARKS cc: Mr. B. Horner, Mr. D. Atkins
G. Knorr, G. Blackwell, Lab

Respectfully submitted
TRETOLITE COMPANY
Betty Knorr

PETROLITE CORPORATION
TRETOLITE DIVISION
369 Marshall Avenue / Saint L... Missouri 63119
(314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

WATER ANALYSIS REPORT

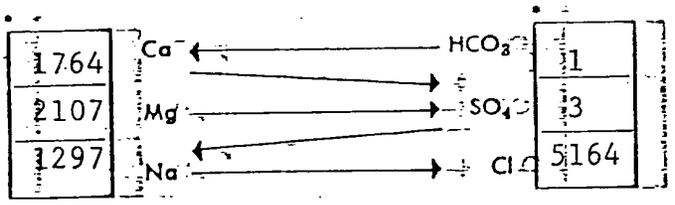
COMPANY Yates Petroleum Corp. ADDRESS Artesia, NM DATE: 1/23/85

SOURCE Union SI Federal #2 DATE SAMPLED 1/15/85 ANALYSIS NO. 129

Analysis	Mg/L		*Meq/L	
1. pH	5.1			
2. H_2S (Qualitative)	90 ppm			
3. Specific Gravity	1.185			
4. Dissolved Solids	274,123			
5. Suspended Solids				
6. Phenolphthalein Alkalinity ($CaCO_3$)	50			
7. Methyl Orange Alkalinity ($CaCO_3$)				
8. Bicarbonate (HCO_3)	61	÷61	1	HCO_3
9. Chlorides (Cl)	183,315	÷35.5	5164	Cl
10. Sulfates (SO_4)	125	÷48	3	SO_4
11. Calcium (Ca)	35,280	÷20	1764	Ca
12. Magnesium (Mg)	25,709	÷12.2	2107	Mg
13. Total Hardness ($CaCO_3$)	194,000			
14. Total Iron (Fe)	trace			
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION



Saturation Values Distilled Water 20°C

$CaCO_3$	13 Mg/L
$CaSO_4 \cdot 2H_2O$	2,090 Mg/L
$MgCO_3$	103 Mg/L

Compound	Equiv. Wt.	X Meq/L	= Mg/L
$Ca(HCO_3)_2$	81.04	1	81
$CaSO_4$	68.07	3	204
$CaCl_2$	55.50	1760	97,680
$Mg(HCO_3)_2$	73.17	-	-
$MgSO_4$	60.19	-	-
$MgCl_2$	47.62	2107	100,33
$NaHCO_3$	84.00	-	-
Na_2SO_4	71.03	-	-
NaCl	58.46	1297	75,823

REMARKS cc: Mr. B. Horner, Mr. D. Atkins
G. Knorr, G. Blackwell, Lab

Respectfully submitted
TRETOLITE COMPANY
Betty Knorr

CONFIDENTIAL
TRETOLITE DIVISION
369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500 / TWX 910-760-1660 / Telex 44-2417

WATER ANALYSIS REPORT

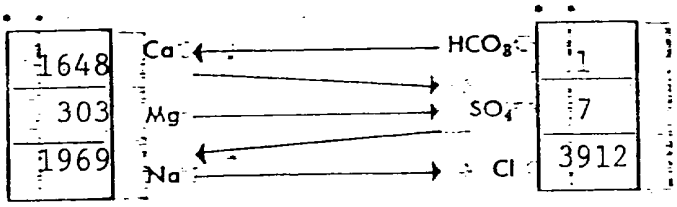
COMPANY Yates Petroleum Corp. ADDRESS Artesia, NM DATE: 1/23/85

SOURCE Union SI Federal #3 DATE SAMPLED 1/15/85 ANALYSIS NO. 123

Analysis	Mg/L		*Meq/L	
1. pH	5.3			
2. H_2S (Qualitative)	60 ppm			
3. Specific Gravity	1.195			
4. Dissolved Solids	221,114			
5. Suspended Solids				
6. Phenolphthalein Alkalinity ($CaCO_3$)				
7. Methyl Orange Alkalinity ($CaCO_3$)	50			
8. Bicarbonate (HCO_3)	61	÷61	1	HCO_3
9. Chlorides (Cl)	138,875	÷35.5	3912	Cl
10. Sulfates (SO_4)	350	÷48	7	SO_4
11. Calcium (Ca)	32,960	÷20	1648	Ca
12. Magnesium (Mg)	3,694	÷12.2	303	Mg
13. Total Hardness ($CaCO_3$)	97,600			
14. Total Iron (Fe)	trace			
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION



Saturation Values - Distilled Water 20°C

$CaCO_3$	13 Mg/L
$CaSO_4 \cdot 2H_2O$	2,090 Mg/L
$MgCO_3$	103 Mg/L

Compound	Equiv. Wt.	X Meq/L	= Mg/L
$Ca(HCO_3)_2$	81.04	1	81
$CaSO_4$	68.07	7	476
$CaCl_2$	55.50	1640	91,020
$Mg(HCO_3)_2$	73.17	-	-
$MgSO_4$	60.19	-	-
$MgCl_2$	47.62	303	14,429
$NaHCO_3$	84.00	-	-
Na_2SO_4	71.03	-	-
NaCl	58.46	1969	115,10

REMARKS cc: Mr. B. Horner, Mr. D. Atkins
G. Knorr, G. Blackwell, Lab

Respectfully submitted
TRETOLITE COMPANY
Betty Knorr

WATER ANALYSIS REPORT

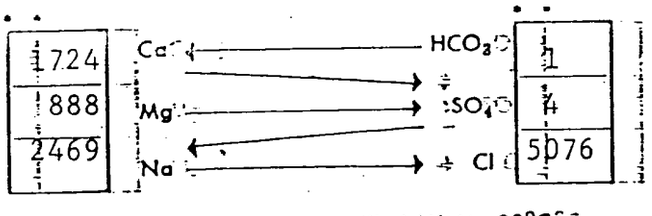
COMPANY Yates Petroleum Corp. ADDRESS Artesia, NM DATE: 1/23/85

SOURCE Union SI Federal #5 DATE SAMPLED 1/15/85 ANALYSIS NO. 136

Analysis	Mg/L		*Meq/L	
1. pH	5.2			
2. H_2S (Qualitative)	65 ppm			
3. Specific Gravity	1.185			
4. Dissolved Solids	282,382			
5. Suspended Solids				
6. Phenolphthalein Alkalinity ($CaCO_3$)				
7. Methyl Orange Alkalinity ($CaCO_3$)	50			
8. Bicarbonate (HCO_3)	61	HCO_3	1	HCO_3
9. Chlorides (Cl)	180,204	Cl	5076	Cl
10. Sulfates (SO_4)	175	SO_4	4	SO_4
11. Calcium (Ca)	34,480	Ca	1724	Ca
12. Magnesium (Mg)	10,838	Mg	888	Mg
13. Total Hardness ($CaCO_3$)	130,800			
14. Total Iron (Fe)	trace			
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION



Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
$Ca(HCO_3)_2$	81.04		1		81
$CaSO_4$	68.07		4		272
$CaCl_2$	55.50		1719		95,405
$Mg(HCO_3)_2$	73.17		-		-
$MgSO_4$	60.19		-		-
$MgCl_2$	47.62		888		42,287
$NaHCO_3$	84.00		-		-
Na_2SO_4	71.03		-		-
NaCl	58.46		2469		144,338

Saturation Values Distilled Water 20°C

$CaCO_3$	13 Mg/L
$CaSO_4 \cdot 2H_2O$	2,090 Mg/L
$MgCO_3$	103 Mg/L

REMARKS cc: Mr. B. Horner, Mr. D. Atkins
G. Knorr, G.G Blackwell, Lab

Respectfully submitted
TRETOLITE COMPANY
Betty Knorr

TRETOLITE DIVISION
369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY Yates Petroleum Corp. ADDRESS Artesia, NM DATE: 1/23/85

SOURCE Union SI Federal #6 DATE SAMPLED 1/15/85 ANALYSIS NO. 135

Analysis	Mg/L		*Meq/L	
1. pH	5.3			
2. H_2S (Qualitative)	70 ppm			
3. Specific Gravity	1.195			
4. Dissolved Solids	279,226			
5. Suspended Solids				
6. Phenolphtholein Alkalinity ($CaCO_3$)				
7. Methyl Orange Alkalinity ($CaCO_3$)	50			
8. Bicarbonate (HCO_3)	61	÷61	1	HCO_3
9. Chlorides (Cl)	178,871	÷35.5	5039	Cl
10. Sulfates (SO_4)	260	÷48	4	SO_4
11. Calcium (Ca)	32,400	÷20	1620	Ca
12. Magnesium (Mg)	12,296	÷12.2	1008	Mg
13. Total Hardness ($CaCO_3$)	131,600			
14. Total Iron (Fe)	trace			
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

1620	Ca	HCO_3 1
1008	Mg	SO_4 4
2416	Na	Cl 5039

Saturation Values Distilled Water 20°C

$CaCO_3$	13 Mg/L
$CaSO_4 \cdot 2H_2O$	2,090 Mg/L
$MgCO_3$	103 Mg/L

Compound	Equiv. Wt.	X Meq/L	= Mg/L
$Ca(HCO_3)_2$	81.04	1	81
$CaSO_4$	68.07	4	272
$CaCl_2$	55.50	1615	89,633
$Mg(HCO_3)_2$	73.17	-	-
$MgSO_4$	60.19	-	-
$MgCl_2$	47.62	1008	48,001
$NaHCO_3$	84.00	-	-
Na_2SO_4	71.03	-	-
NaCl	58.46	2416	141,23

REMARKS cc: Mr. B. Horner, Mr. D. Atkins
G. Knorr, G. Blackwell, Lab

Respectfully submitted,
TRETOLITE COMPANY
Betty Knorr

ATTACHMENT D - Pg 1 of 2

TRETOLITE DIVISION
369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY YATES PETROLEUM CORP. ADDRESS ARTESIA, NM DATE: 1/21/85

SOURCE UNION SI FEDERAL #7 DATE SAMPLED 1/14/85 ANALYSIS NO. 106

Analysis	Mg/L		meq/L	
1. pH	5.4			
2. H_2S (Qualitative)	140 ppm			
3. Specific Gravity	1.190			
4. Dissolved Solids	389,898			
5. Suspended Solids				
6. Phenolphthalein Alkalinity ($CaCO_3$)				
7. Methyl Orange Alkalinity ($CaCO_3$)	50			
8. Bicarbonate (HCO_3)	61	HCO_3 ÷61	1	HCO_3
9. Chlorides (Cl)	171,912	Cl ÷35.5	4843	Cl
10. Sulfates (SO_4)	300	SO_4 ÷48	6	SO_4
11. Calcium (Ca)	31,200	Ca ÷20	1560	Ca
12. Magnesium (Mg)	5,152	Mg ÷12.2	422	Mg
13. Total Hardness ($CaCO_3$)	99,200			
14. Total Iron (Fe)				
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

1560	Ca ← → HCO_3	1
422	Mg → → SO_4	6
2868	Na ← → Cl	4843

Compound	Equiv. Wt.	X Meq/L	= Mg/L
$Ca(HCO_3)_2$	81.04	1	81
$CaSO_4$	68.07	6	408
$CaCl_2$	55.50	1553	86,192
$Mg(HCO_3)_2$	73.17	-	-
$MgSO_4$	60.19	-	-
$MgCl_2$	47.62	422	20,096
$NaHCO_3$	84.00	-	-
Na_2SO_4	71.03	-	-
NaCl	58.46	4843	283,12

Saturation Values Distilled Water 20°C

$CaCO_3$	13 Mg/L
$CaSO_4 \cdot 2H_2O$	2,090 Mg/L
$MgCO_3$	103 Mg/L

REMARKS

Respectfully submitted
TRETOLITE COMPANY
Betty Knorr

TRETOLITE DIVISION
369 Marshall Avenue / Saint Lo[illegible]uri 63119
(314) WO 1-3500/TWX 910-760-1[illegible]/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY YATES PETROLEUM CORP. ADDRESS ARTESIA, NM DATE: 1/21/85

SOURCE UNION SI FEDERAL #8 DATE SAMPLED 1/14/85 ANALYSIS NO. 105

Analysis	Mg/l		*Meq/l	
1. pH	5.0			
2. H_2S (Qualitative)	55 ppm			
3. Specific Gravity	1.215			
4. Dissolved Solids	291,968			
5. Suspended Solids				
6. Phenolphthalein Alkalinity ($CaCO_3$)				
7. Methyl Orange Alkalinity ($CaCO_3$)	50			
8. Bicarbonate (HCO_3)	61	÷61	1	HCO_3
9. Chlorides (Cl)	187,294	÷35.5	5,276	Cl
10. Sulfates (SO_4)	375	÷48	8	SO_4
11. Calcium (Ca)	44,480	÷20	2,224	Ca
12. Magnesium (Mg)	11,858	÷12.2	972	Mg
13. Total Hardness ($CaCO_3$)	160,000			
14. Total Iron (Fe)	trace			
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

2224	Ca ←	HCO₃ → 1
972	Mg →	SO₄ → 8
2089	Na →	← Cl 5276

Compound	Equiv. Wt.	X Meq/l =	Mg/l
$Ca(HCO_3)_2$	81.04	1	81
$CaSO_4$	68.07	8	545
$CaCl_2$	55.50	2215	122,93
$Mg(HCO_3)_2$	73.17	-	-
$MgSO_4$	60.19	-	-
$MgCl_2$	47.62	972	46,287
$NaHCO_3$	84.00	-	-
Na_2SO_4	71.03	-	-
NaCl	58.46	2089	122,12

Saturation Values — Distilled Water 20°C

$CaCO_3$	13 Mg/l
$CaSO_4 \cdot 2H_2O$	2,090 Mg/l
$MgCO_3$	103 Mg/l

REMARKS cc: Mr. B. Horner, Mr. D. Atkins

G. Knorr, G. Blackwell, Lab

Respectfully submitted
TRETOLITE COMPANY
Betty Knorr

ATTACHMENT E

Phone (505) 746-6100

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Yates Petroleum Date 2-21-85

Field Tom tom County Chaves State NM

Lease and Well No. SI #4 Prod. Formation

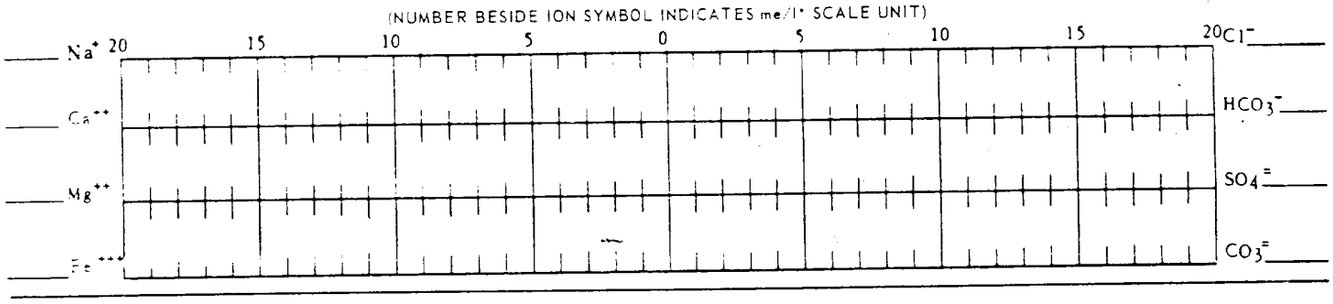
Source of Sample well head

Sample of Prod. Water [X] Inj. Water [ ] Other [ ]

Date Collected _____ Analyst James B. Campanella

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT)



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	4520	226
Magnesium	8980	742
Sodium	85,353	
Iron	nil	
Chloride	166,000	4676
Bicarbonate	417	6
Carbonate	-	-
Sulfate	nil	
Total Hardness	13,500	
Total Dissolved Solids	179,917	
Hydrogen Sulfide	2.5	
Oxygen	1.0	

ph 5.5

Sp. Gravity

Remarks:

ATTACHMENT F

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

January 9, 1992

CERTIFIED RETURN RECEIPT

Leila Bell & Tommy Ray Gainer
Route 1
Floyd, NM 88118

Dear Ms. Bell and Mr. Gainer,

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Union SI Federal #4 located in Unit D of Section 1-T8S-R31E.

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

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

Enclosure

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

YATES PETROLEUM CORPORATION

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

January 9, 1992

CERTIFIED RETURN RECEIPT

Mays Jenkins, Sr.
1011 N. Lea
Roswell, NM 88201

Dear Mr. Jenkins,

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Union SI Federal #4 located in Unit D of Section 1-T8S-R31E.

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

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

Enclosure

YATES PETROLEUM CORPORATION

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

January 9, 1992

CERTIFIED RETURN RECEIPT

Murphy Operating Corporation
P.O. Box 2648
Roswell, NM 88202

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Union SI Federal #4 located in Unit D of Section 1-T8S-R31E.

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

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

Enclosure

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

YATES PETROLEUM CORPORATION

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

January 9, 1992

CERTIFIED RETURN RECEIPT

Sandstone Oil & Gas
1330 E. 8th
Odessa, TX 79761

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates' Union SI Federal #4 located in Unit D of Section 1-T8S-R31E.

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

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

Enclosure

Attachment G

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 "Union SI Federal #4" located 330' FNL & 330' FWL of Section 1, Township 8 South, Range 31 East of Chaves County, New Mexico, will be used for saltwater disposal. Disposal waters from the San Andres will be re-injected into the San Andres at a depth of 4034-4269 feet with a maximum pressure of 1050 psi and a maximum rate of 1200 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 Chuck Morgan at (505) 748-1471.

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

January 14, 1992

Roswell Daily Record
2301 N. Main
Roswell, NM 88201

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 Thursday, January 16, 1992 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: Chuck Morgan

If you have any questions, please contact me at 748-1471, Ext. 198. Thank you for your cooperation in this matter.

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

Enclosure