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

December 18, 1998

New Mexico Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505

Attention: Mr. Ben Stone

New Mexico Salt Water Disposal Company, Inc.

P. O. Box 1518

Roswell, New Mexico 88202

Attention: Mr. John C. Maxey, Jr.

Re:

Request for Exemption to OCD Rule 701

Continental State #1

1976.6' FNL & 1970.1' FWL Section 18 T10S-R34E Lea County, New Mexico

### Gentlemen:

Yates Petroleum Corporation, pursuant to your request dated December 2, 1998 and our subsequent agreement, hereby waives any objection to your application to dispose of salt water into the San Andres formation in the captioned well. This waiver of objection is specifically subject to the agreement between New Mexico Salt Water Disposal Company, Inc. and Yates Petroleum Corporation dated December 16, 1998 attached.

Should you require anything further, please do not hesitate to contact me.

Very truly yours,

YATES PETROLEUM CORPORATION

Randy G. Patterson Land Manager

RGP/mw

**Enclosure** 

### NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.

400 N. PENN, SUITE 1000

P. G. BOX 1518

ROSWELL, NEW MEXICO 88202 PHONE 505 622-3770

December 16, 1998

Yates Petroleum Corporation 105 S. 4th Artesia, New Mexico 88210

Attention: Randy Patterson

RE: Continental State #1

**SWD** Waiver

Dear Randy:

Pursuant to our conversation of Monday, December 14, 1998, New Mexico Salt Water Disposal Company, Inc. agrees with your stipulation to limit maximum surface injection pressure at the **wellhead** to 500 psig on the subject well.

If you have any other questions concerning our operation, please give me a call.

Sincerely,

NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.

John C. Maxey, Jr.

Agent

JCM/sr/swdltrs/yatescs1

12/28/18 SWD

### NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.

400 N. PENN, SUITE 1000 P. D. BOX 1518

ROSWELL, NEW MEXICO 88202 PHONE 505 622-3770

December 9, 1998

Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505 1 1 1998

Attention: Mr. Ben Stone

RE:

Application For Permit To Dispose Of Salt Water

Continental State #1

1976.6' FNL & 1970.1' FWL Section 18 T10S-R34E Lea County, New Mexico

Dear Ben:

As I discussed with you several weeks ago the New Mexico Salt Water Disposal Company, Inc. is in a bit of a financial crunch due to losing the subject disposal well in the Bough "C" formation. Therefore, enclosed is our application for authorization to inject into the San Andres formation in the subject well. Since we are enduring a financial hardship until additional injection capacity can be put into service. I would appreciate it if you can expedite this application in every possible way. The land owner and offset operators have received a copy of the application as evidenced by the certified mail receipts enclosed. Also enclosed from the Hobbs Daily News Sun is an affidavit evidencing our legal notice published December 3, 1998. Pursuant to Rule 701 our application can be approved administratively if no protests or requests for hearings are received fifteen (15) days after this date of notification.

Please let me know if you have any questions concerning our application.

Sincerely,

NEW MEXICO SALT WATER DISPOSAL COMPANY, INC.

JCM/sr/jcmltrsocd2cont1

**Enclosures** 

Orig: OCD Santa Fe & 1 xc

Xc: OCD Hobbs

### AFFIDAVIT OF PUBLICATION

State of New Mexico, County of Lea.

I, KATHI BEARDEN	1
Publisher	
of the Hobbs Daily News-St daily newspaper published a Hobbs, New Mexico, do sol swear that the clipping attac hereto was published once a week in the regular and enti- issue of said paper, and not supplement thereof for a per	at emnly hed a re a
of1	
Beginning with the issue da	weeks. ted
December 3 and ending with the issue da	
December 3	1998
Kathi Bend	<u></u>
Publisher Sworn and subscribed to be	efore
me this 2nd	day of
December	1998
Jodi Henson Notary Public.	
My Commission expires	

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

October 18, 2000

(Seal)

### LEGAL NOTICE December 3, 1998

New Mexico Salt Water Disposal Company, Inc. will apply for authority to convert the Continental State #1 well located 1976.6' FNL & 1970.1' FWL of Section 18 T10S-R34E of Lea County, New Mexico into a salt water disposal well. Water produced from oil & gas leases west of Crossroads, New Mexico will be disposed of into the San-Andres formation from 4,200' to 5,300'. The maximum daily injection rate will be 2,000 BWPD with a maximum injection pressure of 1,000 psi. Interested parties must file objections or requests for hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa Fe, New Mexico 87505 within fifteen (15) days of this notice. John C. Maxey, Jr. Agent New Mexico Salt Water Disposal Company, Inc. P.O. Box 1518 Roswell, New Mexico 88202 505/622-3770 #16306

a0107570000 01528367 Read & Stevens, Inc. P.O. Box 1518 a/c 463165 ROSWELL, NM 88202

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BANTA FE, NEW MEXICO 8/501

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ne. Such data shall include a description of each lled, location, depth, record of completion, and ustrating all plugging detail.  on, including:  m daily rate and volume of fluids to be injected;
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on the injection zone including appropriate lithologiand depth. Give the geologic name, and depth to f drinking water (aquifers containing waters with ns of 10,000 mg/l or less) overlying the proposed source known to be immediately underlying the
rogram, if any.
data on the well. (If well logs have been filed resubmitted.)
water from two or more fresh water wells (if mile of any injection or disposal well showing were taken.
make an affirmative statement that they have ineering data and find no evidence of open faults between the disposal zone and any underground
of Notice" section on the reverse side of this form.
on submitted with this application is true and correc
ief.
Title Agent  Date: 12/02/98

### 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:

- 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 2008, 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.

# Application For Authorization To Inject New Mexico Salt Water Disposal Company, Inc. Supplemental Information Per OCD Form C-108 December 2, 1998

III.A. 1. Continental State #1, 1976.6' FNL & 1970.1' FWL, Section 18 T10S-R34E, Lea County, New Mexico.

<b>2</b> .	Csg Size	<u>Depth</u>	Cement (sx)	Hole Size	TOC
	12 3/4"	363'	350	15"	Circulated To Surface
	8 5/8"	4,045'	350	11"	2,188' Calculated
	5 1/2"	9,925'	500	7 7/8"	5,400' Squeeze Cement

- 3. 2 3/8" 2,500 psi fiberglass tubing latched into a packer at 4,100'.
- 4. Baker Lok-set packer set at 4,100' with a 1.78" ID profile and right hand release on-off tool.
- 5. All components nickel plated or plastic coated.
- III.B. 1. The injection interval is the San Andres formation in the Vada Penn field.
  - 2. The injection interval is located from 4,200' to 5,300', perforated through casing.
  - 3. The well was originally drilled as a Bough "C" producer in 1968. The well is depleted and uneconomic to produce.
  - 4. The Bough "C" perfs 9,754'---9,880' have been P&A'd w/ a CIBP @ 7,100' w/ 100' cement on top, and 40 sx cement squeezed below CIBP. Perfs @ 5,460' (2 holes) have been squeezed w/ 30 sx cement below a cement retainer @ 5,400', w/ 100' cement plug set above CIR.
  - 5. The next lower interval that produces in the area is the Abo with the top being located at approximately 7,750'. There is no higher interval of production in the area.

- V. A map is attached identifying all leases in the area of the proposed disposal well, and the one half-mile radius area of interest is drawn around the proposed disposal well.
- VI. Within the area of review there are two wells that penetrate the proposed injection zone. The Champlin 18 State #1 is located 1980' FSL and 1980' FWL of Section 18 T10S-R34E, Lea County, New Mexico. This well was spudded on March 7, 1968 and completed on May 1, 1968 in the Permo Penn (Bough "C"). The well was drilled to a total depth of 9,910' and is plugged and abandoned. An attached schematic illustrates all plugging details. The Champlin 18 State #2 is located 1980' FNL and 1980' FEL of Section 18 T10S-R34E, Lea County, New Mexico. It was spudded on May 5, 1968 and completed June 12, 1968. Total depth was 9,915' and it was completed in the Permo Penn (Bough "C"). An attached schematic illustrates all plugging details.
- VII. 1. The proposed average and maximum daily rate and volume of fluids to be injected are 720 BWPD and 2000 BWPD respectively.
  - 2. The system is a closed system.
  - 3. The anticipated average operating pressure is 0 psi and the anticipated maximum operating pressure is 1,000 psi.
  - 4. The source for injected fluid is Bough "C" and San Andres produced water being produced from the area west of Crossroads, New Mexico. An analysis of the Injection fluid is attached.
  - 5. Attached is a chemical analysis of produced water from the Flying M San Andres field in Section 21-T9S-R33E of Lea County, New Mexico.
- VIII. The proposed injection zone the San Andres formation is a brown to light tan dolomite having intercrystalline porosity. Porosity ranges from 5% to 10% using an Acoustic Velocity log run in 1968. The interval proposed for injection is 1,100' with the top of the San Andres formation located at 3,985'. The 12 3/4" surface casing was run to a depth of 363' to protect any underground sources of fresh water. There are no known sources of fresh water below 363' overlying the proposed injection zone, and there are no known sources to be immediately underlying the injection interval.

- IX. The proposed injection interval will be treated with 1,000 gallons of 20% NEFe acid down tubing with a packer set approximately 100' above the top perf. The average injection rate will be 5 to 7 BPM.
- X. Appropriate logs have been filed with the Division and do not need to be resubmitted.
- XI. There are no fresh water wells within one mile of the proposed disposal well, according to a search done by the New Mexico State Engineers office.
- XII. Upon examination of the available geologic and engineering data, no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water was found.
- XIII. Notice of this application has been furnished by certified mail to the owner of the surface of the land on which the well is located and to each leasehold operator within one-half mile of the well location. The land owner and leasehold operators are listed below. Since this application is subject to administrative approval, proof of publication is also attached to this application and was published in the Hobbs News Sun, Lea County, New Mexico.

Land Owner: Commissioner of Public Lands

State Land Office P. O. Box 1148

Santa Fe. New Mexico 87504-1148

Leasehold Operators:

Yates Petroleum Attn: Land Manager

105 S. 4th

Artesia, New Mexico 88210

BTA Oil Producers Attn: Land Manager

104 S. Pecos

Midland. Texas 79701

JCM/sr/jcmltrs/swdappc1

**Attachments** 

Continental St #1 Sec 18 10S - 34E Lea Co., NM November 18, 1998 Current Config

15'' hole x 12 3/4'' 48# csg @ 363' cmt w/ 350 sx to surf

## ILLEGIBLE

11" hole x 8 5/8" 24# & 32#, J55 csg @ 4,045' cmt w/ 350 sx. TDC 2,188' FS (Calc)

Perf San Andres 4,692 - 4,700, 4,716 - 34, 4,776 - 86, 4,792 - 4,806, and 4,826 - 30 w/ 2 spf, 113 holes.

CIR set @ 5,400 w/ squeeze perfs @ 5,460 (2 holes). Squeeze w/ 30 sx to 3,000 psi, aumping 100' cnt on CIR.

Set CIBP @ 7,000 and spot 100' cmt on top.

Csg collopsed @ 7,100'. Squeeze cmt interval w/ 40 sx cmt @ 1 BPM and 3,000 psi. Drill out and attempt to swedge csg. TDC @ 6,050' est.

2 3/8" 2,500 psi fiberglass tubing w/ nickel plated Baker Lok-Set pkr, 1.78" ID profile and right hand release on-off tool set @ 9,700".

Bough perfs 9,754 - 64, 9,782 - 84, 9,792 - 9,800, 9,810 - 22, and 9,866 - 80.

7 7/8" hole x 5 1/2" 15.5# & 17# J55 & N80 csg @ 9,925' cmt w/ 500 sx. TOC 7,340' TS. PBTD 9,892'

Continental St #1 Sec 18 10S - 34E Lea Co., NM November 18, 1998 Proposed Config 15″ hole x 12 3/4″ 48# csg @ 363′ cmt w/ 350 sx to surf 2 3/8" fiberglass the landed on nickel plated double set pkr set @ 4,100' using a 1.78" profile and on-off tool. 11" hole  $\times$  8 5/8" 24# & 32#, J55 csg @ 4,045' cmt w/ 350 sx. TOC 2,188' FS (Calc) Squeeze or circ cmt through 2 holes @ 4,100' to isolate 5  $1/2" \times 7 7/8"$  annulus. Perf San Andres 4,692 - 4,700, 4,716 - 34, 4,776 - 86, 4.792 - 4.806, and 4.826 - 30 w/ 2 spf. 113 holes. CIR set @ 5,400 w/ squeeze perfs @ 5,460 (2 holes). Squeeze w/30 sx to 3,000 psi, dumping 100' cmt on CIR. ILLEGIBLE Set CIBP @ 7,000 and spot 100' cmt or top. Csq collapsed @ 7,100'. Squeeze cmt interval w/ 40 sx cmt @ 1 BPM and 3,000 psi. Drill out and attempt to swedge csg. TDC @ 6,050' est. 2 3/8" 2.500 psi fiberglass tubing w/ nickel plated Baker Lok-Set pkr, 1.78" ID profile and right hand release on-off tool set @ 9,700'. Bough perfs 9,754 - 64, 9,782 - 84, 9,792 - 9,800 9,810 - 22, and 9,866 - 80. 7 7/8" hole x 5 1/2" 15.5# & 17# J55 & N80 csg @ 9,925' cmt w/ 500 sx. TOC 7,340' TS. PBTD 9,892'

# New Mexico Salt Water Disposal Company, Inc. SWD Application Area of Review Form C-108, Item V 12/02/98

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Continental State #1
1,976.6' FNL & 1,970.1' FWL
Section 18 T10S-R34E
Lea County, New Mexico

Cement Champlin 18 St #1 10 sx cmt surf plug Cement Sec 18 10S - 34E 150 sx cmt plug from 443 - 220 Lea Co., NM Cement March 11, 1998 Shot 8 5/8" csg @ 1,000 and pulled. Current Config Set 100 sx cmt plug from 1,050 - 950 13 3/8" csg @ 393' cmt w/ 425 s: to surf Cement Shot 5 1/2" csg @ 2,250 and pulled. 50 sx cmt plug from 2,250 - 2,1508 5/8" csg @ 4,060' cmt w/ 800 sa. TDC 3,010' by TS LLEGIBLE

Set CIBP @ 9,500 w/ 50' of cmt on top.

Permo Penn penfs 9,878 - 90

 $5\ 1/2"$  csg @ 9,910' w/ DV @ 5,408'. cmt 1st w/ 450 sx. Cmt 2nd w/ 500 sx. TDC 2,450' (calc)

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35. List of Attachments	·							<u>-</u> '			<del></del>
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SIGNED ! Unita	- Dr flown	dulph		E	District	_C1	.erk		DATE.	May	6, 1968

### INSTRUCTIONS

filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conditionally drilled wolls, true vertical depths shall lead. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on there six copies are required. See Rule 1105.

### INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

	<i>r</i> -	Southeast	ern	New Mexico		Northwestern	Ne	w Mexico .
	Anhv	3 (YV)				Ojo Alamo Kirtland-Fruitland		
	SaltYates	2707				Pictured Cliffs		
	7 Rivers Queen	3403	T.	Silurian	τ.	Menefee Point Lookout	T.	Elbert
5	Grayburg San Andres	3975	T.	Simpson	T.	Mancos	T.	Ignacio Qtzte
E			T.	Ellenburger	T.	Dakota	T.	<del></del>
7	Blinebry Tubb Drinkard	6392	T.	Granite	T.	Morrison Todilto Entrads	T.	
,	Abo	<u>7755</u>	T.	Bone Springs	<b>T</b> .	Wingste	T.	
	Penn. isco (Bough C)	9872 9872			T.	Permian————————————————————————————————————	T.	

### FORMATION RECORD (Attach additional sheets if necessary)

From	То	Thickness in Feet	Formation	From	то	Thickness in Feet	Formation
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Cement Champlin 18 St #2 10 sx cmt surf plug Cement Sec 18 10S - 34E 150 sx cmt plug from 449 - 350Lea Co., NM Cement March 11, 1998 Shot 8 5/8" csg @ 891 and pulled. Current Config Set 100 sx cmt plug from (approx) 943 - 840 13 3/8" csg @ 393' cmt w/ 425 sk to sunf Cement Shot 5 1/2" csg @ 2,395 and pulled. 50 sx cmt plug from 2,445 - 2,289 8 5/8" csg @ 4,104' cmt w/ 600 s. TDC 3,270' (est from #1well) ILLEGIBLE

Set CIBP @ 9,800 w/ 35' of cmt on top.

Permo Penn perfs 9,880 - 92

5 1/2" csg @ 9,915' w/ DV @ 5,403'. cmt 1st w/ 500 sx. Cmt 2nd w/ 500 sx. TOC 2,450' (calc)

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15. Date Spudcod	16. Date T.D. 1	Reached 17. Date	Compl. (R	eady to	Prod.) 18.	Eleva	tions (DE	F, RKB, I			Elev. Cashinghead
5-5-68	.6-7-68	İ	6-12-6	8	j		4214	DF	•		4203
20. Total Depth	21. Pl	g Back T.D.		f Multip	le Compl., Ho	w	23. Inter	vals ;	Rotary To	ols	, Cable Tools
9915		9905				l		—→ :	0-99	15	
24. Producing Interval(	s), of this comple	tion - Top, Botto	n, Name							12	25, Was Directional Survey Made
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9880-9892		ugh "C"			<del></del>			. , ,			No
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	ement bond	and Gamma		<del></del>							No
28. CASING SIZE	WEIGHT LB	<del></del>			ort all strings	801	<del></del>	FUTING	RECORD		1 440447 544 1.55
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8-5/8"	24# &				1 "			) sack			None
5-1/2"	20# &		<del></del>		<del>-</del> 7/8"	•		) sack			None
29.	Ĺ	INER RECORD					30.		TUBI	NG RECO	ORD
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	logs under	separate co	over.					•			•
36. / hereby certify that				m is tru	e and complet	e 10 1	he best o	f my kno	wledze an	d belief.	
			, <b>.</b> ,		= = ~ <b>****</b> * * * *						
SIGNED (1)ac	1. in Ru	- Calph		-	Distric	t C	lerk		DAT		June 17, 1968

### **INSTRUCTIONS**

to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or sill. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests consisting drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall reported. For multiple completions, lipms 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on and, where six copies are required. See Sulo 1105.

### INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

٠.	Southeast	ern	New Mexico	Northwestern New Mexico								
т.		T.	Canyon	<b>T</b> .	Ojo Alamo	т.	Penn. "B"					
T.	Sait 2100	T.	Strawn	T.	Kirtland-Fruitland	T.	Penn. "C"					
B.	Salt	T.	Atoka	T.	Pictured Cliffs	т.	Penn. "D"					
T.	Yates 2713	T.	Miss	Т.	Cliff House	T.	Leadville					
T,	7 Rivers	T,	Devonien	T.	Menefee	. T.	Madison					
T.	Queen	T.	Siluri an	T.	Point Lookout	T.	Elbert					
T.	Grayburg	T.	Montoya	T.	Mancos	T.	McCracken					
T.	San Andres 3985	T.	Simpson	T.	Gallup	т.	Ignacio Qtzte					
T.	Glorieta 5414	T.	McKee	Ba	se Greenhorn	. T.	Granite					
T.	Paddock	T.	Ellenburger	T.	Dakota	т.						
T.	Blinebry	T.	Gr. Wesh	τ.	Morrison	т.						
T.	Тирь 6900	T.	Granite	Т.	Todilto	т.						
T.	Drinkerd	T.	Delaware Sand	T.	Entrada	т.						
T.	Abo7764	T.	Bone Springs	. T.	Wingate	т.	•					
T.	Wolfcamp - 8300	T.		T.	Chinle	т.						
T.	Penn. 9873	T.		T.	Permian	. T.	<del></del>					
T	Cisco (Bough C)9873	T.		T.	Penn. "A"	T.						

### FORMATION RECORD (Attach additional sheets if necessary)

Prom	Te	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
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2523	3020	497	Anhydrite & Salt	ii.			
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	8527	264	Shale & Lime	1	i	1 1	
	8984	457	Lime	.	•	1	,
	9112	128	Lime & Chert		1		·
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### ROSWELL GEOLOGICAL SOCIETY SYMPOSIUM

Author:

Symposium Committee

Field Name:

Flying M (San Andres)

Affiliation: Date:

Roswell Geological Society November 1966

Location: County & State:

T-9-S, R-33-E Lea County, New Mexico

Discovery Well:

Coastal States Gas Producing Company #1 Skelly State

SE/4 NW/4 Section 21, T-9-S, R-33-E

**Exploration Method Leading to Discovery:** 

Seismic & subsurface data

Pay Zone:

Formation Name: San Andres Depth & Datum Discovery Well:

4550 (-175)

Lithology Description: Gray to gray-tan to brown, finely crystalline dolomite, with interstitial and solution porosity; anhydritic and algal-oolitic in part; some evidence of fracturing is present. Porosity zones are thin streaks within the gross pay

Approximate average pay: 100 gross 15 net

 $3000_{\text{qcres}}$ Productive Area \_\_\_

Stratigraphic, with secondary solution porosity and fractures; Loses porosity and permeability updip and produces water downdip.

Rese

12.9	a: %	Porosity,	7.5 Md	Per	meab	ility,	<u>25</u> %	Sw,	_?%	So
011.	Α				-0	A D 1	•			

Average gravity 19.3° API

91,940<sub>No+K</sub>, 2800 Ca, 760 Mg,146,000 Cl, 2,850 CO2, or HCO3, .047 1 Resistivity .047
1466 psi @ 4550 (-175) Reservoir Temp. liter

Weak gas expansion

Set casing through pay, perforate and stumulate with small acid and large oil-frac or water-frac treatment. Perforation density is 2 SPF but will vary with operators.

Type completion:

Pumping

Normal Well Spacing 80

Deepest Horizon Penetrated & Depth:

Mississippian limestone 11,820 (-7447)

Other Producing Formations in Field:

Abo

Bough "C"

8600 (-4220)

9050 (-4670)

### Production Data:

YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF		YEAR	YPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF	
		Prod.	S.I.or Abd.	ANNUAL	CUMULATIVE	7 =	=	Prod.	S.I.or Abd.	ANNUAL	CUMULATIVE
1964	OIL	27		179,831			OIL				
	GAS			6,250			GAS				
1965	OIL	35		524,809	704,640		OIL				
	GAS			137,164	143,414		GAS				
*196	601L	39		304,658	1,009,298		OIL				
	GA5			138,545	281,959		GAS				
	OIL						OIL				
	GAS						GAS				

<sup>\*</sup> Production to 9/1/66.