### STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

# OIL CONSERVATION DIVISIO

POST OFFICE BOX 2018 BTATE LAND OFFICE BUILDING BANTA FE, NEW MEXICO 8/501 Revised 7-1-81

I.	Purpose: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? Tyes X no
II.	Operator: Yates Drilling Company
	Address: 105 South 4th Street, Artesia, NM 88210
	Contact party: Tobin L. Rhodes Phone: 505-748-4500
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?
٧.	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>
7111.	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.
х.	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.
III.	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 correcto the best of my knowledge and belief.
	Name: Tobin La Rhodes Title Petroleum Engineer
	Signature: 10h J. Wor Date: 7-15-96

### 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:
  - 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.

CHECK	LIST for Al	<u>OMINIST</u>	RATIVE	INJECTION	APPLIC	CATIONS	
Operator: Yaras L	Decense Con	M.P.ANTY	Well:	ACTUS PL	KEN ()	117 No.14	
Contact: TosiN	C. RHODES	Title	: P.E	•	Phon	e: <u>505 - 748</u>	4500
DATE IN _7							
Proposed Injection					,		
Original Order: R-	9075	60	<u>L</u> Second	ary Recovery	Pres	ssure Maintei	nance
				VATER DISPO			
C	apitan Reef						
Data is complete f		well(s)? <u>4</u>	الح <sup>ح</sup> Addi	tional Data Re	eq'd		
AREA of REVIEW	WELLS						
<u>9</u> т	otal # of AOI	R	<u>O</u> #	of Plugged \	Vells		
4 <u>65</u> T	abulation Coi	mplete	MAS	Schematics of	P & A's		
			` 1	OR Repair Re			
INJECTION FORM	ATION						
Injection Fo	rmation(s)	QUEEL	776	0-651	Compat	tible Analysis	4/5
				14 fw			
PROOF of NOTICE		<del>/</del>	<del>y</del> beer				
√ c	opy of Legal	Notice	<u></u>	nformation Pr	inted Cor	rectly	
_	orrect Operat		_	Copies of Cert		•	
	bjection Rece			Set to Hearing			
1'				oc to modning		Date	
NOTES:							
APPLI	CATION QUA	ALIFIES F	OR ADMI	NISTRATIVE A	APPROV	al? <u>4/</u> 5	
COMMUNICATION WITH CONT	TACT PERSON:						
1st Contact:	Telephoned			Nature of Discussion			
2nd Contact:	Telephoned Telephoned		Date	Nature of Discussion			

### NEW MEXICO OIL CONSERVATION DIVISION Form C-108 (Data)

Application of Yates Drilling Company
For Authorization to Inject Water
Into
Cactus Queen Unit #14
N-34-12S-31E
Chaves County, New Mexico

### I. Purpose

Application is made for administrative authorization to inject water into the Queen formation underlying the existing boundaries of the Cactus Queen Unit by utilizing the Cactus Queen Unit #14 well as an injection well. The existing unit is a currently active secondary recovery unit in Sections 27 and 34 of Township 12 South, Range 31 East, Chaves County, New Mexico.

### II. Operator

Yates Drilling Company 105 South 4th Street Artesia, New Mexico 88210 (505) 748-4500 Contact: Tobin L. Rhodes

### III. Injection Well Data

A well data sheet is attached for the proposed injection well. There is also a downhole schematic depicting how the well will be configured if this application is approved.

### IV. Existing Project

The proposed injection well lies within the boundaries of the existing Cactus Queen Unit. No expansion of the boundaries of the existing unit is proposed. The unit was approved by order R-9075-A, dated March 15, 1990 and expanded by order R-9075-A-1, dated January 26, 1993. Permission to inject into selected wells within the Cactus Queen Unit was granted March 15, 1990 by authority of order R-9075-B and injection into the expanded unit was granted under order R-9075-B-1, dated January 26, 1993.

### V. Area of Review

A lease ownership map is attached which identifies all wells and lease ownership within two miles of the proposed injection well. The area of review has been identified by drawing a one half mile radius around the proposed injection well on the attached base map.

### VI. Well Data

There are presently ten wells, including the proposed injection well, within the area of review. There are no wells within the area of review that have been plugged and abandoned. There are three wells within the area of review that are active injection wells, injecting water into the Queen formation. There are seven wells that are active producing oil wells, producing from the Queen formation. Available data for each of these wells is included in a well data sheet.

### VII. Project Data

- 1. The proposed daily average water injection rate is expected to be approximately 200 barrels per day for the proposed injection well. The maximum injection rate for the proposed injection well will be based on fracture pressures as determined by step-rate pressure tests to be conducted on the injection well. The maximum injection rate is expected to be less than 400 barrels per day.
- 2. Produced water and fresh water from the supply well will be stored in covered fiberglass storage tanks.
- 3. Initially, this injection well may take water on a vacuum, but as the reservoir fills a positive surface injection pressure will be required to inject water. The maximum injection pressure will also be determined by the planned step-rate pressure tests. At no time prior to the step-rate tests will the injection pressure exceed a pressure limitation of 0.2 PSIG per foot of depth to the top of the injection interval.

- 4. The source of injection fluid will be produced water from the Queen formation and fresh water from our fresh water well producing from the Ogollala Aquifer.
- 5. The Ogollala has been the source of water for many Queen waterfloods for many years without significant compatibility problems. We have had compatibility tests run with no compatibility problems observed.

### VIII. Geologic Data:

The Cactus Queen Unit produces from the upper sandstone member of the Queen formation, upper Guadalupian series, Permian system. The average producing depth in the field is approximately 2990 feet.

The productive/injection interval, as indicated from a whole core analysis on the Cactus Queen Unit #6 (330' FNL & 1980' FEL, Section 34-12S-31E, Chaves County, New Mexico) and from sidewall cores from numerous wells, is fine grained, friable, gray quartz sandstone. The grains are subangular to subrounded and well sorted. The cementing materials are anhydrite and dolomite. The exact depositional environment is unknown. Porosity and permeability are intergrandular in nature. The sandstone is not naturally fractured.

The Cactus Queen Unit reservoir is a stratigraphic trap. Cementation of the sandstone results in the loss of porosity and permeability, creating a barrier on all sides with the exception of the east. An oil/water contact has been established on the eastern edge of the reservoir.

The primary source of fresh water in this area is the Ogollala formation of Tertiary age, the base of which is estimated to be 300 feet below the surface. This aguifer is protected behind the surface casing and cement of the proposed injection well. The Chinlee formation is also a fresh water aquifer which immediately underlies the Ogollala formation. The base of the Chinlee is estimated to be approximately 500 feet below the surface in the unit area.

### IX. Stimulation Program

The proposed injection well has previously received a fracture treatment. The details of this treatment is outlined in the data sheet for the well.

This well may require a small clean-up acid treatment prior to injection. If needed we will treat the well with 500 to 1000 gallons of 7 1/2% hydrochloric acid. This treatment should insure that existing perforations are open and that the well will accept water at the lowest possible pressure.

### X. Well Logs

Well logs for the subject well have previously been submitted to the Hobbs office of the NMOCD.

### XL Fresh Water

The office of the State Engineer in Roswell has a record of seven wells within one mile of the unit area. The exact total depth of the wells is unknown, however all wells are assumed to be producing from the Ogollala formation. A water analysis was conducted on four of the wells. A copy of each analysis is attached.

### XII. Injection Zone Isolation

Available engineering and geologic data has been examined and no evidence of open faulting or any other hydrologic connection between the injection zone and any underground source of drinking water has been found.

### XIII. Proof of Notice

A listing of off-set leasehold operators within one half-mile of the proposed injection well and the surface owner(s) that have received a copy of this application by certified mail is attached.

### XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

TOBIN L. RHODES

PETROLEUM ENGINEER

July 15, 1996

	Činta sila						h sendangan s		
	" "		1	11.5	Ì	5.5. 094 12 0.5. 094 12	(4) 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
4	þ.		E.C. Ruckstuhl	Reading & Bates	4 B.L. Lee, etal.	3	Reading & Bates Vates Det	Mary Penjetal EP Oper,	
	14 ES	Borter Culp. Est p. Loc. etal  Wacker Oil,	5 · 1 · 98 State	7	Baxter Cuip, Est.		B-10411	- 1 H2335	
orce		Samedan /2 60052 U.S.	u.s.	Ruckstuhl 5-1 98 5-10894	Gulf C.Reod Berter H8P	Flag-Redfern Panhandle Roy	Pak olal Amoco	Der Reading L. Bates	77
	3€.\$8	Samedan	MWJ	51016	Cula, Est DS4 82 8 (B.L.) (Legenoli	M.L. Campbell stat  Nortex  Plains Radio 1 6 1 92	THE STATE	310 e	
	¥ 60	7 1 95 gi 61354	8 - i - 93 55944		16000	4 · 1 · 96   UH 1643   V-3614   179 !?	16,4463	Reading & Bates , £11 oft Oil, HBP HBP etc 5-10411 8-10411	,   <b> </b>
		_		Kew	Lee,etoi <del>ronee</del> Culp, Est.	7752	25 =	Nortex 6.1-92 LH-8645	
	JE.60	<sub>j</sub> . 7		C.B.Read	9 <del></del>   <del></del>	Reading EBates   Nortex		12	- 1
	3R.60		O'Brien Goins E, Surpson	054926	1600 1600	8-10411 LH1643	1	Elliottoil.	Щ
	i	Goins E. Simpagn B4773 4089	64734 4084 U. S.	u. s.	State	Nortex I Plans 1 179 2 6-192 Radio 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Chevren EFO 11: 34-1-28 11: 3-4-1-28 11: 3-4-1-25	Bratta GLAGE LA L	ıħ
- C.	36.68	Bison Pet.	Rebaing & Bate E.S Mager, Jr., etc Frostman Dil 3/4/to	Wiles Pol	Great Westin.,etal	179 12   V-3614   T752 State	135 11 State 25		4
<u>15</u>	Tc.ss	HBP 2 0553799	Reading 6 Bates Freetman Oil	1 102867	8: 9541		H 8 P F 8-104%	Chavron H&P 8:445	
		# 18/11/4/39/A	E.S.Mayer, Jr., etally Syl (Surk Roy) (to Glor, form) Y 2 Mill	1	2002	,,,~	EP Oper EP LG 4803 Oper end X	EP Crer., Gallagher etal   Tree HBP   B 9495	
	JG.58	natura Greekenn (kil	Reading & Bate E.S.Mayerur, etal	י יופרי ו	6-7-10-0-1-1-1		LG 4803 (purell) XI	4 HOT FP (m. JEP Oper)	
etal	<b>36.56</b>	TOZ490 (F.Stringer)	Reading & Bates Frostman Cul	8-8469	-V-2544- 30-V-	CAPTILLK III.	M:(4)	Farming the rest in the rest	1
) and (0.1	31 (1	U. 5.	(Burk Roy. 1/2)	51	12	31 State	DP Don Amer EP Oper 11 - 87 - 870 fe 15 - 16 - 4803 D1A4 23 69 State 25 78	M Chandler Receive LBare P Cher. Rep HBP H R R R R R R R R R R R R R R R R R R	
166 92	31.51	Amoco Burk Roy 1/2 L-725 Bison Pet. 10 2712'	Burk Roy. 1/2 Bison Pet (C.B. Read 12-1-78 et al) 宋1 19674 (551926	Reading & Bates I E.S. Mayer, b. Burn etal 1/4 Free	k Rou'/2	Cross Timbers	Yates Pet etal : Yates Per ctal	FR Own	<b>⋠</b>
	3 <b>7.57</b>	Surk Ray. 1/2 Bison Pet HBC E/2 E: 1 74	KGS     Reading a Bates	(to Gior.form)03142	2.0	Manuel & Louis Watter, 2 HBP B-10417	1 99 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The state of the s	
	3c.sc	3	New Mez. Rend & Stevens	ام حا	Reading & Bates E.S.Mayer,Jr.etat ¥4(to Glor.form.)	22	51:214		
		May no	Winton Gas	Reading & Bates	I	Votes Orio what	Cobsen Engerch	24	1
	F6.56		10905   HBP   	J.F. Stringer 31 Terra-Fed. TO 4050 D/A12-9-70	Reading & Bates E.S.Mayer, Jr. etal 5 . 3/4 († 6 Glor. form)	Anodorko Pelanarra 12900 10:1-87 12900	Coboon Enterch Graham 4 17 PM TD3014 DIA126 61	The latest and the la	4
-	36.58	U.S. State	Frostman Oil				OART TO NUMBER OF THE	200 T 6 24	
³e†.	Je se	- <del>- 25917</del>	Yotes Origietally yates Origietal	Reading & Bates E.S.Mayer, Bur ür. etal 3/4 (ta Gior. form) 031421	u i	Aminail Partnership HBP 5193 90584 54301	Emserch	The second secon	7
	\$	Datport Engle-Fed. T02495 D/A2 20-73	Dalaart	[	Reading & Bates S.Mayer, Jr. etal 3/4 (to Glor. form)	Yates,etal 1/2 Yotes Dis Rich-Fee: Tosloa	CACTUS ON UI LYATES DRUG (Oper)	Will the state of	1
 89	1656 1 <del>201</del> 01	- Yetes Pet Curry	29-	Reading & Bates	١ .	Hallwood Per October Series Dyla	hingh 3-chem	25	
vens	77	2 1 56 VA-185 32 53		3/4 (to Glor.form.)		Lifting Garner	Gene 3113 Her		1
		U.S. State	eres - Fed. U.S.		Reading & Bata S.Mayer Jr. eta 34 (*) Stor Form	"Apoche st Fed" Doya!"	POBIS  A Doyal  Robinson crusas	Character Property	1
	36.56 /	1	C.B.OrG UPB Fed 31:4 Reading EBates	U. S. <del>Yates∏et.stal</del>	. 1	Yettes Drig - Drig - to 1000	E.C.A.Dayol.etol	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
:g£,	36.54 Z	3 1 97	H B P Forister B · 104 (1 Sweath To Zeo	<u></u>	90583	- DeLunded of or	Gallegher Tr. Heat		1
10 & vens 202 27 66 27 66 2073	,,,, -	31	30	M.J.Harvey,Jr. 1 11-1-97 8-9818 29-99 323		Art Noil 5-20	8.10420	A STATE OF THE STA	1
na co	36.54 J		Feather- store II /2 Feather stone Dev 4 · 1 · 99	2	Aminoil		Great TMatco 35- (Varie Per esterni HBP 10-9359 Trettol 318	Gran Falling	1
1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	JC.S2 7	1   5			yates etal Va	De Luna-Fed Prod. Sf	B 5355 State HBP	Control 100 to 1	1
235	36 53 4	40.67 3 46 12 7 20 14 1 46	eather-T Great 37 22 one 199 et al. 199 et a	U. 5.	<u> </u>	ates Drig, etal Garner-Fed." 26683 Dove-Feature	0-1-98 0-1-98	Anodorielamer was to the state of the state	<b>—</b>
**	19tes 946 36	Petetal Hunt Oil Fi	Burk Rou /2	Burmah 0EG : 90584	Yates Pet etal	1 Yortes Drig 5# (Devon Ener.) et al. 2 34465 1 Yortes Drig 5# (Devon Ener.) 00560 (Aminoil) Circle Ridge Prod.	Grivest Grivest Gollo-		
	See 3 Yates (	07/g.etal	1.629 West Mark 15499  Cone 15 Street For Ister & Sweath to 1.98 Burk Rey et al to 2750' 33671   3-1-81   Read Estevens, et al 18241   16819 Hac	Yates XI P		Gorner Fed (Son) of Orig.	Gallo- Great Western (Grwestnisch web g5 g6 etale) 48	Company in the state of the sta	
	] i § 36.73 . €		5-15-15-15-15-15-15-15-15-15-15-15-15-15	Freshman on	rtes Pet, etal AA 25,6521 ⊕ AA 1916- ⊕ An O.14 & 3 mil. A. Traffes & fan, 1/2	6 U.S. Predig. 90583	Galla-	mandle Crandolline	1
		Moduolia .	Riegel & Deother), NS second w/z HBC 24441 Signal Riegel R	S.P. Yates etal   HBP 0256521		Grehan, Est) Livermore water	Great Western I Great Wester	Angdorto is als siste	
	3c.82" *	TD12072	E/2 HBC		# folger Drig	Williams DIAS-26-45 to 3000	IGuila   joher, Tr.   Yores Fet, et al		h
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		funt Oil   Frostman Oil 1/2	(Hill Chem.) U.S. Goodrich et al	U.S.	100 Sept 20 1	(I.N.R.J. Ener + - Devon 1	raciage(No) 20 State	(Anodarka) C.R.	1
	9 38.95 2	31134 7.1 92 F	rostman Oil Read & Stevens.eta	<del>Vales (ch. chal-</del> ) s - <del>0.4076-</del>   -4589-	P Yates, et al HBP 0266521	below 3000')   Ener   20968	Sunselia 1995	(Anodarka) Gollogherus	
			Duncan-Fed.	Steeler 1	regardent regardent	Various Carl	Yafesons (Anadorko) (Ambiso	Anadarko NA PO	
₩	36 99 J <sup>†</sup>	!	Burk Roy 12 1 Yates eta: 1/2	For ister & Sweatt 9 -	******	Devon Ener (Martin)	چو ج ا ا 1 ایر	8-10417 8-10410 	1
	Tras ät	)   Manhattan	15898 Penrose HBP Femre V 90584 VST 7 2880 1	Read & Stevens, etal	36-20-	HBP (Hartin) 7 20968 103036 Lensa 2	(Grøridge)	Ana Grandes Briotzo et al Store	<b>a</b>
		U.5 103669	70 28 80 9 3 2 8 4 5 U S	u s	Forester 1. Sweath Frata-Fed. 3	Lenda 2 Williams 2 16-21-0 IW'lliams 2 79 U.S. Fed To 3034	*Pebble Queen*State	E-7878 STORMAN SHOPE	<b>_</b>
63 1	37.10 / Dakotal Starshad	oferE. Egan	Hunt Oil   Yates Drig.   1   Yates Drig.   1   1   1   1   1   1   1   1   1		Noss Reading Noss & Bates A& & Bates 2 ters & HBP HBP B-10411	(Kewanee)	(Gr. West ) Gr. West.	Gr. West a Stammout Gr. West A nodorto	ħ
	3716 \ 31	55945	Foriater	วิเกีย	1	2-28-06 9623000 (br West of	Ir. near. たたち 4 正6号 コーラー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	6 Ges Grinestin	
2	; 20 J	Oalport Sarynberg Fed	stmon 0'11/2 Totose o'172	HBP 8-84! 16	59	35.2 11.30 15 =172E	5 (cfo) &   5 (cfo) &   6 (cfo) &   7 (cfo	etab a	
ľ		702520 0/4 12 24 72	FUER ROU Amunoil	Amoco HBP AT	Yates mocolPet.etal	Gr. Westin	Gr. West.) Gr. West.iGr. West	12-4840 (Gu)	
	prze zł.	Traitene Br	F med	18-16	04I9-39 V-2619	3 di	Gr.West Gr. West	An want for want so went a College	<b>]</b> _
-	<del>,, ,</del> +	. <u>\$</u> .	1241 U.S.	State	<del></del>	Kewange)- (Gr.Westin	Gr West) 18-399	613   615	
	L.E.Ega 5594	In → 1-191 Amoco 3 → 1-191 HBP 5 Trigg! HBP FEd-Kim 080126	Burk Rey 12 Anadarka 1711. Turk	Anadarko i j	H	Tess E-Sess 1"BM 3" 1 Ross	Tere Hamartess reserve	Collier SolsChept 1 199876	ξ
₹×	1736 2ª	Fed-16/m 10 3689	Anodorko   1 1 96   65 918	ا مثان <del>الخ</del> ر		N.Adama leirese i Sears I	STORY OLICEN	Gulf Is Torwest A Self	h
	,Ame	OCO   LCHU   Personal	1 45 9 1 Snädärko 20 Bison Pet.)   Anadarko	Friend-Fed." 76	enf Wasian Be	rar sares 1, 1990 Geror	SAND BES. 100 F.S. 10	(1936)   1866, 1962   1936; 24   1962   1936; 25   1962   1936; 26   1962   1936   1936	
	на 980 1-, , <sub>8-т</sub>		Burk RoyJ 3-1-85	HBP :	etal	8	ROCK OUEEN BH	Coquing of	
			diport-Fed. U. S.	i	2 210	and a series and Cherest Gole St. 22 St. 22 St. 30	Sond Res Kareen Sond C	Sight   See   Sight	
	~ 8	Burn Roy	ities Service + Cities Service	Amoce 1	107	Tr. 3	Chaves Crafe Store Ch St	Mani T	
	ru ij	100 16 17432	080:21 080:74   Andderka	HBP 185	44018 1192	2 (M.R. Antwell)	Tr. 15 Forty & M. S. Coauling	Germannen	ľ
l	y, <b>ng</b> - g Bara	30		28		Tr.4	• N. • 0.600Ed	s schevron,	
		.,,,,	***************************************			45me (OKY)	5 1843 - 5.060 5 26 8 3.46 5.46 5.46 5.46 5.46 5.46 5.46 5.46 5	25	

# AREA OF REVIEW WELL DATA

	ď	1	g			
=	Pumping	Pumping	Pumping	Pumping	Pumping	CURRENT STATUS
	6,000# 12/20 Sand			22,000# 12/20 Sand		
6,800# 12/20 Sand	16,500# 20/40 Sand			43,000# 20/40 Sand	12,500# 10/20 Sand	
7,000# 20/40 Sand	25% CO2	20,000# Sand	13,500# 10/20 Sand	25% CO2 and Frac 30	24,000# 20/40 Sand	
10,000 gals. gelled water	20,000 gals. gelled water	20,000 gals. gelled water	14,215# 20/40 Sand	35,000 gals. gelled water	30,000 gals. gelled water	
Frac'd w/ 2,500 gals. 15% MCA	Frac'd w/ 750 gals. 15% NE	Frac'd w/ 500 gals. 15% HCL	Frac'd w/ 1500 gals. 15% HCL	Frac'd w/ 1000 gals. 15% HCL	Frac'd w/ 750 gals. 15% HCL	COMPLETION RECORD
2718'-2748'	2874'-2882'	2983'-3003'	2773'-2789'	2989'-2997'	2695'-2701'	PERFORATIONS
4 1/2" @ 2,900' W/ 250 Sxs	5 1/2" @ 3,080' W/ 360 Sxs.	5 1/2" @ 3114' W/ 252 Sxs.	5 1/2" @ 2891' W/ 235 Sxs.	5 1/2" @ 3108" W/ 250 Sxs.	5 1/2" @ 2,920' W/ 230 Sxs.	
8 5/8" @ 400' W/240 Sxs	8 5/8" @ 450' W/300 Sxs.	8 5/8" @ 566' W/225 Sxs.	8 5/8" @ 371' W/230 Sxs.	8 5/8" @ 408' W/250 Sxs.	8 5/8" @ 374' W/300 Sxs.	CASING PROGRAM
2,900 Feet	3,100 Feet	3114 Feet	2900 Feet	3108 Feet	2925 Feet	TOTAL DEPTH
1-Sep-82	7-Apr-84	6-Jun-84	14-Aug-84	7-Jul-84	1-Mar-84	COMPLETION DATE
Yates Drilling Company	Yates Drilling Company	Circle Ridge Production, Inc.	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	OPERATOR
Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM	
L-34-12S-31E	F-34-12S-31E	B-3-13S-31E	C-3-13S-31E	0-34-12S-31E	D-3-13S-31E	LOCATION
CQU UNIT #10	CQU UNIT #8	TAO FEDERAL #1	GARNER FEDERAL #6	GARNER FEDERAL #4	GARNER FEDERAL #1	WELL

# AREA OF REVIEW WELL DATA

				OHDDEN'T OTATIO
	6,000# 10/20 Sand			
7,000 # 10/20 Sand	16,500# 20/40 Sand	1,700# 12/20 Sand	6,000# 12/20 Sand	
16,500 # 20/40 Sand	5,000 gals. CO2	16,500# 20/40 Sand	16,000 20/40 Sand	
5,000 gals. CO2	15,000 gals. gelled water	20,000 gals. gelled water	20,000 gals. gelted water	
Frac'd w/ 15,000 gals gelled water	Frac'd w/ 750 gals, 15% HCL	Frac'd w/ 750 gals. 15% HCL	Frac'd w/ 750 gals. 15% HCL	COMPLETION RECORD
2760'-2765'	2723'-2730'	2982'-2990'	2773'-2781'	PERFORATIONS
5 1/2" @ 2,925' W/ 950 Sxs.	5 1/2" @ 2,925' W/ 250 Sxs.	5 1/2" @ 3,098' W/ 550 Sxs.	5 1/2" @ 2,915' W/ 250 Sxs.	
8 5/8" @ 390' W/220 Sxs.	8 5/8" @ 368' W/265 Sxs.	8 5/8" @ 410' W/250 Sxs.	8 5/8" @ 374' W/275 Sxs.	CASING PROGRAM
2,925 Feet	2,925 Feet	3100 Feet	2,925 Feet	TOTAL DEPTH
12-Dec-83	9-Feb-84	1-Jun-84	1-Mar-84	COMPLETION DATE
Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	OPERATOR
Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM	
N-34-12S-31E	M-34-12S-31E	J-34-12S-31E	K-34-12S-31E	LOCATION
CQU UNIT #14	CQU UNIT #13	CQU UNIT #12	CQU UNIT #11	WELL

### WELL DATA SHEET

OPERATOR: YATES DRILLING COMPANY LEASE: **CACTUS OUEEN UNIT #14** 

FOOTAGE: 990' FSL & 1650' FWL LOCATION: Section 34-12S-31E

COUNTY, STATE: Chaves County, New Mexico

SPUD DATE: November 16, 1983 **COMPLETION DATE:** December 12, 1983

**CURRENT STATUS:** Active producing well - Queen PROPOSED STATUS: Active injection well - Queen

### **TUBULAR DATA**

SURFACE CASING PRODUCTION CASING

5.5" 8.625" CASING SIZE: CASING SIZE:

CASING WEIGHT: 24.000 POUNDS/FOOT CASING WEIGHT: 14.000 POUNDS/FOOT

CASING GRADE: J-55 CASING GRADE: J-55 **DEPTH SET:** 390' DEPTH SET: 2925' CEMENT USED: CEMENT USED: 220 SXS. 950 SXS. TOP OF CEMENT: 0' TOP OF CEMENT: 0"

DETERMINED BY: CIRCULATE **DETERMINED BY: CIRCULATE** HOLE SIZE: 12.25" HOLE SIZE: 7.875"

TOTAL DEPTH: 2,9251 PLUG BACK: 2880'

INJECTION OR PRODUCING INTERVAL

INTERVAL BOTTOM: 2765 INTERVAL TOP: 2760'

COMMENTS: Perforated

PREVIOUS STIMULATION: 15,000 gals. 30#/1000 gelled KCL water, 5000 gals. CO2,

16,500# 20/40 and 7,000# 10/20 sand.

PROPOSED STIMULATION: 500-1000 gallons of 7 1/2% HCL to clean perforations.

TUBING:

TUBING SIZE: LINED WITH: Plastic 2.375" **DEPTH TO BE SET: 2713.45'** PACKER: Nickel plated tension packer

### OTHER DATA

- 1. NAME OF INJECTION OR PRODUCING INTERVAL: Queen
- NAME OF FIELD OR POOL (IF APPLICABLE): 2. SE Chaves Oueen
- 3. IS THIS A NEW WELL DRILLED FOR INJECTION?

No

IF NO, FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED?

This well was originally drilled as a Queen producing well.

HAS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)? 4

LIST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING DETAILS (SACKS OF CEMENT OR BRIDGE

PLUG (S) USED):

None

GIVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR UNDERLYING OIL OR GAS ZONES (POOLS) IN 5. THIS AREA:

There has never been any production from any formation other that the Queen in the area surrounding this well.

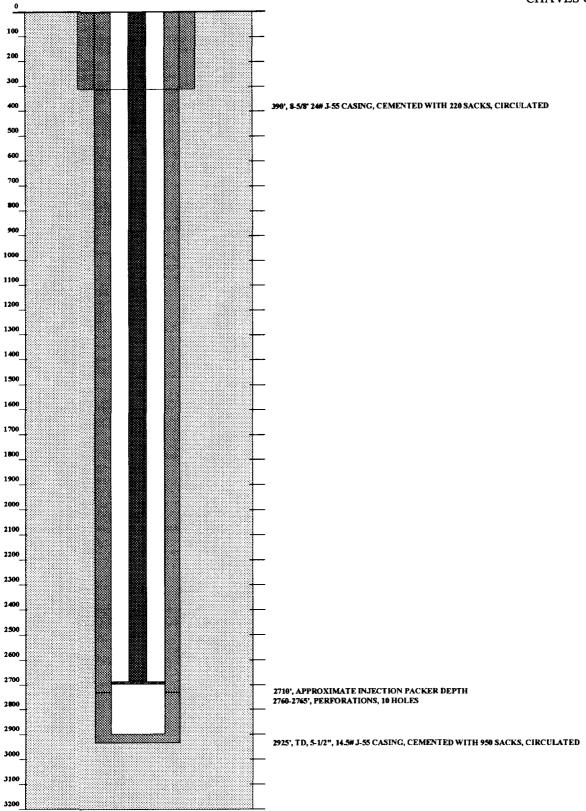
IF WELL IS PLUGGED AND ABANDONED, LIST DETAILS OF PLUGGING AND 6. ATTACH SCHEMATIC.

Not applicable.

### **CACTUS QUEEN UNIT #14**

N34-12S-31E

CHAVES COUNTY, NM



Wat	er Well	<u> </u>		======				
	1	:	1	: QTR	:		i	i ·
	Ì	1	:UNIT	! OF	1			1
SEC	TWN	1 RNG	LTR	IUNIT	1	αT	TYPE	t #t
=====	======	=====	:=====	: = = = = = =	===	=====	======================================	
24	1128	131E	ΙK	17	1	148	:DOM.	164993
24	1125	131E	: F	17	;	160	DOM.	16649
26	1125	31E	ΙE	1?	l	166	IDOM. & STK	1L6746
V26	1128	31E	! L	17	17		:IRR.	L2117
V26	1128	131E	10	17	1	198	(COM. (CIL & GAS)	
	1125	:31E	10	17	!	198	:COM., DOM. & ST	:1L6749
$\nu$ 27	1125	31E	114	1?	!	160	IDOM. & STK	L6650
<b>~</b> 35	1125	:31E	1F	! NW	;	55	:DOM.	L4170
<b>~</b> 35	1125	131E	:IJOP	17	17		17	1L2932
1	1135	131E	łK	SE	1	190	! WF	1L3460
.1.	1138	131E	iP	SE	1	220	:WF	(L3461
1	1135	:31E	l M	ISW	;	190	:COM. & STK	L3837X
1	:135	:31E	! M	1 SW	:	165	COM. & STK	:L3837
2	:135	131E	i H	(SW	;	165	(DEC.	1L3834
2	1135	31E	11-1	17	17		:WF .	IL4295
2	1138	131E	IH	INE	į	196	:SRO	L3914
2	138	431E	: H	ISW	ł	165	IDEC.	113835
2	1138	131E	i P	:SE	17		1?	1L3806
2	1135	SIE	¦ I	! NE	!	216	ISRO	L2745
12	1135	131E	! A	17	1	217	ISRO	1L3460
13	1138	131E	IABCD	17	17		I OWD	1L2933
24	:138	:31E	l H	INE	1	196	:IND.	L3914
35	1138	131E	!F	W2	17		:DOM.	1L2849

·:

( · · ·



(505) 746-3588 Fax (505) 746-3580

> Reply to: P.O. Box 1140 Artesia, NM 88211-7531

# WATER ANALYSIS REPORT

Company : YATES DRILLING Address : ARTESIA, NM Date : 04/16/96 Date Sampled : 04/15/96 Lease : WILLIAMS Analysis No.: 0273

: RANCH HOUSE Well

Sample Pt. :

	ANALYSIS			mg/L		* meq/L
1.	рн	7.1				
2.	H2S	O PPM				
3.	Specific Gravity	1.000				
4.	Total Dissolved Solid	ds		690.3		
5.	Suspended Solids			NR		
6.	Dissolved Oxygen			NR		
7.	Dissolved CO2			NR		
8.	Oil In Water			NR		
9.	Phenolphthalein Alka	linity (C	CaCO3)			
10.	Methyl Orange Alkalin	nity (CaC	203)			
11.	Bicarbonate		HCO3	256.0	нсо3	4.2
12.	Chloride		Cl	106.0	Cl	3.0
13.	Sulfate		SO4	125.0	SO4	2.6
14.	Calcium		Ca	74.0	Ca	3.7
15.	Magnesium		Mg	12.2	Mg	1.0
16.	Sodium (calculated)		Na	117.1	Na	5.1
17.	Iron		Fe	0		
18.	Barium		Ba	NR		
19.	Strontium		Sr	NR		
20.	Total Hardness (CaCO	3)		235.0		

### PROBABLE MINERAL COMPOSITION

*milli equivalents per Lit	er	Compound	Equiv wt	X meq/L	= mg/L
++	++				
4  *Ca < *HCO3	4	Ca(HCO3)2	81.0	3.7	299
>		CaSO4	68.1		
1 *Mg> *SO4	3	CaCl2	55.5		
/		Mg (HCO3)2	73.2	0.5	37
5  *Na> *Cl	3	MgSO4	60.2	0.5	30
++	++	MgCl2	47.6		
Saturation Values Dist. Wa	ter 20 C	NaHCO3	84.0		
CaCO3 13	mg/L	Na2SO4	71.0	2.1	149
CaSO4 * 2H2O 2090	mg/L	NaCl	58.4	3.0	175
BaSO4 2.4	mg/L				

**REMARKS:** 



(505) 746-3588 Fax (505) 746-3580

> Reply to: P.O. Box 1140 Artesia, NM 88211-7531

# WATER ANALYSIS REPORT

Company : YATES DRILLING Date : 04/16/96 Address : ARTESIA, NM Date Sampled : 04/15/96 Lease : TIVIS Analysis No. : 0276

Well : RANCH HOUSE

Sample Pt. :

	ANALYSIS			mg/L		* meq/L
						~
1.	pН	7.0				
2.	H2S	O PPM				
3.	Specific Gravity	1.000				
4.	Total Dissolved Solid	ds		731.1		
5.	Suspended Solids			NR		
6.	Dissolved Oxygen			NR		
7.	Dissolved CO2			NR		
8.	Oil In Water			NR		
9.	Phenolphthalein Alka	linity (	CaCO3)			
10.	Methyl Orange Alkali	nity (Cao	203)			
11.	Bicarbonate		нсо3	231.0	HCO3	3.8
12.	Chloride		Cl	106.0	Cl	3.0
13.	Sulfate		SO4	175.0	SO4	3.6
14.	Calcium		Ca	102.0	Ca	5.1
15.	Magnesium		Mg	6.1	Mg	0.5
16.	Sodium (calculated)		Na	110.9	Na	4.8
17.	Iron		Fe	0		
18.	Barium		Ba	NR		
19.	Strontium		Sr	NR		
20.	Total Hardness (CaCO	3)		280.0		

### PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
++				
5  *Ca < *HCO3   4	Ca(HCO3)2	81.0	3.8	307
/	CaSO4	68.1	1.3	89
1  *Mg> *SO4   4	CaCl2	55.5		
<	Mg(HCO3)2	73.2		
5  *Na> *Cl   3	MgSO4	60.2	0.5	30
++	MgCl2	47.6		
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0	1.8	130
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	3.0	175
BaSO4 2.4 mg/L				

REMARKS:

\_\_\_\_\_



(505) 746-3588 Fax (505) 746-3580

> Reply to: P.O. Box 1140 Artesia, NM 88211-7531

### WATER ANALYSIS REPORT

Company : YATES DRILLING Date : 04/16/96 Address : ARTESIA, NM Date Sampled : 04/15/96 Lease : GRAHAM Analysis No. : 0275

Well : WATER WELL

Sample Pt. :

	ANALYSIS			mg/L		* meq/L
1.	рн	7.0				
2.	H2S	O PPM				
3.	Specific Gravity	1.000				
4.	Total Dissolved Solid	s		1102.7		
5.	Suspended Solids			NR		
6.	Dissolved Oxygen			NR		
7.	Dissolved CO2			NR		
8.	Oil In Water			NR		
9.	Phenolphthalein Alkal	inity (C	aCO3)			
10.	Methyl Orange Alkalin	ity (CaC	03)			
11.	Bicarbonate		HCO3	244.0	HCO3	4.0
12.	Chloride		Cl	127.0	Cl	3.6
13.	Sulfate		SO4	400.0	SO4	8.3
14.	Calcium		Ca	106.0	Ca	5.3
15.	Magnesium		Mg	20.7	Mg	1.7
16.	Sodium (calculated)		Na	205.0	Na	8.9
17.	Iron		Fe	0		
18.	Barium		Ba	NR		
19.	Strontium		Sr	NR		
20.	Total Hardness (CaCO3	)		350.0		

### PROBABLE MINERAL COMPOSITION

\_\_\_\_\_\_\_ \*milli equivalents per Liter Compound Equiv wt X meq/L = mg/L+----+ +----+ 5| \*Ca <---- \*HCO3 | 4| Ca(HCO3)2 81.0 4.0 324 |----> |-----| CaSO4 68.1 | 8| CaCl2 55.5 1.3 88 2¦ \*Mg ----> \*SO4 Mg(HCO3)2 73.2 |----| !----! 4 MgSO4 60.2 MgCl2 47.6 9¦ \*Na ----> \*Cl 1.7 103 +----+ Saturation Values Dist. Water 20 C NaHCO3 Na2SO4 84.0 CaCO3 13 mg/L 71.0 5.3 379 NaCl CaSO4 \* 2H2O 2090 mg/L 58.4 3.6 209 BaSO4 2.4 mg/L

REMARKS:

-----



(505) 746-3588 Fax (505) 746-3580

> Reply to: P.O. Box 1140 Artesia, NM 88211-7531

## WATER ANALYSIS REPORT

Company : YATES DRILLING
Address : ARTESIA, NM
Lease : CACTUS QUEEN
Well : WATER WELL Date : 04/16/96 Date Sampled: 04/15/96 Analysis No.: 0274

Sample Pt. :

	ANALYSIS			mg/L		* meq/L
1.	рН	7.1				
2.	H2S	O PPM				
3.	Specific Gravity	1.000				
4.	Total Dissolved Solid	s		647.6		
5.	Suspended Solids			NR		
6.	Dissolved Oxygen			NR		
7.	Dissolved CO2			NR		
8.	Oil In Water			NR		
9.	Phenolphthalein Alkal.	inity (C	aCO3)			
10.	Methyl Orange Alkalin	ity (CaC	03)			
11.	Bicarbonate		HCO3	195.0	HCO3	3.2
12.	Chloride		Cl	127.0	Cl	3.6
13.	Sulfate		SO4	125.0	SO4	2.6
14.	Calcium		Ca	102.0	Ca	5.1
15.	Magnesium		Mg	0.1	Mg	NR
16.	Sodium (calculated)		Na	98.5	Na	4.3
17.	Iron		Fe	0		
18.	Barium		Ва	NR		
19.	Strontium		Sr	NR		
20.	Total Hardness (CaCO3)	)		255.0		

### PROBABLE MINERAL COMPOSITION

*milli equivalents per Lit	er	Compound	Equiv wt	X meq/L =	mg/L
++	++				
5 *Ca < *HCO3	3	Ca(HCO3)2	81.0	3.2	259
>		CaSO4	68.1	1.9	129
0   *Mg> *SO4	3	CaCl2	55.5		
\/		Mg (HCO3)2	73.2		
4 *Na> *Cl	4	MgSO4	60.2	NR	0
++	++	MgCl2	47.6		
Saturation Values Dist. Wa	ter 20 C	NaHCO3	84.0		
CaCO3 13 1	mg/L	Na2SO4	71.0	0.7	50
CaSO4 * 2H2O 2090 r	mg/L	NaCl	58.4	3.6	209
BaSO4 2.4 m	mg/L				
2.4	y/ 1				

**REMARKS:** 

### AFFIDAVIT OF PUBLICATION

**County of Chaves State of New Mexico** 

I, Gina Brooks, Legal Clerk,

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published once a week in the regular and entire issue of said paper and not in a supplement thereof for a period

or: one time	WCCV2
•••••	**********
beginning with iss	ue dated
June 13TH	, 1996
•••••••	
and ending with th	he issue dated
June 13TH	, 1996
***************************************	********
Mimy	20 mrs
	Clerk

Sworn and subscribed to before me

day of

June ,1996

Manylon Llagger

Notary Public

My Commission expires

July 25, 1998

(SEAL)

this 13TH

Publish June 13, f19967
Yates Drilling Company hereby gives notice to the public that it will be filing an application with New Mexico Oil Conservation Division seeking authority to inject water for the purpose of secondary recovery in its Cactus Queen Unit well #14, located 990 feet from the South line and 1650 feet from the West line of Section 34, flownship 12 South, Range 31 East, N.M.P.M., Chayes County, New Mexico. The proposed injection, will be jinto the Queen formation between the depths of 2750 feet and 2765 feet. The maximum injection rate sought is 400 barries per day and the maximum initial surface pressure to be used will be 552 FSIG. Any increase in the maximum surface pressure will be based on step rate tests and subject to New Mexico Oil Conservation Division approval. Any objection to this application must be filled within fifteen (15) days of the date of the date

### **LEASEHOLD OWNERSHIP**

T-12-S, R-31-E
Section 33: SE/4NE/4, E/2SE/4
Section 34: S/2NW/4, SW/4, SW/4NE/4, W/2SE/4
T-13-S, R-31-E
Section 3: N/2NW/4
Section 4: NE/4NE/4
Chaves County, New Mexico

Yates Drilling Company 105 South 4th Street Artesia, NM 88210

T-13-S, R-31-E Section 3: NW/4NE/4 Chaves County, NM

Circle Ridge Production, Inc. 300 E. Northside Dr. Fort Worth, Texas 76106-9234

### **SURFACE OWNER**

W.T. Tivis, Jr. P.O. Box 1614 Eunice, NM 88231

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



### STATE OF NEW MEXICO

# ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

# OIL CONSERVATION DIVISION HOBBS DISTRICT OFFICE

GOVERNOR

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

IL CONSERVATION DIVISION . O. BOX 2088 ANTA FE, NEW MEXICO 87501
E: Proposed:  MC DHC NSL NSP SWD WFX PMX
entlemen:
have examined the application for the:  Nates Drilling Co Cectus Queen Unit 14-W 34-12-3  perator Lease & Well No. Unit S-T-R
G K
ours very truly / lerus setton
erry Sexton upervisor, District 1