

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION - Engineering Bureau -



## 1220 South St. Francis Drive, Santa Fe, NM 87505

### ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

whhue	cation Actonym	3.
	[DHC-Dow [PC-Po	ndard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication] nhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling] ool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement] [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion] [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase] lified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]
[1]	TYPE OF AP	PLICATION - Check Those Which Apply for [A]
	[A]	Location - Spacing Unit - Simultaneous Dedication
	Check	One Only for [B] or [C]
	[B]	Commingling - Storage - Measurement
	[C]	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
	[D]	Other: Specify
[2]	NOTIFICATI [A]	ON REQUIRED TO: - Check Those Which Apply, or Does Not Apply (
	[B]	If Offset Operators, Leaseholders or Surface Owner
	- [C]	Application is One Which Requires Published Legal Notice
	[D]	Notification and/or Concurrent Approval by BLM or SLO U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] Waivers are Attached

### [3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Sun	Brando
Signature	

Operations Engineer	-9-3-02
uperactous tugances	
itle	Date

P.mail Address

<u>Sam Brandon</u> Print or Type Name

## 2040 SOUTH PACHECO SANTA FE, NEW MEXICO 87505

### APPLICATION FOR AUTHORIZATION TO INJECT

I.	PURPOSE:       Secondary Recovery       Pressure Maintenance       Disposal       Storage         Application qualifies for administrative approval?       X       Yes       No
II.	OPERATOR:YATES PETROLEUM CORPORATION
	ADDRESS: 105 South Fourth Street, Artesia, NM 88210
	CONTACT PARTY: <u>Sam Brandon</u> PHONE:(505) 748-4281
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 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:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>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.).</li> </ol>
*VIII.	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any
*X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
*XI.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources 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: Operations Engineer
	NAME:     Sam Brandon     TITLE:     Operations Engineer       SIGNATURE:     DATE:     9/03/2002
*	If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.

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

Please show the date and circumstances of the earlier submittal:

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



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

105 SOUTH FOURTH STREET ARTESIA, NEW MEXICO 88210-2118 TELEPHONE (505) 748-1471

September 3, 2002

Marathon Oil Co. P.O. Box 552 Midland, Texas 79702 Attn: Operations

Dear Sir or Madam:

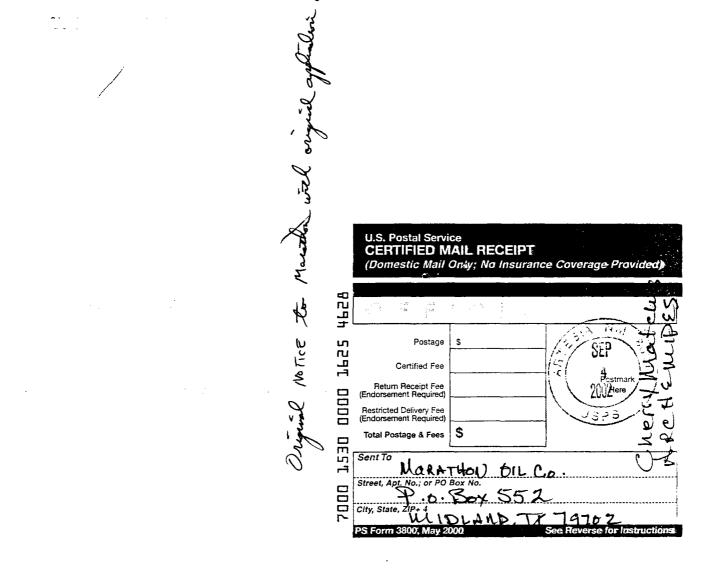
Enclosed please find a copy of Form C-108 (Application for Authority to Inject) for the proposed Archimedes SWD #1 located in Section 18-T21S-R24E, Eddy County, New Mexico.

Should you have any questions, please feel free to contact me at (505) 748-4281.

Sincerely,

Sam Brandon Operations Engineer

Enclosure



### Attachment F

C-108 Application for Authorization to Inject Yates Petroleum Corporation Archimedes SWD No. 1 Section 18, T-21S-R24E Eddy County, New Mexico

Available engineering and geologic data have been examined and no evidence of open faults of hydrologic connection between the disposal zone and any underground sources of drinking water has been found.

Hung

John Humphrey Geologist Yates Petroleum Corporation

9/3/02

Date

### C-108 Application for Authorization to Inject **Yates Petroleum Corporation** Archimedes ARE State Com #1 18-21S-24E **Eddy County, New Mexico**

The purpose of completing this well is for disposal of produced Canyon water I. into the Canyon.

1300FS

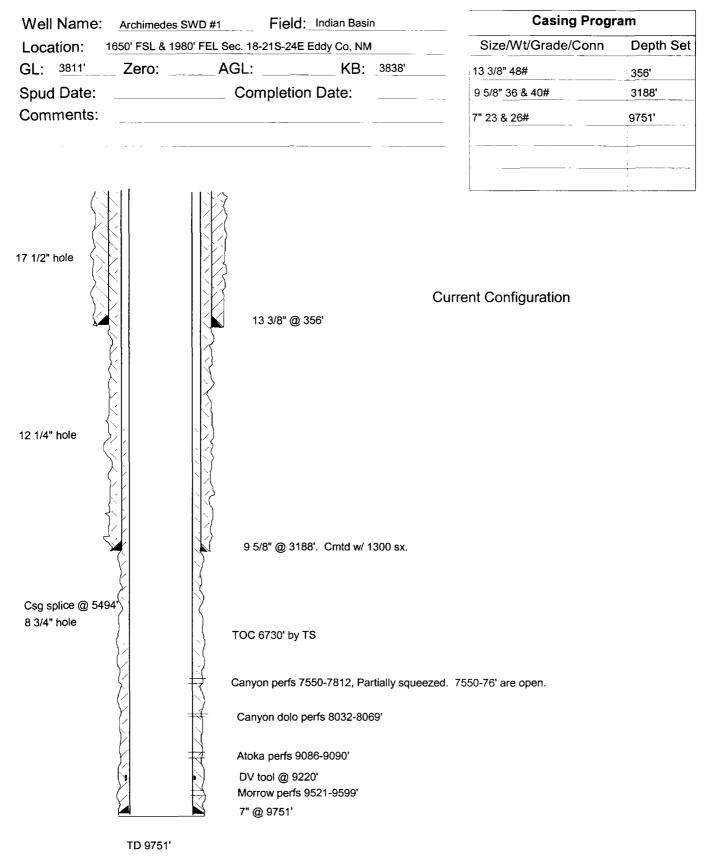
- Operator: Yates Petroleum Corporation II. 105 South Forth Street Artesia, NM 88210 Sam Brandon (505) 748-4281
- III. Well Data: See Attachment A
- IV. This is not an expansion of an existing project
- V. See attached map, Attachment B.
- VI. There are no wells within the area of review penetrating the proposed injection zone.
- VII. 1. Proposed average daily injection volume approximately 20,000 BWPD. Maximum daily injection volume approximately 25,000 BWPD.
  - 2. This will be a closed system.
  - 3. Proposed average injection pressure: 1000 psi. Proposed maximum injection pressure: 2000 psi.
  - 4. Sources of injected water would be produced water from the Canyon. (Attachment C)
  - 5. See Attachment C.
- The injection interval is Canyon from 8032'- 8150'. VIII.

Fresh water zones overlie the proposed injection formation at depths to approximately 1100 feet.

- The proposed disposal interval may be acidized and acid fraced with 15-20% IX. HCL acid.
- Х. Logs were filed at your office when the well was drilled. Any new logs run after completing will also be submitted to your office.

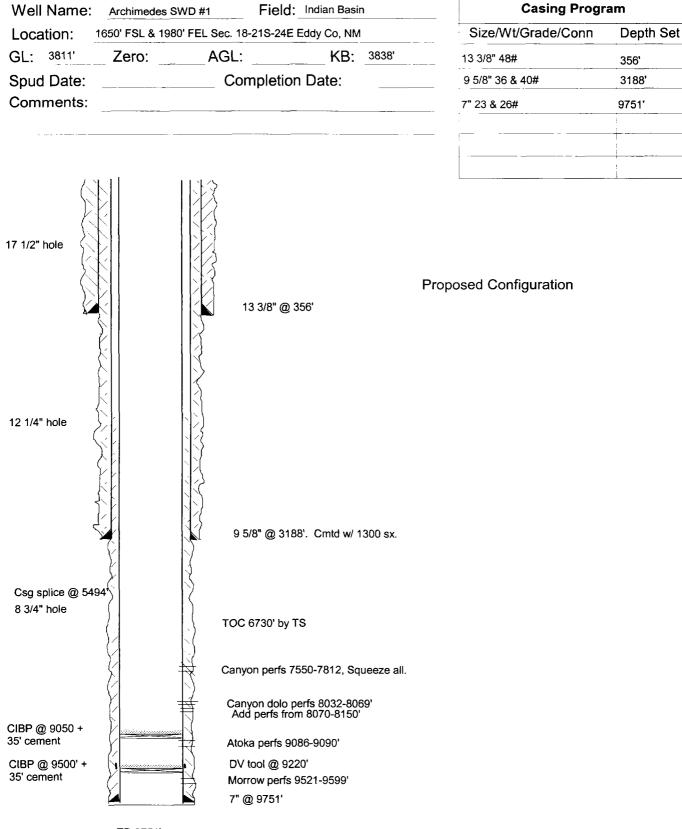
Application for Authorization to Inject Archimedes SWD #1

- XI. There are no windmills that exist within a one mile radius of the subject location. One well produces "fresh" water from a well approximately 1.25 miles from the proposed SWD well. A chemical analysis of the water from this well is attached. (Attachment D)
- XII. See Attachment F.
- XIII. Proof of notice.
  - A. Surface owner is the State of New Mexico. Lessee is Ms. Patricia Schafer Lyman.
  - B. Copy of legal advertisement attached. (Attachment G)
- XIV. Certification is signed.



SKETCH NOT TO SCALE

DATE:\_\_\_\_\_



TD 9751'

SKETCH NOT TO SCALE

DATE:\_\_\_\_\_

### Yates Petroleum Corporation Archimedes SWD #1 18-21S-24E

### Attachment A Page 1

### III. Well Data

- A. 1. Lease Name/Location Archimedes SWD #1 18-21S-24E 1650' FSL & 1980' FEL
  - 2. Casing Strings:
    - a. Proposed well condition:
      13 <sup>3</sup>/<sub>8</sub>" 48#, H40 ST&C at 356'
      9 <sup>5</sup>/<sub>8</sub>" 36 & 40# at 3188'
      7"23# J-55, 26# & 23# N-80 at 9751'
      4<sup>1</sup>/<sub>2</sub>" Plastic coated tubing (proposed) set at 8000' ±
  - 3. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 8000'±.
- B. 1. Injection Formation: Canyon
  - 2. Injection interval into cased hole perforations 8032'- 8150'.
  - 3. Well was originally drilled as a Morrow well with perforations at 9521'-9599'. Additional zones were perforated at 9086'-9090', 8032'-8069' and 7550'-7812'. All open perforations above 8000' will be cement squeezed and pressure tested to ensure complete shut-off. Perforations below 8150' will be abandoned with CIBP and cement.
  - 4. Next higher (shallower) oil or gas zone within 2 miles Canyon Next lower (deeper) oil or gas zone within 2 miles Morrow.

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YATES PETROLEUM CORPORATION ARCHIMEDES SWD #1 PROPOSED SALT WATER DISPOSAL WELL SEC 18-T21S-R24E 1650'FSL & 1980' FEL EDDY COUNTY. NEW MEXICO

ATTACHMENT B

Attachment C

Petrolite Corporation P.O. Box 60180 Midland, TX 79711-0180

Lab Fhone (915) 563-7941 Lab Fax (915) 563-7942

. . . . . . .

## Water Analysis Report from Petrolite Corporation

### YATES PETROLEUM

HILLVIEW AHE WELL #5

PETROLITE

ARTESIA, NEW MEXICO

Summary		Analysis: 15311						
Anion/Cation Ratio	1.00	Anions	mg/L	meq/L	Cations	mg/L	meq/L	
		Chloride	2,300	64.9	Sodium	2,084	90.7	
TDS (mg/L or g/m²)	7,914	Bicarbonate	817	13.4	Magnesium	110	9.05	
Density (g/cm <sup>3</sup> or tonne/m <sup>2</sup> )	1.006	Carbonate	0.00	0.00	Calcium	457	22.8	
		Sulfate	2,136	44.5	Strontium	10.0	0.23	
Chemical Treatment		Phosphate	N/A	N/A	Barium	0.05	0.00	
Sample Condition		Borate	N/A	N/A	bron	<b>0.05</b>	0.00	
-		Silicate	. N/A	N/A	Potassium	N/A	N/A	
Sampling Date	7/1/96				Aluminum	N/A	N/A	
Sampled by		Hydrogen Sulfide			Chromium	N/A	N/A	
Submitted by	ANDY MILLER				Copper	N/A	N/A	
·		pH at time of samplin	g	6.90	Lead	N/A	N/A	
Analysis Date	7/10/96	pH at time of analysis			Manganese	N/A	N/A	
Sample analysis number	15311	pH used in Calculatio	ns	6.90	Nickel	N/A	NZA	

		Prec	lictions	of Satur	ation In	dex and /	Amount	of Scale	in /b/1	0005bl		
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1.34	0.00	120	0.70	73.4	-0.24		-0.1ô		-0.13		0.37	0.02
2.35	0.00	140	0.34	95.0	-0.23		-0.06		-0.15		0.27	0.01

Note 1: When assessing the seventy of the scale problem, both the saturation index (Si) and amount of scale must be considered.

Hote 2: Precipitation of each scale is considered deparately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CC2 Pressure is absolute pressure. Total Pressure is gauge pressure.

Water to be disposed



## MILLER CHEMICALS, INC.

ì.

Post Office Box 298 Artesia, N.M. 88211-0298 (505) 746-1919 Artesia Office (505) 393-2893 Hobbs Office

APPINIX. 1.25 MILES (505) 746-1918 Fax From ARCHEMEDES By Phopose PROPOSED SUID

WATER ANALYSIS REPORT

Company Address Lease Well Sample	s : :	YATES PETROI ARTESIA, NM MARATHON "MW #81 WELLHEAD		Date Sam	: 8/20/0 pled : 8/20/0 No. : 00177	
	ANALYSI	S	`	mg/L		* meq/L
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19.	Total D Suspend Dissolv Dissolv Oil In Phenolp Methyl Bicarbo Chlorid Sulfate Calcium Magnesi Sodium Iron Barium Stronti	Water hthalein Alka Orange Alkali nate e um (calculated)	ds linity (CaC nity (CaCO3 H C S C M F B S S	) CO3 354. 1 8520. O4 350. a 800. g 340. a 4264. e 0.	0 HCO3 0 Cl 0 SO4 0 Ca 6 Mg 4 Na 3 R R	5.8 240.3 7.3 39.9 28.0 185.5

## PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt	X meq/L	= mg/L
++ +	+				
40  *Ca < *HCO3	61	Ca(HCO3)2	81.0	5.8	470
>		CaSO4	68.1	7.3	496
28  *Mg> *SO4	7	CaCl2	55.5	26.8	1489
/		Mg(HCO3)2	73.2		
185  *Na> *Cl	2401	MgSO4	60.2		
++ +	+	MgC12	47.6	28.0	1334
Saturation Values Dist. Wate	er 20 C	NaHCO3	84.0		
CaCO3 13 mg	l/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg	I/L	NaC1	58.4	185.5	10840
BaSO4 2.4 mg	[/L				

REMARKS: 0 % KCL PRESENT



## MILLER CHEMICALS, INC.

Post Office Box 298 Artesia, N.M. 88211-0298 (505) 746-1919 Artesia Office (505) 393-2893 Hobbs Office (505) 746-1918 Fax

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#### WATER ANALYSIS REPORT

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Addres Lease Well	y : YATES PETROLE s : ARTESIA, NM : ZINGARO "ANG" : #1 Pt. : WELLHEAD		Date Date Sampled Analysis No.	: 2/21/01	
	ANALYSIS		mg/L		¶meq_L
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 13. 19.	H2S Specific Gravity Total Dissolved Solid. Suspended Solids Dissolved Oxygen Dissolved CO2 Oil In Water Phenolphthalein Alkal: Methyl Orange Alkalin: Bicarbonate Chloride Sulfate Calcium Magnesium	inity (CaCO3) ity (CaCO3) HCO3 Cl SO4 Ca Mg Na Fe Sa Sr	17522.9 NR NR NR NR 659.0 8946.0 1750.0 680.0 583.4 5004.3 C.3 NR NR 4100.0	Cl SC4 Ca Mg	252.4 36.4 33.9 43.0

#### PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
+=+ ++				
34 *Ca < *HCO3   11	Ca(HCC3)2	81.0	10.5	875
>	CaSO4	68.1	23.1	1574
43; *Mg> *304   36!	CaC12	55.5		
	Mg(HCO3)2	73.2		
218; tha> tCl   252	MgSO4	60.2	12.3	301
÷+	MgC12	47.ē	34.7	1651
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCC3 13 mg/L	Na2SO4	71.0		
CaSC4 1 2H20 2090 mg/L	NaCl	58.4	217.7	
BaS04 2.4 mg/L				

Attachment F

C-108 Application for Authorization to Inject Yates Petroleum Corporation Archimedes SWD No. 1 Section 18, T-21S-R24E Eddy County, New Mexico

Available engineering and geologic data have been examined and no evidence of open faults of hydrologic connection between the disposal zone and any underground sources of drinking water has been found.

John Thunk

John Humphrey Geologist Yates Petroleum Corporation

9/3/02

Date

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



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

105 SOUTH FOURTH STREET ARTESIA, NEW MEXICO 88210-2118 TELEPHONE (505) 748-1471

September 3, 2002

Artesia Daily Press P.O. Box 190 Artesia, New Mexico 88211-0190

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 on Friday, September 6, 2002, (or as soon as possible thereafter) and forward a copy of it along with your billing as soon as possible to:

Yates Petroleum Corporation 105 South Forth Street Artesia, NM 88210 Attn: Sam Brandon

If you have any questions, please contact me at 748-4281. Thank you for your cooperation in this matter.

Sincerely,

Sam Brandon Operations Engineer

Enclosure

#### 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 "Archimedes SWD #1" located 1650' FSL & 1980' FEL of Section 18, Township 21 South, Range 24 East of Eddy County, New Mexico, will be used for salt water disposal. Disposal waters from the Canyon will be re-injected into the Canyon at a depth of approximately 8032'-8150' with a maximum pressure of 2000 psi and a maximum rate of 25,000 BWPD.

All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa Fe, NM 87505-5472, within 15 days. Additional information can be obtained by contacting Same Brandon at (505) 748-4281.

Affidavit of Publication
STATE OF NEW MEXICO
County of Eddy:
Gary D. Scott being duly
sworn,says: That he is the <b>Publisher</b> of The
Artesia Daily Press, a daily newspaper of general
circulation, published in English at Artesia, said county
and county and state, and that the here to attached
Legal Notice
was published in a regular and entire issue of the said
Artesia Daily Press,a daily newspaper duly qualified
for that purpose within the meaning of Chapter 167 of
the 1937 Session Laws of the state of New Mexico for
1 consecutive weeks/days on the same
day as follows:
First Publication September 4 2002
Second Publication
Third Publication
Fourth Publication
Jan Slatt
Subscribed and sworn to before me this
4th / S day of September 2002
Brun Con Beans
Notary Public, Eddy County, New Mexico
My Commission expires September 23, 2003

# **Copy of Publication:**

### 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 "Archimedes SWD #1" located 1650' FSL & 1980' FEL of Section 18, Township 21 South, Range 24 East of Eddy County, New Mexico, will be used for salt water disposal. Disposal waters from the Canyon will be re-injected into the Canyon at a depth of approximately 8032'-8150' with a maximum pressure of 2000 psi and a maximum rate of 25,000 BWPD. All interested parites opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa / Fe, NM 87505-5472, within 15 days. Additional information can be obtained by contacting Sam Brandon at (505) 748-4281. Published in the Artesia Daily Press, Artesia, N.M. September 4, 2002. Legal 17848

ATTACHMENT G

ARCHIMEDES ARE STATE COM #001 18/215/24/E/Eddy 1900(2) 1600 S 3630 1000(2) 1800 E 1800 S 130 1310 API VELL NAME Short Operator NS FTG 3020(2) 100 M 100 100 UL 3 5 0 M 100 VELL 30-015-28010 INDIAN HILLS UNIT #015 FAXEN OIL & RANCH LTD 1300S 1300 S 3800 - 330 W 450 2310 2336 5 17 0 1 215 24E 0 F G MORROW MONEN LAST STATUS ULL P. Code Latest Pool OGRID Days 2002 Gas 2002 30-015-28010 INDIAN HILLS UNIT #015 FAXEN OIL & RANCH LTD 1300S 1300 S 3800 - 330 W 450 2310 2336 5 17 0 1 215 24E 0 F G MORROW MONE NO COMPL M 0 151416 0 0 0